Does Corporate Governance Affect Firms' Market Values?
Evidence from Korea[†]

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Abstract

We report evidence that corporate governance is an important factor in explaining the market value of Korean public companies. We construct a corporate governance index (0~100) for 526 companies based primarily on responses to a Spring 2001 survey of all listed companies by the Korea Stock Exchange. The index is based on five subindices for shareholder rights, board and committee structure, board and committee procedures, disclosure to investors, and ownership parity. A moderate 10 point increase in the corporate governance index predicts a 6% increase in Tobin's *q* and a 14% increase in market/book ratio in ordinary least squares (*OLS*) regressions. A worst-to-best change in the index predicts a 42% increase in Tobin's *q* and an 96% increase in market/book ratio. This effect is statistically strong and robust to choice of market value variable (Tobin's *q*, market/book, and market/sales) and to specification of the corporate governance index. Each subindex is a significant predictor of higher Tobin's *q* (and other market value variables). This value effect appears to be primarily because investors value the same earnings more highly for a better governed firm, rather than because better-governed firms generate higher earnings or pay higher dividends.

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

Key words: Korea, corporate governance, , corporate governance index, law and finance, firm valuation

JEL classification: G32, G34

I. Introduction

How do a country's corporate governance rules, or the corporate governance practices of individual firms within a country, affect firms' market value and performance? A well-known line of research that begins with a series of papers by La Porta, Lopez-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 these firms' market values. This question is central when individual firms – which can change their own practices, but not their country's rules – must decide whether and how to change their corporate governance practices. To what extent can a firm increase its market value by upgrading its corporate governance practices? Conversely, to what extent is it tied to its home country's overall reputation?

This second question is central to the usefulness to investors of the new private sector corporate governance rankings, including those launched by Deminor in 2000 (Deminor, 2000; Coppieters, 2001), by Credit Lyonnais Securities Asia (CLSA) in 2001 (CLSA, 2001; Gill, 2002), by Standard & Poor's in 2001 (Patel, Balic and Bwakira, 2002), and by Institutional Shareholder Services in 2002 (McGurn, 2002).

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

This paper is one of several roughly contemporaneous papers, primarily studying emerging markets, that provide evidence that within-country variation in governance practices affects firms' market values. For related research, see Black, 2001 (Russian firms); Durnev and Kim, 2003 (using CLSA and Standard & Poor's rankings); Klapper and Love, 2002 (using CLSA rankings); Gompers, Ishii and Metrick, 2003 (studying United States firms). Our paper differs from this related research in a number of ways.

[1] La Porta et al. (1997, 1998, 1999, 2000, 2002). For selected criticisms of this approach, see Coffee (2001); Berkowitz, Pistor & Richard (2003).

First, our sample includes almost all listed Korean firms, both large and small. The other papers that study firms in emerging markets study only large firms.

Second, our focus on a single important emerging market with good data availability allows us to use a much more complete set of control variables than are available in a multicountry study. Thus, our results are less likely to be subject to omitted variables bias.

Third, we use a broad, multifactor corporate governance index, which is based on responses to objective questions. In contrast, the S&P rankings are based only on disclosure; the Gompers, Ishii and Metrick rankings are based primarily on takeover defenses, the CLSA rankings are partly based on analysts' subjective views, which could be influenced by the analyst's knowledge of firm performance. Disclosure quality correlates strongly with other aspects of corporate governance (see this paper and Black (2001)), so the correlation between firm market value and disclosure quality may largely reflect omitted corporate governance variables. Takeover defenses are important in the United States, but largely irrelevant in Korea and other countries where most firms have a controlling shareholder.

Fourth, Korea's corporate governance rules uniquely let us use an instrumental variables approach to partially address signaling and endogeneity explanations. Several important rules apply only to firms that have assets of at least 2 trillion won (roughly US$2 billion). Below, we refer to these firms as "large" and firms with assets less than 2 trillion won as "small." This variation in exogenously imposed legal rules lets us construct an instrument (an asset size dummy at 2 trillion won) for our corporate governance index, while using a separate variable (*ln*(assets)) to control for firm size. The asset size dummy variable correlates strongly, but not too strongly, with our principal corporate governance index, *CGI* (r = 0.74). It and should be a respectable instrument for the exogenous component of *CGI* as long as *ln*(assets) captures most of the variation in Tobin's q based on firm size. Other studies of within-country variation in corporate governance lack plausible instruments. Our results are similar in *OLS*, two-stage (*2SLS*), and three-stage (*3SLS*) least squares regressions, with strong t-statistics in all specifications and larger coefficients in the simultaneous equations results. These results strengthen our confidence in the *OLS* results, are consistent with causation running from good governance to higher firm market value, and do not support either the signaling hypothesis or the endogeneity/reverse causation hypothesis that more highly valued firms adopt better governance rules.

Fifth, we preliminarily assess the most likely sources of the correlation between corporate governance and firm market value. There are several possible sources. Better governed firms could be more profitable; they could pay higher dividends for a given level of profits; or investors could value the same earnings (or dividends) more highly. We do not find evidence

that better governed firms are more profitable or pay higher dividends. We do find evidence that investors value the same earnings (or the same current dividends) more highly for better governed firms. In effect, better-governed firms have a lower cost of capital.

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. We use the survey responses to construct a corporate governance index (0~100). The index is composed of five equally weighted subindices, for shareholder rights (subindex *A*), board and committee structure (subindex *F*), board and committee procedure (subindex *G*), disclosure to investors (subindex *E*) , and ownership parity (subindex *P*). Ownership parity is a measure of the *lack* of a pyramidal or circular ownership structure The subindices are based on a total of 39 separate elements (38 survey questions plus ownership parity).[2]

Our results are statistically strong and economically important. Our *OLS* results imply that a moderate 10-point increase in the corporate governance index, predicts an increase in Tobin's *q* of 6.5% percent of the company's book asset value, a 13% increase in (market value of common stock)/(book value of common stock) (market/book ratio), and a 15% increase in market value of assets/sales (market/sales ratio). A worst-to-best improvement in corporate governance predicts a 42% increase in Tobin's *q*, a 96% increase in market/book ratio, and a 109% increase in market/sales ratio. Our *2SLS* and *3SLS* coefficient estimates are also statistically strong and larger than the *OLS* coefficients.

Turning from the overall index to the subindices, each of the five subindices separately predicts higher Tobin's *q*. Some of this effect arises because the subindices are positively correlated with each other. The subindices that remain significant in regressions that include the remainder of the index as a separate independent variable are subindex *F* (board and committee structure), subindex *E* (disclosure), and subindex *P* (ownership parity). Subindices *A* (shareholder rights) and *G* (board and committee procedure) remain positive, and contribute to the strength of the overall index, but are not significant by themselves.

In addition to addressing the general question of whether improved governance can pay off in higher share prices, our results are important for the debate within Korea on the value of corporate governance reforms. Prior to the 1997-1998 financial crisis, Korean corporate governance practices were weak by international standards. Self -dealing by controlling

[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 in separate research.

shareholders was common, firms had few outside directors, and audit committees were rare. Since the financial crisis, Korea has aggressively changed its governance rules. Accounting rules were strengthened. Firms were required to have a significant proportion of outside directors (25% for all public companies, 50% for banks and large companies). Audit committees were made mandatory for banks and large companies. *Chaebol*-affiliated firms must disclose consolidated financial statements; *chaebol* firms and (beginning in 2002) large firms must obtain board-of-directors approval for self-dealing transactions. The number of shares a shareholder must hold to file a derivative suit was sharply reduced. The list goes on. However, Korea's economy has been strong for several years. *Chaebol* managers oppose further 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 offers evidence that stronger governance can pay off in higher share prices. A caveat: These prices are the trading prices for minority, noncontrolling shares. Our study cannot show whether these higher prices reflect higher firm value, lower private benefits enjoyed by controlling shareholders (wealth transfer rather than wealth creation), or a combination of both effects.

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 construct our corporate governance index. Parts IV and V discuss results from ordinary least squares (*OLS*) and simultaneous equations (*2SLS* and *3SLS*) regressions, respectively. Part V also considers results for alternate measures of firm market value (market/book and market/sales). Part VI addresses some issues concerning the validity of asset size dummy as an instrument for CGI. Part VII considers whether better governed firms have higher market values because they are more profitable or because investors value the same profits more highly. Part VIII concludes.

II. Related Literature

A. The Effect of Country-Level Variation in Corporate Governance

There is substantial evidence that variation in country level rules predicts various measures of capital market strength, including larger securities markets relative to Gross Domestic Product (GDP), frequency of initial public offerings, less concentrated share ownership, and a higher value for minority shares (LLSV, 1997, 1998, 1999; La Porta, Lopez-de-Silanes and

[3] For discussion of the politics of Korea's corporate governance reforms, see Black, Metzger, O'Brien and Shin (2001). On Korea's recent reforms, see Kim (2002).

Shleifer, 2002). Consistent with this research, Nenova (2003) and Dyck and Zingales (2001) find evidence of systematic variation across countries in the value of control rights. Modigliani and Perotti (2000) find that a large premium on high-voting shares (suggesting weak protection of minority investors) and the level of corruption both predict a smaller stock market; Levine (1998, 1999) find that the quality of accounting disclosure predicts stock market size. Nenova (2001), in a case study of Brazil, finds evidence that change in the legal protection of minority shareholders can affect the value of control rights .

Lopez-de-Silanes, Shleifer and Vishny (2002) and Durnev and Kim (2003) find evidence that country-level variation in rules affects the market value of individual firms. Klapper and Love (2002) find, however, that this result is not robust in their study.

B. The Effect of Within-Country Variation in Corporate Governance

There is much more limited evidence that variation in corporate governance practices across firms but within a single country importantly affects firms' market value. In developed countries, even careful studies often fail to find statistically significant effects of corporate governance on firm market value or performance. When significant results are found, they are often economically small (Gompers, Ishii and Metrick, 2003, is a recent exception). However, developing countries may offer more fertile ground for study. Black (2001), argues that larger effects are likely to be found in developing countries, because these countries often have weaker rules and larger variations between firms in corporate governance practices; Durnev and Kim (2003) report supporting evidence.

Most of the empirical literature studying the link between corporate governance and firms' market value or performance concentrates on particular aspects of governance, such as board composition, shareholder activism, executive compensation, antitakeover provisions, or particular investor protections. To name a few, Millstein and MacAvoy (1998) and Bhagat and Black (2002) investigate the relationship between board characteristics and firm value and performance. Karpoff, Malatesta, and Walking (1996) and Carleton, Nelson, and Weisbach (1998) investigate the effects of shareholder activism. Bhagat, Carey, and Elson (1999) look at the relationship between outside director pay and firm performance. Sundaramurthy, Mahoney, and Mahoney (1997) link firm performance with antitakeover provisions. Gompers, Ishii and Metrick (2003) link firm market value performance to a corporate governance index based largely on takeover defenses.

In emerging markets, Black (2001) reports a powerful correlation between the market value and corporate governance of Russian firms. A worst-to-best improvement in governance predicts a 700-fold (70,000%) increase in the market value of a Russian firm as a

percentage of theoretical Western market value. However, his sample is small (21 firms), and he does not control for endogeneity. Durnev and Kim (2003) find that higher scores on both the *CLSA* corporate governance index and the *S&P* disclosure and transparency index predict higher firm value for a sample of 859 large firms in 27 countries, Klapper and Love (2002) find similar results for the *CLSA* index for a sample of 495 large firms in 25 countries. We discuss in the Introduction the principal differences between our paper and this related research.

A related body of research studies the effect of decisions by firms in emerging markets to cross-list their shares on major world exchanges. Cross-listing generally predicts an increase in share price. An important driver of this increase appears to be compliance by cross-listed companies with stricter disclosure and other corporate governance rules (e.g., Lang, Lins and Miller, 2003; Doidge, Karolyi and Stulz, 2002; Coffee, 2002).

III. Data and Construction of Corporate Governance Index

A. Data Sources

We construct a corporate governance index based primarily on a 2001 survey 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 of the 560 surveyed companies responded. We exclude 5 banks that were wholly owned by the government and one firm that was acquired shortly after the survey was completed, leaving a sample of 534 firms.[4]

We take balance sheet and income statement data from the *TS2000* database, maintained by the Korea Listed Companies Association. We take stock market and share ownership data from a KSE database. Share ownership data is available for 525 companies. We take the list of companies affiliated with the top-30 *chaebol* from press releases by the Korean Fair Trade Commission. *Tables 3B* and *3C* show summary statistics and a correlation matrix for selected variables used in this paper.

B. Construction of the Corporate Governance Index

We extract 123 variables from the survey questions. We exclude questions that are subjective (they 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

[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. Consistent with our agreement with the KSE, we do not discuss individual companies in this paper.

variation between firms; overlap highly with another variable; or had very few responses.[5] This leaves us with a usable set of 38 elements for our corporate governance index.

We classify these variables into four subindices: (i) shareholder rights (subindex *A*); (ii) board and committee structure (subindex *F*); (iii) board and committee procedure (subindex *G*); (iv) disclosure to investors (subindex *E*). We add a fifth 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 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 - direct ownership by the largest shareholder. Joh (2003) uses a similar corporate governance measure).[6] *Table 1* describes the elements of each subindex and provides summary statistics for these variables.

We combine the subindices into an overall corporate governance index as follows. We standardize each subindex to have a value between 0 and 20. We then define an overall corporate governance index (*CGI*) as the simple sum of the subindices:

$$CGI = A + F + G + E + P \quad \text{----------} \quad (1)$$

Thus, the overall corporate governance index has a value between 0 and 100, with better-governed firms having higher scores.

Each element in each subindex is constructed to have a value between 0 and 1. Most are 0-1 dummy variables that indicate whether a firm has a particular governance element. The exception is ownership parity, which is a continuous 0-1 variable. To obtain the multielement subindices *A*, *F*, *G*, and *E*, we sum over the elements of each subindex and divide by the number of 'non-missing' elements.[7] We multiply this ratio by 20 so that the subindex

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

[6] We use the definition of *largest shareholder* in the *Securities and Exchange Act*. According to the *Act*, the *largest shareholder* is the shareholder that, together with its related parties, holds the largest number of shares. Related parties include relatives, affiliated firms, and company directors. Using this definition, the largest shareholder can be either an individual or a firm. One can imagine alternate ownership measures that more directly capture the direct economic stake of the controlling individual or family, but these are not feasible to implement given the combination of limited data and often-complex cross-holdings within *chaebol* groups.

[7] Since we compute a ratio based only on nonmissing values, we do not have to worry directly about missing values. However, because mean scores differ across elements, a firm could score higher or lower under our approach than if we first normalized the responses to each element and then used the normalized responses to compute the subindices. Missing values are significant only for subindex *G*, which includes several elements that apply only to firms with audit committees (93 firms in our sample).

takes a value between 0 and 20. To obtain Subindex *P*, we multiply ownership parity (as a fraction between 0 and 1) by 20.

Table 3D provides a correlation table for *CGI* and each subindex. All correlations are positive and significant. *Table 3E* provides a full correlation table for *CGI*, each subindex, each governance element, and our asset size dummy variable. Most of the correlation coefficients are positive and many are significant. There are a few scattered negative coefficients, but almost all are insignificant.

Figure 1 shows a histogram of the corporate governance index, *CGI*. A normal distribution curve is superimposed. The distribution of corporate governance index is skewed to the right (long tail to the right; skewness coefficient = 1.5338). *Table 3A* provides summary statistics for the overall *CGI* index and each subindex. The index mean (median) is 33.44 (30.80); the minimum is 14.20, and the maximum is 85.70.

IV. Corporate Governance and Firm Value: OLS Results

This part presents our *OLS* results. In all regressions, we identify outliers and drop them from the sample. We treat observations as outliers if a studentized residual obtained by regressing Tobin's *q* on *CGI* and intercept (without other control variables) is greater than 1.96 or smaller than –1.96.[8] This method identifies 29 outliers, which reduces our sample size to 496. Data availability for the control variables described in Section *B* then reduces the number of firms in our principal full-sample regressions to 487.

A. Whole Sample Scatter Plots

Figures 2, 3, and 4 show scatter plots for ordinary least squares regressions of our corporate governance index, *CGI*, against three measures of firm market value: Tobin's *q* (market value of assets/book value of assets), market/book (market value of common stock/book value of common stock) and market/sales (market value of assets/sales). In each figure, there is a visually obvious and statistically significant correlation. We summarize these results below.

market value variable	correlation coefficient	slope coefficient (in Figures 2-4)	*t*-statistic
Tobin's *q*	0.26	0.0065	6.06
market/book ratio	0.12	0.0170	5.57

[8] A studentized residual of observation *i* is a residual obtained from a fitted regression line estimated without observation *i* divided by the standard deviation of residuals computed without observation *i*. In the robustness checks in Part *VI*, we follow the same procedure to identify and exclude outliers for other firm value variables (market/book and market/sales).

market/sales ratio	0.42	0.0634	10.52

We confirm below that these correlations remain significant when we add a battery of control variables and perform various robustness checks.

B. Whole Sample OLS Results and Control Variables

A strength of our in-depth study of corporate governance in Korea, compared to a multi-country study, is strong data availability, which lets us use a much more complete set of control variables . This reduces the likelihood that omission of relevant variables will produce a spurious correlation between corporate governance index and firm market value. In *Table 4A*, regression (1), we regress our principal firm value variable, Tobin's *q*, against corporate governance index, *CGI*, plus a minimal set of control variables. We then progressively add additional control variables , showing selected results in regressions (2)-(4), and results with a full set of control variables in regression (5).

CGI is highly significant in each of these regressions.[9] Adding control variables has only a small effect on the coefficient on *CGI*. The *t*-statistic remains strong in all regressions. Regression (5) implies that an increase in corporate governance index by 10 points results in an increase of market capitalization by $10 \times 0.0065 = 0.065$ (6.5%) of the company's book asset value. A worst-to-best change in corporate governance, from *CGI* = 13.41 to 86.32 predicts a 42% increase in Tobin's *q*. These are economically important differences.

Table 2 defines and provides basic information for each control variable; *Table 3B* provides summary statistics. The rationale for each control variable and *OLS* regression results (from *Table 4A*, regression (5)) are described below. We also indicate when results for control variables are different with 4-digit industry controls or in the *2SLS* and *3SLS* regressions discussed in Part V. In the *OLS* regressions described later in this paper, we use the same control variables (except as expressly stated) but to simplify the tables, we often omit coefficients and *t*-statistics for the insignificant variables.

- We follow the common practice of using ln(assets) to control for firm size (see, e.g., Shin and Stulz, 2000, Durnev and Kim, 2003). Consistent with prior research (e.g., Lang and Stulz, 1994), the coefficient on ln(assets) is negative and highly significant. We consider whether ln(assets) is a sensible functional form for the dependence of

[9] In this paper, we refer to results as marginally significant if they are different from zero at the 90% confidence level, significant if they are different from zero at the 5% level, and highly significant if they are different from zero at a 99% or higher level, in each case using a two-tail test.

Tobin's *q* on firm size in Part *VI.C* because of its importance for our instrumental variable.[10]

- We control for firm age using ln(years listed) as a control variable.[11] We expect a negative coefficient because more recently listed firms are likely to be faster-growing, and perhaps more intangible asset-intensive. This variable is negative and significant.
- We include a control variable for debt/equity ratio (when we use market/book as a dependent variable, we use debt/assets as a control variable). This control is positive and significant.
- We control for industry with dummy variables based on 2-digit Korea Standard Industrial Classification) (KSIC) codes to capture industry effects. We find similar full-sample results (similar coefficient, modestly higher *t*-statistic) with 4-digit industries.[12]
- Tobin's *q* is positively related to a firm's growth prospects and to intangible assets. We control for these effects with control variables for sales growth over the last 5 years, R&D expense/sales, and advertising expense/sales. Sales growth is not significant. R&D/sales and advertising/sales positive and significant, though they are less so if we

[10] Our results are similar if we use ln(sales) instead of ln(assets) as a control for firm size. This is not surprising due to the high correlation ($r = 0.91$) between the two measures.

[11] Compare Shin and Stulz (2000), who use a ln(firm age) control. We expect similar results for ln(years listed) and ln(firm age); we use ln(years listed) because of easier data availability.

[12] R^2 was substantially higher with 4-digit controls, at around .36 (versus .26 in *Table 4A*, regression (5)). Coefficients and *t*-statistics for *CG1* were sometimes weaker with 4-digit industry controls for regressions using smaller subsamples (under 100 firms), perhaps due to loss of degrees of freedom. Summary information on each 2-digit industry with at least one firm in our sample follows.

Code	Industry	No. of firms	Mean value of CG1	Mean value of Tobin's *q*
4	manufacturing	376	36.5	0.83
11	financial institutions and insurance	65	47.3	0.93
7	wholesale/retail trade	32	39.2	0.83
6	construction	26	36.8	0.82
9	transportation	13	39.1	0.82
5	electric, gas, water supply	10	39.4	0.77
13	services	7	45.2	1.16
2	fishing	4	27.4	0.51
10	post and telecommunications	3	63.0	1.48
3	mining	2	32.9	0.86
8	hotels and restaurants	1	37.4	0.84
17	recreation, culture, sports	1	25.1	1.84
Whole sample	--	**526**	**38.2**	**0.85**

use 4-digit industry controls, and *R&D*/sales weakens in *2SLS* and becomes insignificant in *3SLS* (see *Table 8*).

- Korean policy has long favored export industries, which could affect the profitability of export-oriented firms. We control for this possibility with a variable for exports/sales. This variable is insignificant and of varying sign (depending on which other control variables we use).
- A firm's market share within its industry, as well as overall industry concentration, may affect profitability and therefore Tobin's *q*. We therefore include control variables for *market share* (the firm's share of sales in its 4-digit industry) and *market concentration* (the Herfindahl Hirschman index for the firm's 4-digit industry). Market share is (surprisingly) insignificant. Market concentration is positive and marginally significant, but loses significance in *2SLS* and *3SLS* (see *Table 8*).
- The market value of common stock may be higher for firms with more easily traded shares. We control for ease of trading with a measure of share turnover, defined as (total shares traded during 2000)/(shares held by public shareholders). Share turnover is positive and significant.
- Foreign investors may be willing to pay higher prices than domestic investors, because they are more fully diversified. Foreign share ownership, as a percentage of all shares outstanding, is positive and significant.
- Firms that belong to a major *chaebol* group may be different than other firms in various ways, including political connections, access to financing (Shin & Park, 1999), or degree of diversification (Ferris, Kim & Kitsabunnarat, 2003). A dummy variable for membership in the top 30 *chaebol* (*chaebol30*) is positive and significant, but becomes insignificant in *OLS* regressions with 4-digit industries, and also in *2SLS* and *3SLS*, and also in These moderately positive results contrast with Joh (2003), who finds that *chaebol*-firms were less profitable than other firms prior to the 1997-1998 financial crisis; and Cho and Kang (2002), who find lower market/book ratio for *chaebol* firms in the post-crisis period from 1998-2000.[13] Possible explanations for the different results include the later time period that we study and our extensive corporate governance and other control variables.

[13] Ferris, Kim and Kitsabunnarat (2003) also find lower "excess value" (closely related to Tobin's *q)* for *chaebol*. firms. However, their results are suspect because *chaebol* firms are much larger than non-*chaebol* firms, larger Korean firms have lower Tobin's *q* (see this paper and Cho and Kang, 2002), and they do not control for firm size.

- We include share ownership by the largest shareholder. Joh (2003) and Cho and Kang (2002) find that high insider share ownership predicts higher value for Korean firms. In contrast, we find a coefficient on sole ownership is close to zero.
- We control for the existence of level 1, or level 2 or 3, *ADRs*. Firms with level 2 and 3 *ADRs* must comply with many of the disclosure rules of the stock exchange and country where they are cross-listed. In contrast, firms with level 1 *ADRs* are generally not subject to additional disclosure requirements. Other studies report that firms with level 2 or 3 *ADRs*, have higher Tobin's *q* (Doidge, Karolyi and Stulz, 2002; Coffee, 2002). Only 10 firms in our sample have level 1 *ADRs*, and only 6 firms have level 2 or 3 *ADRs*. These small numbers make it unlikely that the coefficients on these variables will be significant. The coefficients on both *ADR* dummy variables are negative and insignificant.
- We use a dummy variable to control for inclusion in the Morgan Stanley Capital International (*MSCI*) Index. Inclusion in this index may proxy for foreign investor interest. The *MSCI* dummy variable is positive and significant.
- We include a bank dummy variable because banks may be valued differently than other firms. There are only 12 banks in our sample. The coefficient on the bank dummy is negative and insignificant.

Correlation between CGI and Control Variables. A number of the control variables are likely to predict better corporate governance. These include the *ADR* dummies (because firms with ADRs are likely to, and for level 2 or 3 ADRs, are required to, comply with some or all of the disclosure and other governance rules of the exchange where they are listed, and because firms with *ADR*s are more likely to be large, which subjects them to special governance rules); foreign ownership and the *MSCI* dummy (because firms in the *MSCI* index are more likely to be large, and because foreign investors may be more likely to invest in firms that have better governance); the bank dummy (because in Korea, banks and large firms are subject to stronger governance rules than other firms); and the *chaebol30* dummy (because chaebol firms are subject to some special governance rules, and are also more likely to be large).

The simple correlation coefficients between CGI and these control variables are all significant and positive. They range from 0.21 (for ADR (Level 1) Dummy) to 0.46 (for Bank Dummy). In theory, these partial correlations should not bias the level of the OLS coefficient on CGI, but should bias the associated *t*-statistic downward.

C. Subindices and Reduced Indices

Table 4B contains our *OLS* results for subindices. In *Table 4B*, column (1), we regress Tobin's *q* on corporate governance index *CGI* (reproducing our basic *OLS* regression from Table *4A*, regression (5)), and the five subindices that comprise *CGI*: *A* (shareholder rights), *F* (board and committee structure), *C* (board and committee procedure), *E* (disclosure to investors), and *P* (ownership parity). Each regression uses same sample and control variables as our basic *OLS* regression. Each subindex ranges from 0 to 20.

In column (1), each individual subindex is statistically significant at the 1% level or better. The strongest results are for subindices *P* (ownership parity), *E* (disclosure to investors), and F (board and committee structure), in that order.[14] The coefficient of 0.0081 on subindex *F*, for example, implies that an improvement in corporate governance practice concerning board and committee structure by 10 points predicts an 8.1% increase in Tobin's *q*.

Some of the predictive power of each subindex in column (1) likely reflects its correlation with the other (omitted) subindices. The correlation coefficients for subindices are uniformly positive and statistically significant (see *Table 3D*). The strongest pairwise correlation is $r = 0.51$ between subindices *F* (board and committee structure) and *G* (board and committee procedure) The correlations between subindices range from 0.08 to 0.13 for Subindex *P*, and .from 0.26 to 0.51 for the other between-subindex correlations.

To assess whether the a subindex's predictive value reflects its correlation with the other subindices, we rerun the regressions in *Table 4B*, column (1), adding, as a control variable for each subindex, a Reduced Index that equals the sum of the other subindices. Thus, for Subindex *A*, Reduced Index = *CGI* - Subindex *A*; and similarly for other subindices. Each reduced index thus runs from 0 ~ 80. Our results are shown in *Table 4B*, columns (2A) and (2B). The coefficients and *t*-statistics decline for all subindices, as expected. Subindices *F* (board and committee structure), *E* (disclosure) and *P* (ownership parity) remain significant at the 1% level. Subindices *A* (shareholder rights) and *G* (board and committee procedure) remain positive, but their coefficients drop and become insignificant.

Since each subindex is individually significant in *Table 4B*, column (1), almost any weighting scheme will produce an overall index that is statistically significant in explaining Tobin's *q*. Moreover, the coefficients in the subindices are similar in magnitude, ranging from a low of .0064 (for subindices *A* (shareholder rights) and *F* (board and committee structure)), to

[14] Compare Joh (2003), who reports a negative and often (though not always) significant relationship between ownership disparity and firm profitability.

a high of 0.0144 (for subindex *P*, ownership parity). Thus, a different weighting of the subindices is unlikely to greatly affect the coefficient or significance of the overall index.

The coefficients on the reduced indices in *Table 4B*, column (2B) confirm this intuition . In each case, the Reduced Index (*CGI* - relevant subindex) is statistically strong, and coefficients vary only from 0.0053 to 0.0071. We also observe in *Table 4B*, column (2B), that the statistical significance of each Reduced Index is lower than for the complete index. This is consistent with the predictive effect of corporate governance index for firm value coming from the combined effect of all subindices, including the individually less significant indices (subindices *A* and *G*).

D. Individual Corporate Governance Elements

Table 5 contains our *OLS* results for the individual elements of our corporate governance index. *Table 5*, column (1) shows results when Tobin's *q* is regressed on each individual element of the corporate governance index. Each regression includes the same sample firms and control variables as our basic OLS regression (*Table 4A*, regression (5)). Most (31/39) of the coefficients on individual corporate governance elements are positive, and all negative coefficients are insignificant. At the same time, only 10 of the 39 individual elements are significant. This, like the results for our subindices, implies that the elements of the corporate governance index have more predictive power when aggregated into an index than they have individually.

As was true for subindices in *Table 4B*, the regressions in column (1) may overstate the power of an individual index element, when that element correlates with other (omitted) corporate governance variables. In *Table 5*, column (2), we shoe the coefficients on each element if we add a control variable for the Reduced Index containing the other subindices, and a separate control variable for the firm's score on a "reduced subindex" (the firm's score for a reduced subindex consisting of the other elements of the subindex to which the element belongs). Thus, for element *A1*, we include controls for (i) Reduced Index = *CGI* - Subindex *A*; and (ii) Reduced Subindex = firm's score on a subindex consisting of elements *A2*-*A5*).

With these controls, only five individual elements remain significant, but five more are marginally significant. Several of the significant or marginally significant elements relate to plausibly important governance elements. This includes element *C1* (firm has at least 50% outside directors); element *D1* (firm has an audit committee); several elements that relate to the apparent seriousness of the audit committee (*D3* (bylaws governing audit committee or internal auditor exist), *D10* (audit committee meets with external auditor to review financial statements), and *D11* (audit committee meets at least twice per year); and element *P* (ownership parity).

The other significant or marginally significant elements appear to address less central elements of corporate governance. These elements are *A4* (firm discloses director candidates to shareholders in advance of shareholder meeting), and the three disclosure elements (E1 (firm conducted investor relations activity in 2000), *E2* (firm website includes resumes of board members), and *E3* (English disclosure exists). A possible explanation is that all of these elements involve disclosure (even though we include element *A4* in the shareholder rights subindex, rather than the disclosure subindex). They likely proxy for other (omitted) measures of disclosure quality. However, the *KSE* survey asked very limited questions about disclosure, so we cannot verify this suspicion.

For element *A5* (board approval required for related party transactions), there is some doubt about whether the survey responses are accurate and match investor beliefs. At the time of the *KSE* survey, this approval was required by law for firms within the top-30 *chaebol*, if a transaction exceeded 10 billion won or 10% of the firm's equity capital. Nonetheless, whether because the respondent was unaware of this legal requirement or because the requirement affects only large transactions, only 58 of 111 *chaebol* firms responded that board approval was required for related party transactions. Yet, since the same legal rule applied to all firms, investors likely valued firms that answered yes to this question similarly to than firms that answered no. To complicate matters further, at the date when we measure firm market value (June 30, 2001), a similar rule had been adopted for large firms, but was not yet effective. The share prices of large firms were likely to anticipate implementation of this rule.

To assess how inaccuracy of responses (for *chaebol* firms) and investor anticipation (for large firms) could affect our results, we rerun our *OLS* regressions defining variable *A5* to equal 1 for all *chaebol* firms and large firms. The coefficients on *CGI*, subindex *A*, and element *A5* become stronger. [details on coefficients and *t*-statistics to come]

E. Board Independence

The single strongest coefficient for an individual element is for element *C1* (at least 50% outside directors), which has a coefficient of 0.1135 and a *t*-statistic of 3.63 with controls for the rest of the corporate governance index. The coefficient implies that a firm with 50% or more outside directors has 11% higher Tobin's *q*. This contrasts sharply with the weak results found in the United States and other developed countries, where no one has found a reliable correlation between board composition and overall firm value or performance, despite many efforts. See Bhagat and Black (2002) and the surveys by Bhagat and Black (1999) and Weisbach and Hermalin (2002).

It is possible in theory that firms endogenously choose their board composition in ways that maximize share value (Weisbach and Hermalin, 2002, and Miwa and Ramseyer, 2003). If so, the positive coefficient on element *C1* need not imply that firms that don't have 50% outside directors could increase their market value by adopting such boards . However, this explanation is unlikely for Korea because whether a firm has 50% outside directors is determined almost entirely by the legal requirement of 50% outside directors for banks and large firms (see Table *7B*).

This suggests that board independence is more important in a country where other constraints on insiders are weak. Independent directors may play a larger role in these countries in, for example, controlling self-dealing by insiders. An interesting question for future research is whether the level of self-dealing (investments in or other transactions with affiliated firms, transactions between firms and their controlling shareholders, issuance of shares or convertible bonds to insiders) is in fact lower for firms with at least 50% outside directors.

We find more limited evidence that increasing the proportion of outside directors beyond 50% has an additional payoff. In *Table 5*, column (1), element *C2* (more than 50% outside directors) is significant with a .0781 coefficient. The coefficient drops to .0516 and becomes insignificant when we control for other the rest of the corporate governance index (*Table 5*, column (2A)). The estimated coefficient (a bit over a 5% effect on Tobin's *q*) is economically nontrivial. However, significance is suppressed by the high correlation ($r = 0.55$) between element *C2* (more than 50% outside directors) and element *C1* (at least 50% outside directors)

F. Subsample Results

The governance practices of Korean firms are partly determined by legal requirements. Some rules apply to all firms, but important rules apply only to large firms (assets > 2 trillion won) banks, or firms within the top 30 *chaebol*. Under the *Securities and Exchange Act* and the *Banking Act*, large firms, and banks regardless of size, must have at least three outside directors and at least 50% outside directors. Small firms (assets < 2 trillion won) need only have 25% outside directors. Large firms and banks must also have an audit committee with at least 2/3 outside members and an outside chairman, and large firms must have an outside director nomination committee. The *Monopoly Regulation and Fair Trade Act* requires board approval for related-party transactions by firms within the top-30 *chaebol* if transaction size is greater than 10% of equity capital or 10 billion won.

The connection between firm size, membership in the banking industry, and membership in the top 30 *chaebol*, on the one hand, and corporate governance, on the other hand, creates

the possibility that the correlation between corporate governance and firm value may be at least partly spurious. For instance, if firm size (or bank membership or top 30 *chaebol* membership) is correlated both with firm value (Tobin's *q*) and corporate governance index (*CGI*), one would expect to find a positive correlation between *CGI* and Tobin's *q* even when there is no causal link between the two. In our basic *OLS* regression (*Table 4A*, regression (5)), we control for this possibility for banks and *chaebol* firms with dummy variables for membership in the top-30 *chaebol* and membership in the banking industry.

In *Table 6*, we further address this possibility and also test the robustness of our results within subsamples by rerunning our basic *OLS* regression for the following subsamples: non-banks (there are only 12 banks in our sample, so we lack sufficient degrees of freedom to run a similar regression for banks); firms within the top 30 *chaebol* versus non-*chaebol* firms; small versus large firms; and non-manufacturing versus manufacturing firms. The corporate governance index, *CGI*, is an important factor explaining the variation of firm value in all seven subsamples. The coefficient on *CGI* is similar in all subsamples, varying from .0042 for nonmanufacturing firms to .0070 for *chaebol* firms. The *t*-statistic is lowest for large firms (t = 2.22), but this largely reflects the small sample size (65 firms). The coefficients on *CGI* are *larger* for subsamples of firms that are already subject to stricter governance rules (large firms and *chaebol* firms), although the differences in the *CGI* coefficient between subsamples are not significant.

G. Results for Board Size

Some studies find a negative correlation between board size and firm value (Yermack, 1996; Eisenberg, Sundgren and Wells, 1998). But other studies find either a positive correlation (Ferris, Jagannathan and Pritchard, 2003; Mak and Li, 2001) or no consistent effect (Bhagat and Black, 2002). Given this mixed evidence, we investigate the effect of board size on firm value for our sample but do not include board size in our corporate governance index.

We consider two specifications of a board size variable: (i) simple board size (number of directors); and (ii) a board size dummy variable, defined to equal 0 if the board has 8 or fewer directors, 0.5 for boards with 9-12 members, and 1 otherwise. The simple board size variable is negative and insignificant (coefficient = -.0016, t = -0.54); while the board size dummy variable is *positive* and insignificant (coefficient = .0087, t = 0.25), when included as a separate control variable in a regression otherwise similar to our basic *OLS* regression (*Table 4A*, regression (5)). The coefficient and *t*-statistic on *CGI* are only mildly affected. We also experiment with including the board size dummy variable in subindex *G;* the coefficient and *t*-statistic on *CGI* are almost unchanged.

One possible explanation for our weak results and the differing results in other studies, may be that board size correlates with other elements of corporate governance, which are imperfectly controlled for in other studies. To illustrate this, we include board size in the correlation table in *Table 3E*. The correlation coefficients with *CGI* (r = 0.36) and with subindices *A, F, G*, and *E (r* from 0.23 to 0.34*)*, are sizeable and significant.

H. Comparison with CLSA and SEP Indices

The *CLSA* corporate governance index, relied on by Durnev and Kim (2003) and Klapper and Love (2002), includes 19 firms that are also in our sample. The *S&P* disclosure index relied on by Durnev and Kim includes 33 overlapping firms. This overlap lets us examine the correlation between our index and these other indices. *Table 3B* provides simple statistics on these indices. *T*he correlation between our index and these alternate indices are insignificant and (surprisingly) low (*Table 3D*). The correlation between *CGI* and the *CLSA* index is 0.15 and the correlation between *CGI* and the *S&P* Index is negative, at -0.06. The correlation between the S&P disclosure index and our disclosure subindex (subindex *E*) is only 0.02.

To test the power of the *CLSA* and *S&P* indices, we rerun our *OLS* regressions substituting these indices for *CGI.* Because of the small sample size (19 firms for *CLSA*; 33 firms for *S&P*), we try regressions both with all control variables and with a simpler set of control variables to preserve more degrees of freedom. The *CLSA* Index is positive but insignificant is specifications that omit industry controls, and becomes slightly negative and insignificant when we add 2-digit industry controls.

The *S&P* Index is stronger. The coefficient for a simple regression of Tobin's *q* on *S&P* index plus constant term is .077 (r = 0.35; t = 2.72), compared to .0065 (r = 0.26; t = 6.06) for the *CGI* index. The coefficient on the *S&P* Index declines to .054 and becomes only marginally significant when we add a full set of control variables *other than industry controls*, and declines to .038 and becomes insignificant (t = 0.73) when we add 2-digit industry controls.

V. Corporate Governance and Firm Value: Simultaneous Equations Results

A. Endogeneity and Signaling: Preliminary Comments

Two recurring issues in studies of firm-level corporate governance are the potential for our results to be explained by signaling (firms signal high quality by adopting good governance rules, but it is the signal, not the governance rules, that affects firm value); and endogeneity (firms with high market value choose good governance rules, so that causation runs from our dependent variable (firm value) to corporate governance, rather than vice-versa).

Firms with high market values could choose better governance structures because (i) the firm's insiders believe that these structures will further raise the firm's market value; (ii) firms with high Tobin's *q* (or other measure of firm market value) benefit from improved governance structures more than other firms; or (iii) the firm's insiders believe that doing so will signal management quality even if the signal (the governance structure) does not in fact affect firm value. In the first case (partial reverse causation), there will be a causal connection between corporate governance and firm value, but the *OLS* coefficient will overstate the connection. In the second case (different firms optimally need different governance structures), there will be a causal connection, but the *OLS* coefficient will overstate the connection and the causal connection for some firms will not imply that other firms can improve their market values by improving their governance. In the third case (signaling), there will be no causal connection at all.

There is evidence of endogeneity in other corporate governance studies. Weisbach and Hermalin (2001) discuss endogeneity issues in board composition studies. Durnev and Kim (2003) develop a model in which a firm's choice of corporate governance is endogenously related to its investment opportunities, desire for external financing, and ownership by the controlling shareholder. Bhagat and Black (2002) report evidence of reverse causation. They find evidence in *OLS* regressions of a negative correlation between board independence and measures of firm market value and performance. However, they also find evidence that firms that perform poorly increase the independence of their boards of directors. In 3SLS regressions that allow performance to predict board composition, the negative correlation between board independence and firm performance weakens and is not reliably significant.

One way to assess the robustness of our results given possible endogeneity is to see if they are present for subsamples. Different firms are likely to make different governance choices. Thus, if the correlation between corporate governance and Tobin's *q* is robust across subsamples, this offers some evidence in favor of a causal connection. We have already confirmed robustness for a number of plausible subsamples in *Table 6*. Similarly, if our results are robust across different definitions of the corporate governance index, this offers some evidence favoring a causal connection. We have already confirmed robustness for reduced indices that omit one subindex (see *Table 4B*, column (2B)). Still, these results are only suggestive.

Standard econometric procedures for addressing endogeneity require identifying an instrument for the hopefully independent, but potentially endogenous variable of interest (here, *CGI*). This is not trivial. The instrument should ideally be exogenous and not influenced by the dependent variable of interest (here firm market value, measured by Tobin's *q*

or, in our robustness checks, market/book ratio or market/sales ratio). It should be correlated (preferably strongly to preserve the power of the instrumental variables regression), with the independent variable of interest (*CGI*) but otherwise uncorrelated with the dependent variable of interest (firm market value). That is, the instrument should predict the dependent variable *indirectly*, through its effect on the independent variable, but not directly. For a recent survey of techniques for addressing endogeneity, see Angrist and Krueger (2001).

None of the related studies of corporate governance indices discussed in Part II.B employ an instrument for firm-level variation in corporate governance (Durnev and Kim (2003) use an instrument adapted from *LLSV* for *country-level* variation). In contrast, unique features of Korea's corporate governance rules allow us to construct a plausible instrument for at least part of our corporate governance index -- an asset size dummy variable (1 for large firms (assets > 2 trillion won) and 0 otherwise). In the remainder of this Part V, we explain why this instrument is plausible (section B), assess its validity (section C), and report the results of two-stage and three-stage least-squares regressions for our entire sample (section D) and selected subsamples (section E). We then return in Part VI to a more detailed assessment of the uses and limits of asset size dummy as an instrument for *CGI*.

B. Asset Size Dummy as Instrument for CGI

As discussed in Part IV.F, several important Korean governance rules apply only to large firms (assets > 2 trillion won). If the portion of the corporate governance index that is due to these rules predicts higher Tobin's *q* (or other measures of firm value), this cannot be due to signaling or endogeneity. We therefore use an asset size dummy variable (equal to 1 for large firms; 0 otherwise) as the exogenous instrumental variable that is correlated with corporate governance, but hopefully does not directly predict Tobin's *q* (or other measures of firm value).[15] We use ln(assets) as a separate control for firm size that hopefully captures most of the way in which firm size directly influences Tobin's *q*. We use both two-stage (*2SLS*) and three-stage (*3SLS*) least squares regressions to estimate the coefficients.

We do not expect the asset size dummy to be a valid instrument for banks (which must mostly follow the same rules that apply to large firms) or for subindices *A*, *E*, or *P* (which do not include rules for which the 2 trillion won size cutoff is relevant). Thus, in the *2SLS* and

[15] Other corporate governance rules apply only to banks or only to firms that are part of one of the 30 largest *chaebol* groups. However, dummy variables for bank or membership in the top 30 *chaebol* are not satisfactory instruments for corporate governance because they are likely to correlate with Tobin's *q* for reasons other than the quality of governance. This is obvious for banks, since industry is likely to affect Tobin's *q*. Firms within a *chaebol* group may be different than other firms in various ways (see the discussion of our *chaebol30* control variable in Part IV.B).

3SLS regressions below, we exclude 12 banks from the sample, leaving a non-bank subsample of 477 firms. When we examine subindices, we study only subindices *F* and *G*. Subindex *F* (board and committee structure) is directly affected by the relevant legal rules. Subindex *G* (board and committee procedure) is indirectly affected by these rules, since companies that must have 50% outside directors and audit and nominating committee are likely to also adopt improved board and committee procedures (the simple correlation between subindices *F* and *G* is $r = 0.54$).

We believe that the asset size dummy is an appropriate instrument for the portions of the corporate governance index that are directly related to these legal rules, and a plausible instrument for the index as a whole, for following reasons. First, the effect of the governance-related legal requirements that apply to large firms can be safely said to be exogenous.[16]

Second, once we control for the direct effect of asset size on Tobin's *q* through a control variable for ln(assets), it is at least plausible that the asset size dummy predicts firm value primarily indirectly, through its effect on corporate governance. Notice that in our basic *OLS* regression (*Table 4A*, regression (5)), ln(assets) has a strong *negative* correlation with Tobin's *q*. This suggests that the *positive* correlation between asset size dummy and Tobin's *q*, which underlies our *2SLS* and *3SLS* results, reflects the effect of asset size dummy on corporate governance, which in turn affects Tobin's *q*, rather than a direct effect of asset size dummy on Tobin's *q*. We return in Part VI to further analysis of the related questions of (i) whether ln(assets) is an appropriate functional form for the direct effect of firm size on Tobin's *q*; and (ii) the possible remaining direct effect of asset size dummy on Tobin's *q*.

Third, an asset size dummy at 2 trillion won has predictive power for *CGI* and subindices *F* and *G* precisely where it should based on the relevant legal rules. Asset size dummies at other sizes lack similar power. As a crude check, we observe from *Table 3E* that the correlation of asset size dummy and Subindex *F* is very high at 0.85, and the correlation with Subindex *G* is 0.48. The correlations with other subindices are 0.35 for Subindex *E* (disclosure), 0.32 for Subindex *A* (shareholder rights), and 0.05 for Subindex *P* (ownership parity).

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[16] Some firms with assets close to 2 trillion won might manage their assets to avoid being subject to these legal requirements. We are not aware of anecdotes suggesting such behavior and the rules that apply only to large firms are mild enough so that this response is unlikely. Only a few firms have assets close enough to 2 trillion won to make size manipulation plausible. Three firms in our sample have assets between 1.9 and 2 trillion won, compared to 2 firms with assets between 2.0 and 2.1 trillion won. This difference is obviously not significant. For broader ranges of asset size (1.8-2.0 vs. 2.0-2.2 and 1.5-2.0 vs. 2.0-2.5 trillion won), there is again no significant difference between the number of firms in the lower size range and the number in the upper size range. Thus, any manipulation of asset size appears to be minor.

Table 7 offers a more careful check on whether asset size predicts corporate governance where it should (at 2 trillion won, but not elsewhere; and primarily for subindices *F* and *G*). In *Table 7A*, we regress the overall corporate governance index (*CGI*) and each subindex (*A, F, G, E,* and *P*) on our usual control variables, including ln(assets), plus a family of asset size dummy variables, defined as follows:

Asset size dummy 1 = 1 if ln(assets) > 3.6 (assets > 37 billion won); 0 otherwise

Asset size dummy 2 = 1 if ln(assets) > 4.6 (assets > 99 billion won); 0 otherwise

Asset size dummy 3 = 1 if ln(assets) > 5.6 (assets > 270 billion won); 0 otherwise

Asset size dummy 4 = 1 if ln(assets) > 6.6 (assets > 735 billion won); 0 otherwise

Asset size dummy 5 = 1 if ln(assets) > 7.6 (assets > 2 trillion won); 0 otherwise (this is our instrumental variable)

Asset size dummy 6 = 1 if ln(assets) > 8.6 (assets > 5.4 trillion won); 0 otherwise

Asset size dummy 7 = 1 if ln(assets) > 9.6 (assets > 14.8 trillion won); 0 otherwise

If the legal rules that apply to large firms cause these firms to have higher corporate governance scores, we should observe a significant coefficient on *asset size dummy 5* for *CGI*, and subindices *F* and *G*. Other asset size dummies should have no consistent effect on *CGI* or any of the subindices, and asset size dummy 5 should have no significant effect on subindices *A, E,* and *P*.

This is exactly what we observe. For asset size dummy 5 the coefficients are large, positive and highly significant for the regressions with *CGI* and Subindex *F* as dependent variables, and smaller but still positive and significant for the regression with Subindex *G* as a dependent variable. For the other asset size dummy variables, the coefficients are insignificant in all cases and more often negative than positive. Thus, *Table 7A* offers strong evidence that our asset size dummy is an exogenous predictor of corporate governance, and is not simply capturing a general size effect.

We further confirm that the asset size dummy predicts a change in firm behavior in *Table 7B*. Here, we focus on the specific rules that apply to firms with assets greater than 2 trillion won: governance elements *C1* (firm has at least 50% outside directors), C4 (firm has an outside director nomination committee), and *D1* (firm has an audit committee). The differences are dramatic. Ninety-seven percent of firms above this threshold have at least 50% outside directors, compared to 4% of firms below the threshold. Similarly, 91% of firms above the threshold have an audit committee, compared to 7% of firms below the threshold. [discussion of nomination committee to come][17]

[17] The principal reason for noncompliance with the audit committee and outside director rules by firms above the 2 trillion won threshold are (i) the firm recently crossed the threshold and has not yet adjusted the

For our three stage least-squares regressions, we also need an instrumental variable for Tobin's *q*. We choose ln(years listed) as a variable that is has a moderate simple correlation with Tobin's *q* (*r* = -0.14) and continues to be correlated with Tobin's *q* in multivariate regressions (see *Table 4A*, regression (5)). Once again, to have a valid instrument, the instrument (here ln(years listed)) should predict the dependent variable (here *CGI*) only indirectly, through the instrumented variable (here Tobin's *q*) and not directly. There is no theoretical reason to expect that years listed directly affects corporate governance, and there is no significant relationship between the two in our sample, either in simple correlation (*r* = 0.03), or in a multivariate regression (not shown) with both Tobin's *q* and ln(years listed) as independent variables.

With these instruments, *3SLS* estimates the following system of simultaneous equations:

Tobin's *q* = *f* (*CGI*, ln(years listed), other exogenous variables) + *e* ---------- (2)

CGI = *g* (Tobin's *q*, asset size dummy, other exogenous variables) + *h* ---------- (3)

C. 2SLS and 3SLS Results for CGI

In estimating *2SLS* and *3SLS*, we make the following changes to our sample and control variables, compared to our basic *OLS* regression (Table 4A, regression (5)). First, we exclude 12 banks, because we do not expect asset size dummy to be a valid instrument for banks, which are subject to most of the same rules as large firms, regardless of bank size.

Second, because we have only 65 large firms, we exclude several control variables in order to preserve the statistical power of the asset size dummy. We exclude three dummy variables that overlap strongly with asset size dummy: MSCI Index (35/65 large firms are in the MSCI index are large firms, compared to 30/422 small firms); ADR (Level 1) Dummy (7 of the 10 firms with Level 1 ADRs are large firms); and ADR (Level 2/3) Dummy (5 of the 6 firms with level 2 or 3 ADRs are large firms). In regressions that include these additional control variables, the coefficient on (instrumented) *CGI* remains highly significant, but the *t*-statistic drops., as expected, from 4.15 to 3.61 in *2SLS* and from 4.27 to 3.71 in *3SLS*.

Table 8A shows the *2SLS* and *3SLS* results for the overall index *CGI;* The coefficient on *CGI* is highly significant. This is consistent with causation running from the portion of *CGI* predicted by the asset size dummy to higher Tobin's *q*. Asset size dummy, is highly

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composition of its board of directors or created an audit committee; and (ii) three utilities that are majority state-owned (Korea Telecom, Korea Electric Power, Korea Gas Corporation) are exempt from the audit committee requirement.

significant as a predictor of *CGI* in the first-stage regression (1). Conversely, we do not find strong evidence of endogeneity. Tobin's *q* is not significant in *3SLS* as a predictor of *CGI*.

The coefficients and *t*-statistics for our *2SLS* and *3SLS* regressions need to be interpreted with caution. First, the coefficient estimates in *2SLS* and *3SLS* are identical. This is because the two sets of equations are just identified.[18]

Second, we interpret the *2SLS* coefficient on instrumented-*CGI* (the part of the index that jumps at 2 trillion won) as follows. The coefficient on asset size dummy in the first stage regression is 15.24. When multiplied by the .0110 coefficient on instrumented-*CGI* from the second stage regression, the product is 16.8. This implies that if we had two otherwise similar firms, one just over the size threshold and the other just below it, the firm just above the threshold would have a 15.24 points higher *CGI* score and 16.8% higher Tobin's *q* (the *3SLS* estimate is a bit smaller, at 16.0%).

One cannot interpret the .0110 coefficient on instrumented-*CGI* as telling us anything how a change in the uninstrumented part of the *CGI* index (the part that does not jump at 2 trillion won, which we will call "uninstrumented CGI") affects Tobin's *q*. Uninstrumented CGI could, in theory, predict higher Tobin's *q* more or less strongly than instrumented CGI, or even not at all. Putting endogeneity aside, the larger coefficient in *2SLS* than in *OLS* (.0110 versus .0065) implies that the instrumented part of the index correlates more strongly than the uninstrumented part.

There is still a strong *OLS* correlation between uninstrumented *CGI* and Tobin's *q* (see the large and small subsample regressions in *Table 6*, regressions (4) and (5)). In theory, this correlation could be endogenous, even if the correlation between instrumented *CGI* and Tobin's *q* appears not to be significantly endogenous. Strictly speaking, our *2SLS* and *3SLS* results provide evidence for causation (and against endogeneity and signaling) only for instrumented *CGI*. However, our results for instrumented *CGI* make it *more likely* that a causative connection exists for uninstrumented *CGI* also. It would be odd if the part of CGI that we can instrument for were not significantly endogenous, while the rest were so strongly endogenous as to fully offset the OLS correlation between uninstrumented *CGI* and Tobin's *q*

Our results imply that mandatory rules on board and committee structure can have a real effect on firm behavior. A competing hypothesis -- call it the "lackey effect" -- would be that mandatory rules on board and committee structure will have little effect because company insiders who don't want more outside directors or don't want an audit committee, will put

[18] *3SLS*, unlike *2SLS*, makes use of the covariance matrix computed from the two disturbance terms in the *3SLS* simultaneous equations framework. If the regression equations are just identified, the coefficients on *2SLS* and *3SLS* will be identical. However, the standard errors (and thus the *t*-statistics) will be different.

lackeys on the board or audit committee, and the firm's behavior will not change. Our results suggest that these rules can affect firm behavior or at least investors believe the rules matter.

C. 2SLS and 3SLS Results for Subindices F and G

Table 8B shows *2SLS* and *3SLS* results for subindices *F* and *G*. We do not regress subindices *A*, *E*, and *P* since we do not expect asset size dummy to be a good instrument for these subindices. However, the coefficients and *t*-statistics on instrumented subindices should be interpreted with extreme caution. First, the *t*-statistics in *2SLS* are identical, whether we instrument for *CGI*, for Subindex *F*, Subindex *G*, or indeed any other subindex. In effect, the *t*-statistic measures the power of the asset size dummy to predict Tobin's *q*, in a regression *without* a separate *CGI* or subindex variable. The *3SLS* regressions provide a better measure of the statistical power of the *subindex*.

Second, the product of (i) the coefficient on asset size dummy in first stage of *2SLS*, times (ii) the coefficient on instrumented *CGI*-or-subindex in the second stage is identical, whether we instrument for *CGI* or for a subindex. This product can be understood as the increment in Tobin's *q* for a firm that crosses the 2 trillion won threshold. Crossing this threshold predicts a roughly 15 point increase in *CGI* (Table 8A, regression (1)), and a 16.8% increase in Tobin's *q* in *2SLS*. The *3SLS* coefficient estimates differ somewhat, but are not more reliable Of the increase in *CGI*, roughly 11 points reflects an increase in Subindex *F* and 1.4 points reflects an increase in Subindex *G* (see the coefficients on asset size dummy in *Table 8B*, regressions (5) and (9)).

The coefficient on instrumented subindex in the second stage of *2SLS* lacks a natural interpretation. For example, it is nonsense to take seriously the .1206 coefficient on instrumented Subindex *G* (Table 8B, regression (10)), which implies that a 10 point increase in Subindex *G* predicts a 120% increase in Tobin's *q*. Instead, this large coefficient reflects the modest 1.4 point effect of asset size dummy on Subindex G in the first-stage regression, which then *requires* a larger coefficient on instrumented Subindex *G* in the second stage regression.

D. Chaebol Versus Non-Chaebol Subsamples

Table 9 shows summary *2SLS* and *3SLS* results for the overall *CGI* index for the whole sample and *chaebol* and non-*chaebol* subsamples. We do not analyze the bank subsample because its small size (12 firms) leaves us without sufficient degrees of freedom. We do not analyze subsamples divided by asset value because we are using asset size dummy as an instrument. The results for a sample that includes banks (*Table 9A*) are similar to the results without banks (*Table 8A*).

Table 9B provides evidence that the instrumented *CGI* affects firm value for both *chaebol* firms and non-*chaebol* firms. The coefficients on instrumented-*CGI* are 0.0087 for *chaebol* firms and 0.0115 for non-*chaebol* firms; the difference is not statistically significant. Asset size dummy has a larger predicted effect on CGI in the first stage regressions for non-chaebol than for chaebol firms (20 versus 12 points; [the difference is statistically significant (t = X.XX) The t-statistic for *chaebol* firms (t = 2.06) is lower than for non-*chaebol* firms (t = 3.37), but primarily because of the smaller size of the *chaebol* subsample (104 firms).

E. Alternative Measures of Firm Market Value

As a robustness check, we consider two additional measures of firm market value: market-to-book ratio (defined as market value of common stock divided by book value of common stock)and market-to-sales ratio (defined as market value of assets divided by sales). *Table 10* summarizes the results for these firm value variables. We run our basic *OLS* regression (see *Table 4A*, regression (5)); our *OLS* regressions for subindices, with controls for the rest of the corporate governance index (see *Table 4B*, column (2A)), and corresponding *2SLS* and *3SLS* regressions (see *Table 8*), with a different firm value variable.

The data row for *CGI* shows strong results for all three measures of firm market value. The estimated market/book and market/sales coefficients are larger than for Tobin's q, and t-statistics are strong, (t = 4.66 for *OLS* for market/book; t = 5.18 for *OLS* for market/sales) and similar. The OLS coefficient estimates imply that a 10 point (worst-to-best) increase in CGI predicts a 13% (96%) increase in market/book ratio and a 15% (109%) increase in market/sales ratio.

VI. Instrument Reliability: Functional Form for Firm Size Variable

In the *2SLS* and *3SLS* regressions above, we assume that ln(assets) is the correct functional form for the direct effect of firm size on Tobin's q, and that our asset size dummy affects Tobin's q only indirectly, through its effect on *CGI*. Ln(assets) is a commonly used size control, including the most relevant comparison studies (Durnev and Kim, 2003, and Gompers, Ishii and Metrick, 2003).[19] However, there is no theoretical or empirical reason to believe that it (or any other particular functional form) is the correct form for the direct effect of firm size on Tobin's q. We therefore investigate whether this is a sensible choice. We discuss in section *A* some reasons why choosing the correct functional form for the direct effect of firm

[19] See also, for example, Shin and Stulz (2000), Joh (2003); [other representative citations to come]. Klapper and Love (2002) use ln(sales) to control for firm size.

size on Tobin's *q* is likely not a major practical concern for this study. We then consider in section *B* how our results would change if we alter the assumed functional form for firm size, and conclude that the issue of functional form is not a complete nonissue either.

A. General Remarks on Functional Form

There are number of reasons why choosing a different functional form for firm size would not be likely to seriously undermine our results. First, our results are robust. The coefficients on *CGI* are statistically strong across *OLS, 2SLS*, and *3SLS* regressions; for various choices of control variables (see *Table 4A*); for various subsamples (see *Table 6*); for alternate specifications of the corporate governance index (see the reduced indices in *Table 4B*, column (2B)); and for various choices of firm value variable (see *Table 10*). They are present for individual subindices (see *Table 4B*, column (1)), for several subindices with controls for the remainder of the index (see *Table 4B*, column (2A)). They are present for a number of individual elements, including elements *C1* (at least 50% outside directors) and *D1* (firm has audit committee), both of which are largely exogenously determined (see Table *7B*).

Second, we have strong theoretical and empirical reason to choose the asset size dummy instrument: Corporate governance rules in fact change at this size threshold, and this change affects our corporate governance index in precisely the ways we would expect (see *Tables 7A* and *7B*).

Third, in our basic *OLS* regression (*Table 4A*, regression (5)), ln(assets) has a significant *negative* direct effect on Tobin's *q*. This suggests that the *positive* correlation between asset size dummy and Tobin's *q*, which underlies our *2SLS* and *3SLS* results, reflects the effect of the asset size dummy on *CGI* rather than the direct effect of the asset size dummy on Tobin's *q*. Regressions (6) and (7) in *Table 4A* reinforce this inference In regression (6), we substitute two asset size variables, ln(assets)-small and ln(assets)-large, for the single ln(assets) variable in regression (5). These variables are defined as:

ln(assets)-small = ln(assets) for firms with assets < 2 trillion won; and 0 otherwise

ln(assets)-large = ln(assets) for firms with assets > 2 trillion won; and 0 otherwise

Both of these variables take significant negative coefficients. This suggests that there is *not* a shift around 2 trillion won in the overall negative relationship between firm size and Tobin's q that could explain why ln(assets) is significant and negative, while asset size dummy is significant and positive. In regression (7), we omit *CGI* as an independent variable and substitute our asset size dummy. Asset size dummy takes a significant positive coefficient, while ln(assets) remains significant and negative. Ln(assets) is also negative and significant in our *2SLS* and *3SLS* regressions (see *Table 8A*, regressions (2) and (4)). It would stretch

coincidence beyond the bounds of plausibility for asset size to have a negative direct effect on firm value for firms with assets less than 2 trillion won, suddenly and sharply reverse sign at precisely the point (2 trillion won) where stronger corporate governance rules kick in, and be again negative for firms with assets above 2 trillion won.

We illustrate this point visually in Figures (5) and (6). Figure 5 presents a scatter plot of the correlation between ln(assets) and *CGI*. It includes a simple regression line that we allow to "jump" at asset size of 2 trillion won, but not to change slope. There is a positive overall slope. At the same time, a jump at 2 trillion won is observed, corresponding to the legal requirements that apply to large firms.

Figure 6 considers the relationship between Tobin's *q* and firm size. We run a piecewise linear regression of Tobin's q against ln(assets), separately for small firms and large firms. There is an overall negative relationship between Tobin's *q* and ln(assets), with a jump at 2 trillion won. Above this size threshold, there is a slight positive slope to the regression line, but this is not significant, and changes sign in a regression with full control variables(see *Table 4A*, regression (8)). The full piecewise regression line is shown as a dotted line in Figure 6.

B. Alternate Functional Forms for Firm Size Variable

The strong positive correlation between firm size and corporate governance ($r = 0.58$) partly reflects the legal rules that apply to large but not small firms. But a correlation likely exists even apart from this. In simple correlation, there is a positive slope in Figure 5, even when we allow the regression line to jump at 2 trillion won. Also, ln(assets) takes a positive and marginally significant ($t = 1.87$) in the first-stage *2SLS* regressions with *CGI* as a dependent variable, and remains positive albeit insignificant in *3SLS* (see Table 8A, regressions (1) and (3)). This positive correlation could reflect a tendency for larger firms to adopt stronger governance measures, due to greater investor and public pressure, or these firms' greater interest in raising external capital. Conversely, firms that adopt stronger corporate governance could have an easier time raising capital, and therefore grow larger.

If ln(assets) and *CGI* are correlated but independent, the correlation will increase estimation error (reduce the *t*-statistics) in an *OLS* regression of Tobin's *q* on *CGI*, ln(assets), and other control variables, but will not bias the coefficients. If asset size and corporate governance index are causally related, the coefficient estimates on each can be biased as well.

We evaluate the possible interaction between firm size and *CGI* in several ways. First, in *Table 11A*, we run a series of *OLS* regressions that include different functional forms for firm size: Column (1) reproduces our basic *OLS* regression (from *Table 4A*, regression (5)). We then progressively add additional powers of ln(assets) in regressions (2)-(4), thus giving greater

flexibility to the firm size control This greater flexibility of functional form has only a modest effect on the coefficient and *t*-statistic on *CGI*. At the same time, higher powers of ln(assets) are often significant, which suggests that ln(assets) is an imperfect functional form for the direct effect of firm size on Tobin's *q*.

Note also a risk of this approach. For R&D/sales and *chaebol30* dummy, the coefficient drops and becomes marginally significant for R&D/sales, and insignificant for chaebol30 in regression (3), while at the same time ln(assets), $\ln(\text{assets})^2$ and $\ln(\text{assets})^3$ are all significant. Yet one would not quickly conclude from this that R&D/sales or *chaebol30* dummy do not significantly affect Tobin's *q*, while $\ln(\text{assets})^3$ does. There is theoretical reason to think that R&D intensity and *chaebol* membership can plausibly affect Tobin's *q*, and no reason to expect a complicated cubic relationship to firm size. Thus, one might conclude that higher powers of ln(assets) are for some reason drawing off the power of R&D and chaebol membership, and that the best research strategy is to exclude higher powers of ln(assets) from the regression.

In *Table 11B*, we investigate what happens to the coefficient on asset size dummy in the first stage of *2SLS*, where we use asset size dummy plus other control variables to predict *CGI*, if we progressively add powers of ln(assets) to the regression. We expect inclusion of ln(assets), which correlates highly with asset size dummy ($r = 0.74$), to increase estimation error (reduce the *t*-statistic) for the coefficient on asset size dummy in the first stage of *2SLS*. This effect should get stronger as we increase the flexibility of the firm size control. A flexible functional form for ln(assets) can also partly mimic the asset size dummy, and thus reduce the expected coefficient on the asset size dummy. Thus, adding a more flexible functional form for firm size should weaken the asset size dummy as an instrument for corporate governance. We see modest evidence of this effect in *Table 11B*. As we add powers of ln(assets), the coefficient on asset size dummy declines slightly, and the *t*-statistic progressively weakens, but remains strong at $t = 5.22$ even in regression (4) (with four powers of ln(assets) in the regression). The coefficients on higher powers of ln(assets) vary in sign across regressions and are insignificant.

We turn to the second stage of *2SLS* in *Table 11C*. Here, the story becomes murkier. The coefficient and *t*-statistic on instrumented *CGI* decline. The coefficient is marginally significant when we add $\ln(\text{assets})^2$ and insignificant when we add $\ln(\text{assets})^3$. But the coefficient recovers and is again significant when we add $\ln(\text{assets})^4$.

The last two regressions in *Table 7A* offer further evidence that ln(assets) is an imperfect functional form for firm size. In regression (7), we regress Tobin's q on a family of asset size dummy variables plus our usual control variables, but not *CGI*. If ln(assets) is a perfect functional form for the direct effect of firm size on Tobin's *q*, then only asset size dummy 5 (at

2 trillion won) should be significant. In fact, asset size dummy 5 has a much larger coefficient and *t*-statistic than any other asset size dummy, but asset size dummies 3 and 4 are also significant.

In *Table 7A*, regression (8), we add *CGI* as an independent variable. The coefficient on asset size dummy 5 drops in half, from .190 in regression (7) to .97, while the coefficients on the other asset size dummies change only slightly. This suggests that an important part of the power of asset size dummy 5 in regression (7) reflects its effect on *CGI.* At the same time, asset size dummy 5 remains significant, consistent with ln(assets) not picking up all of the direct effect of *this particular* asset size dummy on Tobin's *q*.

Putting this evidence together, we believe that our choice of ln(assets) as a control variable in *2SLS* and *3SLS* is a reasonable, if imperfect compromise between competing concerns: on the one hand, controlling for the direct effect of firm size on Tobin's' *q*; and on the other hand, not adopting a highly flexible functional form that will rob power from a valid instrument.

VII. Sources of the Correlation Between Governance and Firms' Market Value

In this part, we evaluate the possible sources of the correlation between corporate governance and firm value. There are several possible sources. Better governed firms could be more profitable; they could pay higher dividends for a given level of profits; or outside investors (whose trades determine share prices) could value the same earnings (or dividends) more highly. We do not find evidence that better governed firms are more profitable or pay higher dividends. We do find evidence that outside investors value the same earnings (or the same dividend stream) more highly for better governed firms. In effect, better-governed firms enjoy a lower cost of capital. This could reflect investor beliefs about future profitability, the likelihood that profits will eventually turn into cash flow to outside investors, or both.

A. Evidence on Profitability, Capital Expenditures, and Dividends

Table 12A shows the coefficient on *CGI* for an array of profitability variables. We use four different measures of profit:

- net income
- ordinary income (basically net income plus taxes and extraordinary items)
- *EBIT* (ordinary income plus interest)
- *EBITDA* (*EBIT* plus depreciation and amortization expense)

For each, we report results with five different denominators:

- sales

- book value of assets
- book value of common stock
- market value of assets
- market value of common stock.

We also report results for sales/(book value of assets) and for capital expenditures/sales and capital expenditures/(book value of assets). We initially use a limited set of control variables (ln(asset size), ln(years listed), debt/equity ratio, sole ownership, and 2-digit industry controls), rather than the full set of control variables from our basic *OLS* regression (Table 4, regression (5)).

There is no evidence that higher *CGI* correlates with stronger accounting measures of profitability. All regressions with sales, book value of assets, and book value of common stock in the denominator are insignificant, with varying sign. These weak results do not change when we add a full set of control variables (*Table 12B*).

There are hints that higher *CGI* correlates with lower dividends. All coefficients in the last column of *Table 12A* are negative, and the coefficient for dividends/sales is significant, although only barely so.

B. Evidence on Earnings and Dividend Multiples

In contrast to the weak results for profitability, there is some evidence that investors value the same earnings stream more highly for better governed firms. In *Table 12A*, the coefficients on *CGI* for *EBITDA*, *EBIT* and ordinary income/(market value of assets) are all negative and significant. So are the coefficients on CGI for *EBITDA* and *EBIT*/(market value of common stock).

At the same time, this inference is not especially robust. The regressions with net income in the numerator are insignificant, with varying sign (negative with market value of assets in the denominator, positive with market value of common stock in the denominator). Also, several of the results weaken with a full set of control variables (*Table 12B*), especially the results with market value of common stock in the denominator.

When we turn from earnings to dividends, the evidence becomes clearer. Investors appear to value the same level of dividends more highly for better governed firms. The coefficients on dividends/(market value of assets) and dividends/(market value of common stock) are negative and significant in both *Table 12A* and *Table 12B.*

Putting this evidence together, there is some evidence that better governed firms (measured by *CGI*) enjoy a lower effective cost of capital. They can attain higher market value with the same level dividend payments, and likely with the same level of earnings as well.

C. Wealth Creation Versus Wealth Transfer

Our study leaves open an uncertainty that is related to the question of whether better governed firms do, or in the future will, show higher profitability. An increase in share prices can arise because better governed firms are more valuable to all shareholders combined (wealth creation). It can also arise because better governance rules increase the share of firm value captured by minority shareholders and reduce the share captured by controlling shareholders (wealth transfer).

These two possibilities lead to different predictions for the future course of voluntary governance reforms. If the dominant effect is wealth creation, the controlling shareholders of many small firms, even if they initially opposed measures such as 50% outside directors or audit committees, may become persuaded over time, perhaps by studies like this one, to adopt these measures voluntarily. Conversely, if the dominant effect is wealth transfer, then voluntary adoption of these governance rules is less likely, especially for firms with no immediate need to issue additional shares or otherwise raise outside capital.

VIII. Conclusion

In this paper, we report evidence that corporate governance is an important factor in explaining the market value of Korean public companies. We construct a corporate governance index (0~100) for 525 of the 560 companies listed on the Korea Stock Exchange, relying primarily on responses to a survey conducted by the KSE during the first half of 2001. We find a strong positive correlation between the overall corporate governance index and firm market value, which is robust across *OLS, 2SLS* and *3SLS* regressions, in subsamples, in alternate specifications of the corporate governance index, and with alternate measures of firm value.

To address the possible endogeneity of corporate governance, we treat corporate governance as an endogenous variable and estimate *2SLS and 3SLS* using, as an instrument for corporate governance, an asset size dummy variable, which takes a value of 1 for firms with assets greater than 2 trillion won. This instrument is appropriate because several important Korean corporate governance rules apply only to firms with assets greater than 2 trillion won. We separately control for ln(assets), to make it more likely that the asset size dummy predicts firm value primarily indirectly, through its effect on corporate governance, rather than directly.

Our *2SLS* and *3SLS* results support the inference from *OLS* that stronger corporate governance increases the market value of Korean firms. For instrumented-CGI (the part of the corporate governance index that jumps at 2 trillion won), we find evidence that our corporate governance predicts higher firm market value, and no evidence of endogeneity.

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REFERENCES

Angrist, Joshua D., and Alan B. Krueger (2001), "Instrumental Variables and the Search for Identification: From Supply and Demand to Natural Experiments," *Journal of Economic Perspectives* vol. 15:4, pp. 69-85.

Bebchuk, Lucian Arye, Reinier Kraakman, and George Triantis (2001), "Stock Pyramids, Cross-Ownership, and Dual Class Equity: The Creation and Agency Costs of Separating Control from Cash Flow Rights," in Randall K. Morck, ed., *Concentrated Corporate Ownership*, pp. 295-318.

Berkowitz, Daniel, Katharina Pistor, and Jean-Francois Richard (2003), "Economic Development, Legality, and the Transplant Effect," European Economic Review, forthcoming

Bhagat, Sanjai and Bernard Black (1999), "The Uncertain Relationship Between Board Composition and Firm Performance, " *Business Lawyer* Vol. 54, pp. 921-963.

Bhagat, Sanjai and Bernard Black (2002), "The Non-Correlation Between Board Independence and Long-Term Firm Performance, " *Journal of Corporation Law* Vol. 27, pp. 231-273.

Bhagat, Sanjai, Dennis Carey, and Charles Elson (1999), "Director Ownership, Corporate Performance, and Management Turnover," *Business Lawyer* Vol. 54, pp. 885-9yy.

Black, Bernard, Barry Metzger, Timothy O'Brien & Young Moo Shin, (2001), "Corporate Governance in Korea at the Millennium: Enhancing International Competitiveness" (Report to the Korean Ministry of Justice, May 2000), *Journal of Corporation Law* Vol. 26, pp. 537-609.

Black, Bernard (2001), "The Corporate Governance Behavior and Market Value of Russian Firms," *Emerging Markets Review*, Vol. 2, pp. 89-108. (An earlier version of this paper was published as "Does Corporate Governance Matter? A Crude Test Using Russian Data," *University of Pennsylvania Law Review*, Vol. 149, pp. 2131-2150 (2001).)

Brennan, Michael, Tarun Chrodia, and Avanidhar Subrahmanyam (1998), "Alternative Factor Specifications, Security Characteristics, and the Cross-Section of Expected Stock Returns," *Journal of Financial Economics* Vol. 49, pp. 345-375.

Carleton, Willard, James Nelson, and Michaels Weisbach (1998), "The Influence of Institutions on Corporate Governance through Private Negotiations: Evidence from TIAA-CREF," *The Journal of Finance* Vol.53 No.4 pp 1335-1362

Cho, Sungbin, and Kenneth H. Kang (2002), Firm Level Analysis of the Korean Corporate Sector: 1996-2000", in International Monetary Fund, *Republic of Korea: Selected Issues (2002)*, IMF Country Report No. 02/20.

Coffee, John C., Jr. (2001), "Do Norms Matter: A Cross-Country Evaluation," *University of Pennsylvania Law Review*, Vol. 149, pp. 2151-2177.

Coffee, John C., Jr. (2002), "Racing Towards the Top?: The Impact of Cross-Listings and Stock Market Competition on International Corporate Governance," working paper.

Coppetiers, Eric (2001), "Governance Ratings in Europe," *Corporate Governance International*, January, pp. 31-38.

Credit Lyonnais Securities Asia (2001), *CG Watch: Corporate Governance in Emerging Markets*, April.

Deminor (2000), *Corporate Governance Rating Service* (Press Release, Dec. 12).

Doidge, Craig, G. Andrew Karolyi and Rene M. Stulz (2002), "Why Are Foreign Firms Listed in the U.S. Worth More?," working paper., available at http://ssrn.com/abstract=285337

Durnev, Artyom, and E. Han Kim (2003), "To Steal or Not to Steal: Firm Attributes, Legal Environment, and Valuation," Working Paper, available at http://ssrn.com/abstracxt=318719 (Social Science Research Network).

Dyck, Alexander, and Luigi Zingales (2001), "Private Benefits of Control: An International Comparison," Working Paper, *available at* http://ssrn.com/abstract=296107 (Social Science Research Network.

Eisenberg, Theodore, Stefan Sundgren and Martin T. Wells (1998), "Larger Board Size and Decreasing Firm Value in Small Firms," *Journal of Financial Economics* vol. 48, pp. 35-54.

Ferris, Stephen P., Murali Jagannathan and A,C, Pritchard (2003), "Too Busy to Mind the Business? Monitoring by Directors with Multiple Board Appointments" Journal of Finance, vol. xx, (forthcoming), earlier version available at http://ssrn.com/abstract=167288.

Ferris, Stephen P., Kenneth A. Kim and Pattanaport Kitsabunnarat (2003), "The Costs (and Benefits?) of Diversified Business Groups: The Case of Korean Chaebols," *Journal of Banking and Finance*, Vol. 27, pp. 251-273.

Gill, Amar, (2002) "Corporate Governance and Performance," *Corporate Governance International*, pp. 28-49 (Sept.).

Gompers, Paul, Joy Ishii, and Andrew Metrick (2003), "Corporate Governance and Equity Prices," *Quarterly Journal of Economics*, vol. xx, pp. 107-155.

Joh, Sung Wook (2003), "Corporate Governance and Firm Profitability: Evidence from Korea Before the Economic Crisis", *Journal of Financial Economics*, vol. 68, pp. 287-322

Karpoff, Jonathan, Paul Malatesta, and Ralph Walkling (1996), "Corporate Governance and Shareholder Initiatives: Empirical Evidence," *Journal of Financial Economics*, Vol. 42, pp. 365-395.

Kim, Hwa-Jin (2002), "Toward the 'Best Practice' Model in a Globalizing Market: Recent Developments in Korean Corporate Governance", *Journal of Corporate Law Studies*, vol. 2, pp. 345-366.

Klapper, Leora F. and Inessa Love (2002), "Corporate Governance, Investor Protection and Performance in Emerging Markets," World Bank Working Paper.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny (1997), "Legal Determinants of External Finance", *Journal of Finance*, vol. 52, pp. 1131-1150.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny (1998), "Law and Finance", *Journal of Political Economy*, vol. 106, pp. 1113-1155.

La Porta, Rafael, Florencio Lopez-de-Silanes and Andrei Shleifer (1999), "Corporate Ownership Around the World", *Journal of Finance*, vol. 54, pp. 471-517.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny (2000), "Agency Problems and Dividend Policies Around the World", *Journal of Finance*, vol. 55, pp. 1-33.

La Porta, Rafael, Florencio Lopez de-Silanes, Andrei Shleifer, and Robert Vishny (2002), "Investor Protection and Corporate Valuation," *Journal of Finance* (forthcoming)

La Porta, Rafael, Florencio Lopez de-Silanes, and Andrei Shleifer (2002), "What Works in Securities Laws," Working Paper.

Lang, Mark H., Karl V. Lins and Darius P. Miller, (2003) "ADRs, Analysts and Accuracy: Does Cross Listing in the U.S. Improve a Firm's Information Environment and Increase Market Value?" *Journal of Accounting Research*, forthcoming.

Lang, Larry, and Rene Stulz (1994), "Tobin's q, Diversification, and Firm Performance," *Journal of Political Economy*, vol. 102, pp. 1248-1280.

Levine, Ross (1998), "The Legal Environment, Banks, and Long-Run Economic Growth," Journal of Money, Credit and Banking, Vol. 30, pp. 596 620.

Levine, Ross (1999), " Law, Finance, and Economic Growth," *Journal of Financial Intermediation*, vol. 8, PP 8-35.

Mak, Y.T., and Yuan Li (2001), "Determinants of Corporate Ownership and Board Structure: Evidence from Singapore," *Journal of Corporate Finance* vol. 7, pp. 235-2xx.

McGurn, Patrick S. (2002), "Keeping Score: Rating Governance in the Post-Enron World," *Corporate Governance Advisor* 27-29 (Sept./Oct.).

Millstein, Ira and Paul MacAvoy (1998), "Active Board of Directors and Performance of the Large Publicly Traded Corporation," *Columbia Law Review*, vol. 98, pp. 1283-1321.

Miwa, Yoshiro and J. Mark Ramseyer (2003), "Who Appoints Them, What Do They Do? Evidence on Outside Directors from Japan," working paper.

Modigliani, Franco & Enrico Perotti (2000), 'Security Versus Bank Finance: The Importance of a Proper Enforcement of Legal Rules," *International Review of Finance*, Vol. 1, pp. 81-96.

Nenova, Tatiana (2001), "Control Values and Changes in Corporate Law in Brazil" (World Bank working paper), available at http://ssrn.com/abstract=294064 (Social Science Research Network).

Nenova, Tatiana (2003), "The Value of Corporate Votes and Control Benefits: A Cross-Country Analysis," *Journal of Financial Economics*, forthcoming, *available at* http://ssrn. com/abstract=237809 (Social Science Research Network).

Patel, Sandeep A, Amra Balic and Liliane Bwakira (2002), "Measuring Transparency and Disclosure at Firm-Level in Emerging Markets," *Emerging Markets Review* vol. 3, pp. 325-337.

Shin, Hyun-Han and Young S. Park (1999), "Financing Constraints and Internal Capital Markets: Evidence from Korean 'Chaebols'," *Journal of Corporate Finance*, vol. 5, pp. 169-191.

Shin, Hyun-Han and Rene Stulz (2000), "Firm Value, Risk, and Growth Opportunities," National Bureau of Economic Research Working Paper No. W7808, *available at* http://ssrn.com/abstract=234344 (Social Science Research Network).

Sundaramurthy, Chamu, James Mahoney, and Joseph Mahoney, "Board Structure, Anti-takeover Provisions, and Stockholder Wealth," *Strategic Management Journal* vol.18:3, pp. 231-245.

Weisbach, Michael, and Benjamin Hermalin (2001), "Boards of Directors As an Endogenously Determined Institution: A Survey of the Economic Literature," National Bureau of Economic Research Working Paper No. W8161, *available at* http://ssrn.com/abstract=262721 (Social Science Research Network).

Wooldridge, Jeffrey (2000), *Introductory Econometrics: A Modern Approach* (South-Western College Publishing)

Yermack, David (1996), "Higher Market Valuation of Companies with a Small Board of Directors," *Journal of Financial Economics* vol. 40, pp. 185-211.

Figure 1. Distribution of Corporate Governance Index, *CGI*

Histogram of distribution of corporate governance index (*CGI*) scores. Sample size = 525. Mean (median) =30.36 (30.80); minimum = 13.41; maximum = 86.32, standard deviation = 11.26; skewness = 1.5447.

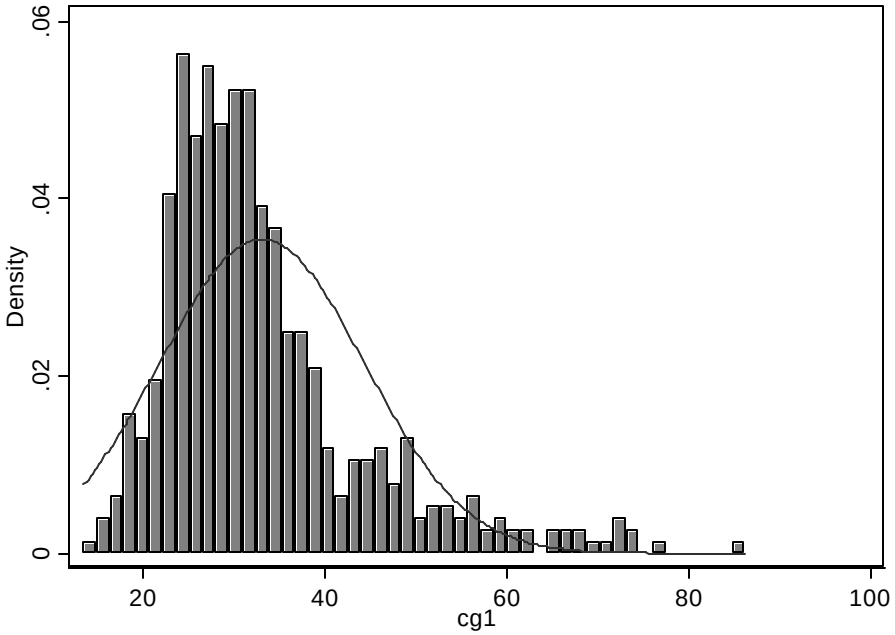

Figure 2. Corporate Governance and Tobin's *q*

Scatter plot of corporate governance index (*CGI*) versus Tobin's *q*. The fitted line is estimated using all 525 observations for which we have data on *CGI* and Tobin's *q*. Extreme values (highest and lowest 5% of values for Tobin's *q*) are suppressed in the scatter plot for better visual presentation.

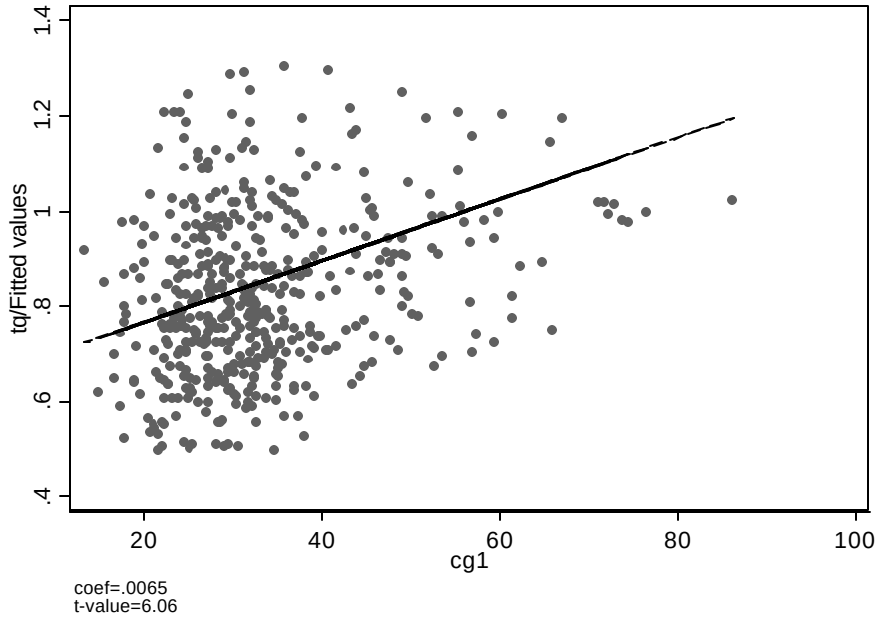

Figure 3: Corporate Governance and Market-to-Book Ratio

Scatter plot of corporate governance index (*CGI*) versus market/book ratio. The fitted line is estimated using all 519 observations for which we have data on *CGI* and market/book ratio. Extreme values (highest and lowest 5% of values for market/book ratio) are suppressed in the scatter plot for better visual presentation.

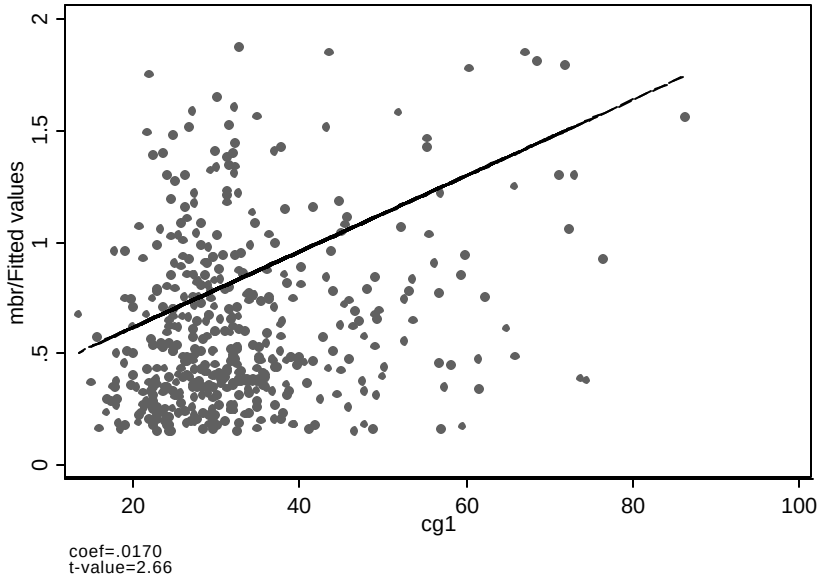

Figure 4: Corporate Governance and Market-to-Sales Ratio

Scatter plot of corporate governance index (*CGI*) versus market/sales ratio. The fitted line is estimated using all 525 observations for which we have data on *CGI* and market/sales ratio. Extreme values (highest and lowest 5% of values for market/sales ratio) are suppressed in the scatter plot for better visual presentation.

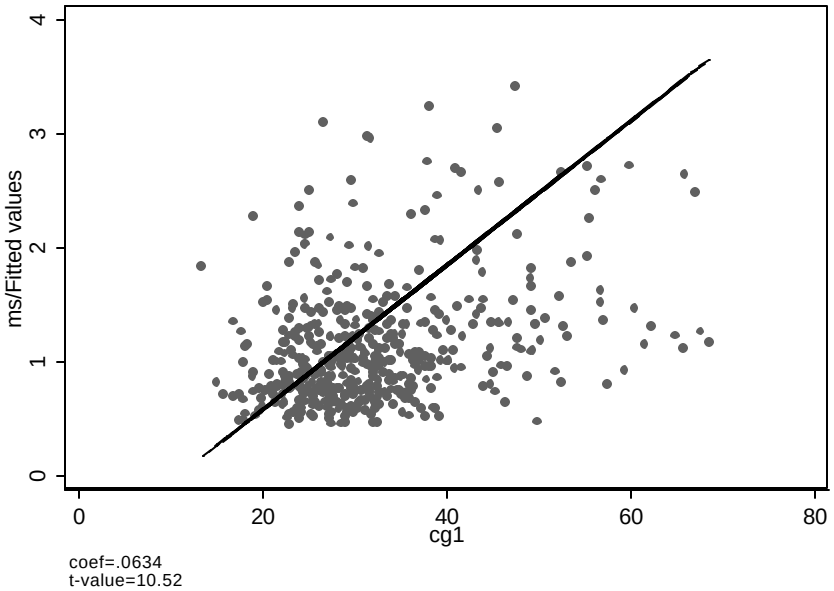

Figure 5: Asset Size and Corporate Governance

Scatter plot of ln(assets) versus corporate governance index (*CGI*). Two fitted lines are provided. The fitted lines are constrained to have a common slope, but can have different intercepts. The slope is estimated using all 525 firms for which we have data on *CGI*. The intercepts are separately estimated for two sub-samples: firms with book asset value below 2 trillion won and those with book asset value above 2 trillion won. The vertical line indicates 2 trillion won in assets.

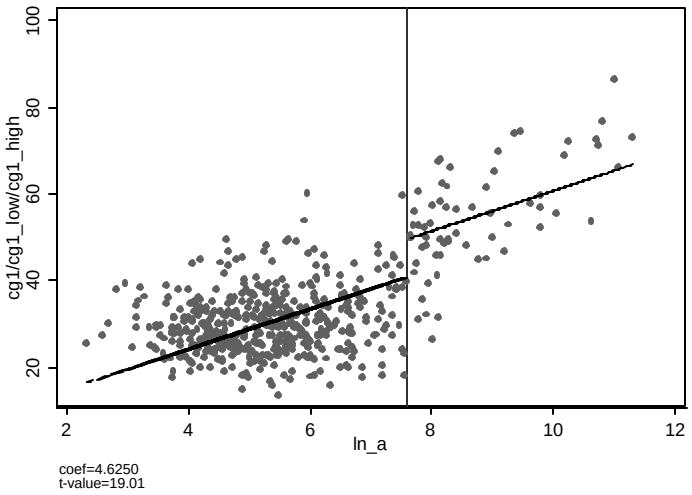

Figure 6: Tobin's Q and Asset Size

Scatter plot of ln(assets) versus Tobin's *q*. Two sets of fitted lines are provided: one with solid lines and the other with dotted lines. The solid lines are fitted lines for the scatter plot. The dotted lines are partial regression lines drawn from *Table 4A*, regression (8). The x- and y-axes for the partial regression lines are shown at the top and right hand edge of the figure, respectively. The x-axis for the partial regression lines is the residual from a regression of ln(assets) on all the regressors except for ln(assets). The y-axis for the partial regression line is the residual from a regression of Tobin's *q* on all the regressors except for ln(assets). Both sets of fitted lines are estimated for two subgroups: small and large firms. The vertical line indicates 2 trillion won in assets. The horizontal line indicates zero residual for the partial regression lines. Extreme values (highest and lowest 5% of values for Tobin's *q*) are suppressed in the scatter plot for better visual presentation.

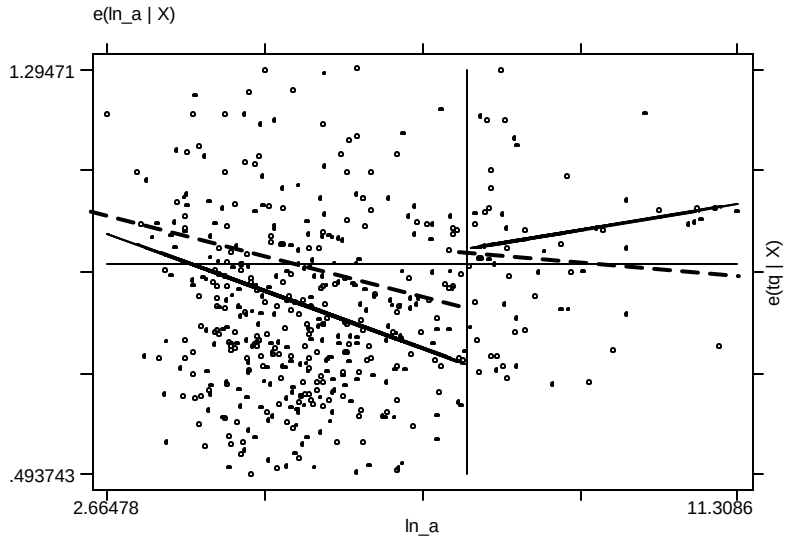

Table 1. Corporate Governance Index: Elements and Summary Statistics

Description, applicable legal requirement, if any, and summary statistics for the 39 elements included in our overall Corporate Governance Index.

Subindex *A*. Shareholder Rights

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. This 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, and, for companies with assets greater than 2 trillion won, the controlling shareholder can vote a maximum of 3% of the outstanding shares on this issue. This will make opting out very hard but does not affect companies that have already opted out. Survey question I-1-(1).	534	31	0.06
A.2	Firm permits voting by mail. Survey question I-1-(2).[20]	534	68	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.[21]	503	88	0.17
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).	534	95	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 10 billion won. 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%). The "no" response may be because the responding officer did not know about this legal requirement (in force only since 1999), or because the rule applies only to large transactions. Since March 28, 2001, the *Securities and Exchange Act* requires companies with assets > 2 trillion won to 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 survey was conducted. Survey question II-5-(5).	534	179	0.34

[20] For firms that allow voting by mail, the average participation in voting by public shareholders is 28.0%, versus 23.5% at other firms (p = .069).

[21] Firms that set their meeting date or location to encourage attendance have *lower* participation in voting by public shareholders than other firms (17.5% versus 25.0%). This could be because firms with low voting turnout making stronger efforts than other firms to encourage turnout.

Subindex *F*. Board and Committee Structure

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 25% outside directors; and banks and companies with assets > 2 trillion won must have 50% outside directors and at least 3 outside directors. Survey questions II-1 and III-1.[22]	534	83	0.16
C.2	Firm has more than 50% outside directors. Survey questions II-1 and III-1.	534	28	0.05
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 2 trillion won. Survey question III-3-9.[23]	534	82	0.15
D.1	Audit committee of the board of directors exists. The *Banking Act* and the *Securities and Exchange Act* require banks and listed companies with assets > 2 trillion won to have an audit committee with at least 2/3 outside directors and an outside director as chair. Other firms may have either an audit committee or an internal auditor. Survey question IV-1-5.[24]	534	93	0.17

Subindex *G*. Board and Committee Procedure

Variable	Summary of the Variable (yes = 1, no = 0)	Responses[25]	No. of "1" Responses	Mean
B.1	Directors attend at least 75% of meetings, on average. Survey question II-2.	477	262	0.55
B.2	Directors' positions on board meeting agenda items are recorded in board minutes. Survey question II-5-(6)	534	221	0.41
B.3	CEO and board chairman are different people. Banks were more likely than other firms to do so (3/12 banks (25%), versus 23/500 other firms (5%). Survey question II-5-(7).	534	26	0.05
B.4	A system for evaluating directors exists. Survey question II-5-(8).	534	34	0.06
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.	534	375	0.70
B.6	Firm holds four or more regular board meetings per year. Survey question II-5-(1).	352	256	0.73
B.7	Board size, scored as 1 if firm has 8 or fewer directors; 0.5 if firm has	534	442	0.89

[22] Thirteen firms did not answer the survey question on number of outside directors, presumably because the respondent did not have this information. We determined from these companies' public disclosure how many outside and total directors they had.

[23] Respondents could not answer "yes" or "no" to a direct survey question about whether they had an audit committee, but instead had to answer a question about the composition of the committee. Twenty-one firms did not answer this question. We determined from the *KSE* whether these firms had audit committees (one firm did).

[24] Respondents could not answer "yes" or "no" to a direct survey question about whether they had an outside director nominating committee, but instead had to answer a question about the composition of the committee. XX firms did not answer this question. We determined from the *KSE* whether these firms had outside director nominating committees (8 firms did).

[25] The small number of responses for questions D.4, D.9, and D.11 is because these questions apply only to companies that have an audit committee.

	9-12 directors, 0 if firm has 13 or more directors.			
C.3	Firm has one or more foreign outside directors. Survey question II-1-2.	534	37	0.07
C.5	Outside directors do not receive retirement pay. Survey question III-4-3-(3)	316	277	0.88
C.6	Outside directors can obtain advice from outside experts at the company's expense. The *Securities and Exchange Act* was revised on March 28 2001 to require this for listed firms. We infer that such revision was not fully incorporated in each company at the time of the survey. Survey question III-4-3-(5).	316	77	0.24
C.7	Firm has a system for evaluating outside directors or plans to have one. This question potentially overlaps 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.	504	152	0.30
C.8	Shareholders approve outside directors' aggregate pay at shareholder meeting (separate from shareholder approval of all directors' aggregate pay). Question III-4-7.	477	47	0.10
C.9	Outside directors attend at least 75% of meetings, on average. Survey question III-5.	459	193	0.42
C.10	Firm has code of conduct for outside directors. Survey question III-9-(1).	534	41	0.08
C.11	Firm has designated a contact person to support outside directors. Survey question III-9-(2).	534	272	0.51
C.12	A board meeting exclusively for outside directors exists. Survey question III-9-(3) and III-9-1.	534	22	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.	534	526	0.99
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.	92	56	0.61
D.3	Bylaws governing audit committee (or internal auditor) exist. Survey question IV-1-1.	484	317	0.65
D.4	Audit committee includes someone with expertise in accounting. Survey question IV-1-3.	91	69	0.76
D.5	Audit committee (or internal auditor) recommends the external auditor at the annual shareholder meeting. Survey question IV-1-6.	490	364	0.74
D.6	Audit committee (or internal auditor) approves the appointment of the internal audit head. Survey question IV-2-1.	399	187	0.47
D.7	Minutes written for each audit committee (internal auditor) meeting. Survey question IV-2-2.	262	159	0.61
D.8	Report on audit committee's (or internal auditor's) activities at the annual shareholder meeting. Survey question IV-2-4.	468	417	0.89
D.9	Audit committee members attend at least 75% of meetings, on average Survey question IV-7.	67	64	0.96
D.10	Audit committee (or internal auditor) meets with external auditor to review financial statements. Survey question IV-1-5.	487	327	0.67
D.11	Audit committee meets two or more times per year. Survey question IV-7.	72	57	0.79

Subindex *E*. Disclosure to Investors

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.	534	20	0.04
E.2	Firm website includes resumes of board members. Survey question II-5-(4).	534	47	0.09
E.3	English disclosure exists. Survey question V-7.	494	23	0.05

Subindex P. Ownership Parity

Variable	Summary of the Variable (continuous between 0 and 1; min. = 0.32; max. = 1)	Sample Size	Number of "1" Responses	Mean
Ownership Parity	Ownership Parity = 1 - ownership disparity, where ownership disparity = ownership by all affiliated shareholders - ownership by largest shareholder.	525	continuous variable	0.83

Table 2. Other Variables

This table provides a brief description, including definition and source, for the other dependent and independent variables used in this paper. Sales, book value of assets, and other accounting data are measured for the fiscal year (for balance sheet data, at the end of the fiscal year) ending between July 2000 and June 2001, most often Dec. 26, 2000). If more than one fiscal year ends during the period, we use the most recent fiscal year for balance sheet data and the most recent fiscal year that covers a full year for income statement data. We take accounting data from the TS2000 database maintained by the Korea Listed Companies Association, and share price, trading, and share ownership data from the *KSE*.

Variables	Description
Tobin's q	We estimate Tobin's *q* as market value of assets/book value of assets. We estimate market value of assets as [book value of debt + book value of preferred stock + market value of common stock]. Korean accounting rules require reasonably frequent updating of book values to reflect market values, so book value of assets should not differ markedly from replacement cost.
Market-to-Book Ratio	Market value of common stock divided by book value of common stock. We drop 6 firms in our sample with negative book value of common stock.
Market-to-Sales Ratio	Market value of common stock 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 Stock	Book value of assets - book value of debt - book value of preferred stock.
Book Value of Total Equity	Book value of common stock plus preferred stock.
Market Value of Common Stock	Market value of common stock in billion won, measured at June 29, 2001. If a company is delisted before June 29, 2001, the most recent figure is used.
Market Value of Total Equity	Market value of common stock plus book value of preferred stock
Debt/Equity Ratio	Book value of debt divided by market value of common stock
Years Listed	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.
R&D/Sales	Ratio of research and development (R&D) expense to sales. We assume this ratio is zero for the 137 firms in our sample with missing data for R&D expense.
Advertising/Sales	Ratio of advertising expense to sales. We assume this ratio is zero for the 65 firms in our sample with missing data for advertising expense.

Variables	Description
Export/Sales	Ratio of export revenue to sales. We assume this ratio is zero for the 66 firms in our sample with missing data for export revenue.
Share Turnover	Common shares traded during 2000 divided by common shares held by public shareholders, where common shares held by public shareholders = common shares outstanding x (1 -Total Affiliated Ownership).
Foreign Ownership	Foreign ownership of the firm's common shares divided by common shares outstanding. *Source: [to come]*
Market Share	Firm sales divided by total sales of all firms in the same 4-digit industry. Company universe includes all companies listed on *KSE* or registered on *KOSDAQ*.
Market Concentration	Herfindahl Hirschman Index of concentration for 4-digit industry to which firm belongs
Sole Ownership	Percentage share ownership by largest shareholder. A *largest shareholder* is a shareholder, together with its related parties, that holds the largest number of shares outstanding. Related parties include relatives, affiliated firms, and company directors. Ownership for this and other variables is measured at year-end 2000.
ADR (Level 1) Dummy	1 if firm has issued level 1 American Depository Receipts (ADRs); 0 otherwise
ADR (Level 2/3) Dummy	1 if firm has issued level 2 or level 3 ADRs; 0 otherwise
MSCI Index Dummy	1 if firm is included in Morgan Stanley Capital International Index; 0 otherwise
Total Affiliated Ownership	Percentage share ownership by all affiliated shareholders.
Ownership Parity	1 - ownership disparity, where ownership disparity = total affiliated ownership - sole ownership
Asset Size Dummy	1 if book value of assets is greater than 2 trillion won; 0 otherwise.
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 *chaebol* as of April 2000; 0 otherwise. The Fair Trade Commission identifies the top-30 chaebols and their members, in April of each year. [*Source: Fair Trade Commission press releases*].
board size	number of members of the board of directors
Industry Dummy Variables (2-digit unless otherwise noted)	Dummy variables for membership in one of the 12 2-digit or one of the 41 4-digit industries (based on KSIC codes) with at least one firm in our sample. For details on 2-digit industries, see footnote 12.
CLSA Index Score	Score on the *CLSA* corporate governance index.
S&P Index Score	Ranking on the *S&P* disclosure and transparency index.

Table 3. Descriptive Statistics

Descriptive statistics for the overall corporate governance indices and subindices and selected other variables used in this study.

Panel A. Corporate Governance Indices and Subindices

	Code	No. of Obs.	Mean	Stand. Dev.	Min.	Max.
Shareholder Rights	*A*	534	3.47	3.65	0.00	16.00
Board Composition and Committee Existence	*F*	534	2.60	5.17	0.00	20.00
Board and Committee Practice	*G*	534	9.27	2.74	2.00	16.92
Disclosure to Investors	*E*	534	1.16	3.13	0.00	20.00
Ownership Parity	*P*	525	16.60	2.80	6.40	20.00
Overall Corporate Governance Index	*CGI*	525	33.03	11.26	13.41	86.32

Panel B. Other Variables

	Number of Obs.	No. of "1" values (for dummy variables)	Mean	Median	Standard Deviation	Min	Max
Tobin's *q*	533	--	0.85	0.81	0.28	0.32	3.04
Market-to-Book Ratio	527	--	0.84	0.50	1.64	0.06	21.61
Market-to-Sales Ratio	533	--	1.73	1.01	6.68	0.02	149.92
Market Value of Common Stock	534	--	359.45	41.33	1869.45	2.01	29038.07
Book Value of Common Stock	533	--	433.72	86.75	1797.82	-121.37	31834.55
Book Value of Debt	533	--	1306.27	111.69	6069.46	1.23	77265.05
Book Value of Assets	533	--	1747.52	227.71	7023.29	10.26	81521.57
Debt/Equity Ratio	533	--	6.34	2.47	11.93	0.05	95.52
Years Listed	534	--	15.66	13.00	9.35	0.00	45.00
Sales Growth	511	--	0.14	0.09	0.31	-0.29	5.85
R&D/Sales	534	--	0.01	0.00	0.06	0.00	1.32
Advertising/Sales	534	--	0.01	0.00	0.02	0.00	0.13
Export/Sales	528	--	0.26	0.13	0.30	0.00	1.00
Market Share	533	--	0.06	0.01	0.13	0.00	1.00
Market Concentration	534	--	0.15	0.12	0.13	0.05	1.00
Share Turnover	525	--	10.01	5.86	14.70	0.23	238.79
Foreign Ownership	529	--	0.07	0.01	0.13	0.00	0.86
ADR (Level 1) Dummy	534	10	0.02	0	0.14	0	1
ADR (Level 2/3) Dummy	534	6	0.01	0	0.11	0	1
MSCI Index Dummy	534	65	0.12	0	0.33	0	1
Asset Size Dummy	533	67	0.13	0	0.33	0	1
Bank Dummy	534	12	0.02	0	0.15	0	1
Chaebol30 Dummy	534	110	0.21	0	0.40	0	1
Sole Ownership	525	--	19.67	15.94	14.42	0.14	89.76
CLSA Index Score	19	--	46.26	44.10	5.61	38.00	57.90
S&P Index Score	33	--	4.97	5.00	1.40	1.00	7.00

Panel C: Correlation Matrix of Selected Variables

Statistically significant correlations (at 5% level or better) are shown in **boldface**.

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
[1] *CGI*	**1.00**																					
[2] Tobin's *q*	**0.26**	1.00																				
[3] Market/Book Ratio	**0.12**	**0.56**	1.00																			
[4] Market/Sales Ratio	**0.42**	0.07	0.03	1.00																		
[5] Debt/Equity Ratio	**0.24**	0.06	0.04	**0.22**	1.00																	
[6] ln (assets)	**0.63**	0.00	-0.06	**0.17**	**0.36**	1.00																
[7] ln(years listed)	0.03	**-0.14**	-0.05	-0.02	**0.17**	**0.19**	1.00															
[8] Sales Growth (%)	**0.11**	**0.10**	0.02	-0.01	-0.07	0.08	-0.05	1.00														
[9] R&D/Sales	-0.01	0.04	0.01	-0.02	-0.05	-0.06	-0.03	0.00	1.00													
[10] Advertising/Sales	-0.05	0.08	0.07	-0.03	**-0.10**	-0.06	**0.12**	-0.05	0.02	1.00												
[11] Exports/Sales	0.01	0.01	0.03	**-0.20**	**-0.12**	-0.05	**-0.09**	-0.01	0.08	**-0.23**	1.00											
[12] Market Share	**0.35**	**0.10**	0.00	-0.01	0.05	**0.44**	0.01	**0.15**	-0.02	0.00	0.04	1.00										
[13] Market Concentration	**0.14**	**0.10**	0.02	-0.03	0.02	**0.12**	**-0.18**	**0.11**	-0.01	**-0.17**	**0.12**	**0.59**	1.00									
[14] Share Turnover	-0.02	**0.17**	**0.16**	0.03	0.08	**-0.20**	0.07	0.00	0.06	0.01	0.05	0.03	0.02	1.00								
[15] Foreign Ownership	**0.36**	**0.22**	0.04	**0.18**	-0.05	**0.43**	-0.05	**0.09**	-0.02	0.01	**0.09**	**0.22**	0.06	**-0.19**	1.00							
[16] *ADR* (Level 1) Dummy	**0.21**	0.01	-0.01	0.01	0.02	**0.26**	**0.10**	-0.01	0.02	-0.01	**0.10**	**0.12**	0.00	-0.05	**0.27**	1.00						
[17] *ADR* (Level 2/3) Dummy	**0.29**	**0.11**	0.03	0.03	-0.03	**0.26**	-0.08	0.04	0.05	0.02	-0.05	**0.23**	0.07	-0.06	**0.22**	-0.01	1.00					
[18] *MSCI* Index Dummy	**0.39**	**0.16**	0.02	0.02	-0.04	**0.54**	**0.12**	0.09	0.00	0.03	0.05	**0.35**	0.03	**-0.14**	**0.45**	**0.24**	**0.23**	1.00				
[19] Asset Size Dummy	**0.71**	**0.16**	0.07	**0.21**	**0.28**	**0.74**	0.08	0.07	-0.02	-0.07	0.00	**0.37**	**0.14**	**-0.13**	**0.30**	**0.24**	**0.23**	**0.46**	1.00			
[20] Bank Dummy	**0.46**	0.08	0.01	**0.18**	**0.38**	**0.40**	0.04	0.06	-0.03	-0.06	**-0.14**	0.02	-0.04	-0.06	**0.25**	0.07	**0.10**	**0.14**	**0.36**	1.00		
[21] *Chaebol30* Dummy	**0.30**	0.05	-0.01	-0.04	0.04	**0.45**	**0.14**	**0.12**	-0.03	-0.07	0.07	**0.30**	**0.12**	**-0.13**	**0.20**	**0.20**	0.03	**0.29**	**0.39**	-0.01	1.00	
[22] Sole Ownership	0.02	0.04	0.06	0.00	0.01	0.01	**-0.21**	-0.02	-0.01	-0.07	-0.06	-0.05	0.05	**-0.14**	0.06	-0.04	0.08	-0.07	0.00	0.01	0.03	1.00

Panel D. Correlation Matrix for Corporate Governance Index and Subindices

Correlations among our overall corporate governance index *CGI*, each subindex (A, F, G, E, and P), and the *CLSA* governance index and *S&P* disclosure and transparency index (for firms in our index that are also in one or both of these other indices). Sample size varies from 525 to 534 for *CGI* and subindices, and is 19 for the *CLSA* Index and 33 for the *S&P* Index. *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. Statistically significant correlations (at 5% level or better) are shown in **boldface**.

	CGI	*A*	*F*	*G*	*E*	*P*	*CLSA*	*S&P*
CGI	1.00							
Subindex *A*	**0.65*** **	1.00						
Subindex *F*	**0.79*** **	**0.32*** **	1.00					
Subindex *G*	**0.71*** **	**0.39*** **	**0.54*** **	1.00				
Subindex *E*	**0.59*** **	**0.26*** **	**0.29*** **	**0.27*** **	1.00			
Subindex *P*	**0.38*** **	**0.09** **	**0.11** **	**0.13*** **	**0.08***	1.00		
CLSA Index Score	0.24	0.25	0.01	0.36	0.08	0.29	1.00	
S&P Index Score	-0.06	0.04	-0.18	0.21	0.02	-0.22	0.17	1.00

E. Correlation Matrix for Asset Size Dummy, Corporate Governance Index, Subindices, and Individual Governance Elements

	A size	*CGI*	A	F	G	E	P	A1	A2	A3	A4	A5	C1	C2	C4	D1	B1	B2	B3	B4	B5	B6	bd size
asset size	1.00																						
CGI	**0.71**	1.00																					
subindex *A*	**0.32**	**0.65**	1.00																				
subindex *F*	**0.85**	**0.79**	**0.32**	1.00																			
subindex *G*	**0.48**	**0.71**	**0.39**	**0.54**	1.00																		
subindex *E*	**0.35**	**0.59**	**0.26**	**0.29**	**0.27**	1.00																	
subindex *P*	0.05	**0.38**	**0.09**	**0.11**	**0.13**	0.08	1.00																
A1	**0.17**	**0.24**	**0.30**	**0.13**	**0.13**	**0.14**	**0.10**	1.00															
A2	0.08	**0.30**	**0.51**	**0.11**	**0.17**	0.07	0.08	0.07	1.00														
A3	**0.10**	**0.28**	**0.46**	**0.12**	**0.15**	0.07	0.09	-0.01	**0.13**	1.00													
A4	**0.22**	**0.38**	**0.59**	**0.19**	**0.19**	**0.17**	0.02	0.03	**0.10**	**0.10**	1.00												
A5	**0.22**	**0.40**	**0.58**	**0.23**	**0.29**	**0.19**	-0.02	0.01	0.05	-0.08	**0.16**	1.00											
C1	**0.85**	**0.73**	**0.29**	**0.87**	**0.50**	**0.34**	**0.10**	**0.11**	**0.10**	**0.10**	**0.18**	**0.21**	1.00										
C2	**0.49**	**0.56**	**0.27**	**0.61**	**0.37**	**0.28**	**0.10**	**0.26**	**0.16**	**0.14**	0.07	**0.12**	**0.55**	1.00									
C4	**0.52**	**0.53**	**0.19**	**0.74**	**0.35**	**0.09**	**0.12**	0.02	0.06	0.06	**0.17**	**0.13**	**0.49**	**0.17**	1.00								
D1	**0.74**	**0.65**	**0.26**	**0.86**	**0.44**	**0.23**	0.05	0.08	0.06	0.09	**0.16**	**0.23**	**0.65**	**0.38**	**0.54**	1.00							
B1	**0.11**	**0.16**	-0.05	**0.16**	**0.30**	0.02	**0.16**	0.04	0.02	0.02	-0.04	**-0.10**	**0.14**	**0.15**	0.09	**0.12**	1.00						
B2	**0.20**	**0.34**	**0.33**	**0.23**	**0.40**	**0.13**	0.01	0.00	0.07	0.02	**0.18**	**0.43**	**0.24**	**0.13**	**0.18**	**0.16**	-0.04	1.00					
B3	**0.10**	**0.18**	**0.10**	**0.13**	**0.16**	**0.12**	0.02	**0.09**	0.04	0.02	0.08	0.04	**0.14**	**0.18**	0.01	**0.10**	0.05	**0.15**	1.00				
B4	**0.18**	**0.33**	**0.21**	**0.23**	**0.36**	**0.16**	**0.10**	**0.10**	0.08	0.02	0.08	**0.22**	**0.18**	**0.28**	**0.10**	**0.18**	0.07	**0.25**	**0.15**	1.00			
B5	**0.21**	**0.30**	**0.14**	**0.22**	**0.50**	**0.10**	0.06	0.00	**0.09**	0.04	0.06	**0.12**	**0.23**	**0.13**	**0.13**	**0.17**	**0.13**	**0.20**	0.03	**0.14**	1.00		
B6	**0.22**	**0.30**	**0.21**	**0.22**	**0.38**	**0.13**	**0.11**	0.06	**0.17**	**0.14**	0.09	0.07	**0.24**	**0.14**	**0.15**	**0.16**	0.08	0.01	0.04	**0.19**	**0.20**	1.00	
board size	**0.41**	**0.36**	**0.24**	**0.34**	**0.23**	**0.28**	-0.05	**0.16**	**0.09**	**0.14**	0.04	**0.17**	**0.32**	**0.31**	**0.16**	**0.30**	**-0.16**	**0.18**	**0.26**	**0.22**	**0.10**	**0.22**	1.00
C3	**0.25**	**0.30**	**0.14**	**0.22**	**0.21**	**0.26**	**0.12**	**0.12**	0.03	0.03	**0.09**	**0.09**	**0.21**	**0.23**	0.08	**0.19**	-0.06	0.04	0.08	**0.17**	0.08	0.09	**0.25**
C5	**0.18**	**0.18**	0.05	**0.20**	**0.20**	0.08	0.04	0.11	-0.06	0.05	0.03	0.02	**0.16**	0.11	**0.13**	**0.21**	-0.06	-0.04	0.10	0.02	0.01	**0.15**	**0.12**
C6	**0.17**	**0.21**	**0.17**	**0.15**	**0.30**	0.08	-0.03	0.00	0.04	0.06	**0.16**	**0.13**	**0.14**	0.01	**0.15**	**0.14**	0.01	**0.11**	0.06	0.02	-0.08	0.03	0.07
C7	**0.16**	**0.29**	**0.17**	**0.20**	**0.35**	**0.10**	**0.11**	0.03	**0.11**	**0.16**	0.06	0.05	**0.22**	**0.14**	**0.15**	**0.13**	0.07	0.03	0.01	**0.14**	**0.10**	0.05	0.07
C8	**-0.06**	-0.04	-0.02	-0.05	0.08	-0.03	-0.02	0.01	0.02	0.08	-0.03	**-0.09**	-0.07	0.02	-0.03	-0.06	0.02	-0.02	-0.01	0.02	-0.05	0.04	0.04
C9	**0.21**	**0.19**	0.01	**0.19**	**0.32**	0.07	0.08	0.06	0.01	0.08	0.01	-0.08	**0.19**	**0.17**	**0.10**	**0.14**	**0.47**	-0.03	-0.02	0.01	**0.09**	0.01	-0.03
C10	**0.12**	**0.19**	**0.18**	**0.13**	**0.28**	0.06	0.03	0.08	**0.12**	0.04	**0.10**	**0.11**	**0.15**	**0.12**	0.05	**0.11**	-0.01	**0.10**	-0.03	**0.10**	**0.14**	0.02	-0.02
C11	**0.23**	**0.31**	**0.18**	**0.22**	**0.43**	**0.16**	0.03	0.00	**0.09**	0.05	0.08	**0.17**	**0.21**	**0.15**	**0.16**	**0.17**	0.01	**0.14**	0.01	**0.15**	**0.17**	**0.12**	0.04
C12	**0.35**	**0.42**	**0.27**	**0.38**	**0.28**	**0.24**	0.08	**0.19**	0.06	**0.11**	**0.15**	**0.17**	**0.33**	**0.37**	**0.22**	**0.30**	0.08	0.06	**0.13**	**0.10**	**0.11**	0.09	**0.22**
C13	**-0.09**	-0.08	-0.02	-0.07	-0.04	-0.05	-0.06	0.03	0.00	-0.03	-0.02	-0.01	-0.07	0.03	-0.08	-0.07	-0.01	-0.05	0.03	-0.03	-0.08	-0.05	**-0.09**
D2	0.07	0.03	0.01	0.08	-0.03	0.03	-0.03	-0.11	0.02	-0.03	0.16	-0.06	0.09	**-0.23**	**0.27**	.	-0.13	0.05	-0.19	**-0.25**	-0.09	0.09	0.06
D3	**0.25**	**0.32**	**0.18**	**0.26**	**0.51**	0.08	0.04	0.01	0.08	**0.13**	0.06	**0.13**	**0.26**	**0.16**	**0.15**	**0.22**	0.00	**0.17**	0.07	0.06	**0.26**	**0.15**	**0.15**
D4	**0.32**	**0.38**	**0.24**	**0.35**	**0.47**	**0.22**	0.08	0.10	0.01	0.07	**0.22**	0.20	**0.34**	0.14	0.20	**0.33**	-0.13	**0.21**	0.18	0.11	**0.29**	0.18	**0.21**
D5	**0.16**	**0.22**	0.06	**0.19**	**0.35**	0.06	0.05	**0.11**	0.00	-0.06	0.06	0.07	**0.13**	**0.12**	**0.19**	**0.14**	0.04	**0.12**	0.03	0.07	0.03	0.07	**0.10**
D6	0.06	**0.19**	**0.15**	0.09	**0.38**	**0.11**	-0.02	0.09	**0.11**	0.05	-0.02	**0.14**	0.09	**0.15**	0.00	0.06	**-0.11**	0.04	0.00	**0.10**	**0.14**	0.07	**0.11**
D7	**0.43**	**0.46**	**0.16**	**0.46**	**0.64**	**0.22**	-0.01	0.04	0.02	0.11	0.05	**0.16**	**0.41**	**0.22**	**0.34**	**0.45**	0.09	**0.20**	-0.02	**0.19**	**0.21**	**0.19**	**0.20**
D8	**0.12**	**0.15**	0.05	**0.12**	**0.26**	0.06	0.00	0.03	-0.05	0.03	0.03	0.07	**0.10**	0.09	0.07	**0.11**	-0.02	0.03	-0.08	**0.09**	**0.10**	0.03	0.00
D9	0.21	0.18	0.16	0.22	0.19	0.05	-0.04	0.07	0.11	0.14	0.16	-0.02	0.21	0.14	0.11	.	0.09	0.11	0.07	0.11	-0.07	**0.56**	-0.02
D10	**0.10**	**0.18**	**0.10**	0.07	**0.41**	0.08	0.02	0.08	0.06	0.07	0.01	0.05	**0.10**	**0.12**	-0.01	0.03	**0.11**	0.05	0.04	**0.11**	0.06	**0.13**	-0.05
D11	0.16	0.20	0.15	0.13	**0.35**	-0.09	**0.37**	0.17	0.09	0.23	0.03	-0.04	0.08	0.17	-0.07	**0.33**	-0.02	0.00	0.15	0.17	0.06	**0.26**	0.09
E1	**0.22**	**0.34**	**0.17**	**0.14**	**0.16**	**0.61**	0.03	**0.12**	0.07	**0.10**	**0.14**	0.03	**0.19**	**0.13**	-0.02	**0.14**	0.02	0.03	**0.09**	0.03	**0.11**	0.09	**0.16**
E2	**0.24**	**0.47**	**0.25**	**0.23**	**0.22**	**0.78**	0.05	**0.12**	**0.10**	0.02	**0.13**	**0.23**	**0.25**	**0.25**	**0.09**	**0.15**	0.01	**0.14**	0.08	**0.16**	**0.09**	**0.11**	**0.18**
E3	**0.24**	**0.33**	0.06	**0.21**	**0.13**	**0.59**	0.07	0.02	-0.06	0.03	0.05	0.08	**0.23**	**0.16**	**0.13**	**0.16**	0.03	0.06	0.08	**0.09**	-0.01	0.06	**0.28**

	C3	C5	C6	C7	C8	C9	C10	C11	C12	C13	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	E1	E2	E3
C3	1.00																						
C5	0.09	1.00																					
C6	0.05	**0.12**	1.00																				
C7	0.06	-0.07	0.03	1.00																			
C8	-0.03	**-0.22**	-0.06	**0.09**	1.00																		
C9	-0.06	-0.06	0.08	0.05	0.01	1.00																	
C10	**0.09**	**-0.11**	0.01	**0.17**	0.08	0.05	1.00																
C11	0.05	0.08	0.09	**0.09**	**-0.10**	0.03	0.07	1.00															
C12	**0.13**	0.10	-0.03	0.07	-0.07	**0.10**	0.08	0.07	1.00														
C13	-0.03	0.00	0.00	-0.02	-0.01	-0.02	0.04	**-0.12**	-0.05	1.00													
D2	-0.10	.	0.21	-0.17	-0.11	0.15	-0.06	0.02	0.07	-0.15	1.00												
D3	0.00	0.08	**0.13**	0.08	0.03	0.09	**0.11**	**0.14**	**0.12**	0.01	**-0.23**	1.00											
D4	0.06	0.22	0.03	0.12	0.03	-0.01	-0.04	0.07	0.19	0.04	-0.08	**0.33**	1.00										
D5	0.06	0.05	0.01	0.05	-0.08	-0.05	0.04	**0.13**	0.08	-0.04	-0.02	**0.10**	**0.36**	1.00									
D6	0.09	**0.13**	0.12	0.09	-0.04	-0.02	**0.11**	**0.10**	0.09	0.03	-0.13	**0.20**	0.10	**0.11**	1.00								
D7	0.10	0.13	**0.15**	**0.19**	0.03	**0.15**	**0.21**	**0.20**	**0.13**	-0.10	-0.11	**0.43**	0.08	**0.28**	**0.33**	1.00							
D8	0.02	0.01	**0.12**	0.04	0.04	0.06	-0.02	0.08	0.04	-0.05	-0.02	**0.19**	**0.37**	-0.07	0.09	**0.17**	1.00						
D9	-0.06	.	-0.09	-0.06	0.04	0.22	0.09	0.04	0.11	-0.05	0.10	-0.08	-0.10	-0.07	0.07	-0.04	-0.04	1.00					
D10	0.08	0.04	0.05	**0.11**	0.07	0.03	0.06	0.03	0.07	**0.12**	-0.20	**0.15**	0.11	**0.24**	**0.11**	**0.27**	0.08	0.05	1.00				
D11	0.11	.	-0.08	0.23	0.11	-0.12	0.12	0.12	0.06	-0.11	**-0.33**	0.18	**0.24**	0.14	0.07	0.13	0.12	-0.10	0.17	1.00			
E1	**0.10**	0.04	0.07	**0.11**	0.01	0.07	**0.13**	0.08	**0.21**	0.02	0.04	0.03	0.08	-0.03	0.05	0.11	0.03	0.06	0.04	0.03	1.00		
E2	**0.15**	0.03	0.07	0.07	-0.02	0.01	-0.02	**0.13**	**0.20**	-0.07	-0.02	**0.10**	0.20	0.06	**0.12**	**0.13**	**0.11**	-0.05	0.08	-0.12	**0.22**	1.00	
E3	**0.27**	0.10	0.03	0.02	-0.03	0.08	0.04	**0.11**	**0.09**	-0.05	0.07	-0.01	0.12	0.08	0.01	**0.18**	-0.05	0.10	0.01	-0.07	**0.11**	**0.14**	1.00

Table 4, Panel *A*. *OLS* for Corporate Governance Index with Different Control Variables

Ordinary least squares regressions of Tobin's *q* on Corporate Governance Index (*CGI*) with additional control variables added sequentially as shown. 29 observations are identified as outliers and dropped based on a studentized residual obtained from a regression of Tobin's *q* on *CGI* greater than 1.96 or smaller than –1.96. Industry dummy variables are based on 2-digit Korean Standard Industrial Classification codes. *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. *t*-values, based on White's heteroskedasticity-consistent standard errors, are reported in parentheses. Significant results (at 5% level or better) are shown in **boldface**, except for intercept term.

	Tobin's *q*							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Overall Index (*CGI*)	**0.0074*** (7.14)**	**0.0072*** (6.89)**	**0.0061*** (6.01)**	**0.0061*** (6.03)**	**0.0065*** (6.30)**	**0.0059*** (5.31)**		
Ln(assets)	**-0.0282*** (3.61)**	**-0.0256*** (3.30)**	**-0.0327*** (3.52)**	**-0.0393*** (4.05)**	**-0.0493*** (4.85)**		**-0.0477*** (4.41)**	
Ln(years listed)	**-0.0416*** (3.53)**	**-0.0521*** (4.26)**	**-0.0480*** (4.09)**	**-0.0516*** (4.25)**	**-0.0555*** (4.64)**	**-0.0532*** (4.44)**	**-0.0545*** (4.56)**	**-0.0541*** (4.47)**
Debt/Equity Ratio	**0.0022*** (3.28)**	**0.0023*** (3.49)**	**0.0025*** (3.97)**	**0.0026*** (4.25)**	**0.0034*** (5.34)**	**0.0034*** (5.20)**	**0.0033*** (4.63)**	**0.0033*** (4.60)**
Sales Growth		0.0169 (0.70)	0.0076 (0.31)	0.0011 (0.05)	0.0018 (0.07)	0.0042 (0.16)	0.0086 (0.34)	0.0092 (0.36)
R&D/Sales		**0.1454*** (3.53)**	**0.1429*** (3.53)**	**0.1407*** (3.53)**	**0.1294*** (3.54)**	**0.1285*** (3.43)**	**0.1551*** (3.27)**	**0.1542*** (3.20)**
Advertising/Sales		**1.4087*** (2.88)**	**1.3382*** (2.75)**	**1.3742*** (2.79)**	**1.3267*** (2.79)**	**1.3378*** (2.82)**	**1.3818*** (2.90)**	**1.3878*** (2.90)**
Export/Sales		0.0096 (0.27)	-0.0044 (0.12)	-0.0119 (0.34)	-0.0209 (0.59)	-0.0204 (0.58)	-0.0065 (0.18)	-0.0071 (0.20)
Market Share			0.0700 (0.60)	0.0726 (0.63)	0.0230 (0.19)	0.0129 (0.11)	0.0702 (0.59)	0.0619 (0.53)
Market Concentration			0.1456 (1.43)	0.1518 (1.50)	0.1965* (1.91)	0.1893* (1.85)	0.1946* (1.89)	0.1978* (1.93)
Share Turnover			**0.0019*** (4.05)**	**0.0020*** (3.94)**	**0.0019*** (3.79)**	**0.0019*** (3.76)**	**0.0022*** (3.76)**	**0.0022*** (3.71)**
Foreign Ownership			**0.2937*** (3.29)**	**0.3002*** (3.35)**	**0.2775*** (3.20)**	**0.2906*** (3.36)**	**0.3451*** (4.02)**	**0.3413*** (4.00)**
Chaebol30 Dummy				**0.0474** (2.33)**	**0.0414** (2.03)**	0.0366* (1.83)	0.0354* (1.69)	0.0374* (1.71)
Sole Ownership				-0.0003 (0.50)	-0.0002 (0.23)	-0.0001 (0.17)	-0.0001 (0.13)	-0.0001 (0.12)
ADR (Level 1) Dummy					-0.0249 (0.36)	-0.0313 (0.45)	-0.0234 (0.30)	-0.0276 (0.38)
ADR (Level 2/3) Dummy					-0.0924 (1.16)	-0.0930 (1.24)	-0.0371 (0.69)	-0.0501 (0.78)
MSCI Index Dummy					**0.1180*** (4.17)**	**0.1097*** (3.92)**	**0.1018*** (3.45)**	**0.1015*** (3.41)**
Bank Dummy					-0.0839 (1.54)	-0.0995* (1.81)	-0.0038 (0.08)	-0.0221 (0.36)
Asset Size Dummy							**0.1469*** (3.86)**	0.0390 (0.14)
Ln(assets) - Small						**-0.0541*** (4.96)**		**-0.0487*** (4.30)**
Ln(assets) - Large						**-0.0475*** (4.71)**		-0.0355 (1.10)
Intercept Term	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2-digit Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	505	487	487	487	487	487	487	487
Adjusted R-squared	0.1734	0.1961	0.2372	0.2409	0.2619	0.2630	0.2184	0.2170

Table 4, Panel *B.* *OLS* Results for Subindices

Ordinary least squares regressions of Tobin's *q* on *CGI* and each corporate governance subindex (*A*, *F*, *G*, *E*, or *P*). Control variables and sample (*n* = 487) are the same as in our basic *OLS* regression (*Table 4A*, regression (5)). In the regressions in column (1), we replace *CGI* with the indicated subindex, *without* a separate control for the rest of the corporate governance index. The regressions in column (2) add a control variable for a "Reduced Index," which equals the sum of the other four subindices. Thus, in the regression for subindex *A*, the Reduced Index is the sum of subindices *F* + *G* + *E* + *P*; and similarly for the other regressions. The reduced index has a potential range of 0 ~ 80. *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. *t*-values, based on White's heteroskedasticity-consistent standard errors, are reported in parentheses. Significant results (at 5% level or better) are shown in **boldface**.

	Tobin's *q*		
	(1)	(2A)	(2B)
	Regression coefficient for overall index *CGI*, or indicated subindex (substituted for *CGI*)	Regression coefficient for indicated subindex	Regression coefficient for Reduced Index (sum of remaining subindices)
Overall Index (*CGI*)	**0.0065*** (6.30)**		
Shareholder Rights (Subindex *A*)	**0.0065*** (2.77)**	0.0037 (1.61)	**0.0074*** (5.86)**
Board & Committee Structure (Subindex *F*)	**0.0081*** (3.41)**	**0.0060*** (2.64)**	**0.0067*** (5.33)**
Board and Committee Procedure (Subindex *G*)	**0.0110*** (2.84)**	0.0038 (0.92)	**0.0071*** (5.30)**
Disclosure (Subindex *E*)	**0.0102*** (3.46)**	**0.0083*** (2.84)**	**0.0062*** (5.42)**
Ownership Parity (Subindex *P*)	**0.0145*** (4.39)**	**0.0116*** (3.59)**	**0.0055*** (4.68)**

Table 5. OLS Results for Individual Elements of the Corporate Governance Index

Ordinary least squares regression results for individual elements of the corporate governance index. The elements are defined in *Table 1.* Sample firms and control variables are the same as in our basic *OLS* regression (*Table 4A*, regression (5). The columns headed "alone" give the coefficient for each element from a regression without other governance variables. The columns headed "with controls for other subindices and other elements of subindex" give the coefficients for each element from a regression which includes controls for the remainder of the corporate governance index. More specifically, for element *A1*, we include (1) the Reduced Index for the other subindices (Reduced Index = *CGI* - subindex *A*), and (2) a control variable for a Reduced Subindex, consisting of Subindex *A* without element A1. The Reduced Subindex equals the firm's score on a reduced Subindex *A* consisting of elements *A2*, *A3*, *A4*, and *A5*. The governance control variables for other elements are defined similarly. *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. Significant results (at 5% level or better) are shown in **boldface.** *t*-values, based on White's heteroskedasticity-consistent standard errors, are reported in parentheses. Sample sizes are reported in brackets.

	(1)	(2)		(1)	(2)		(1)	(2)
Governance element	Alone	With controls for rest of index	Governance element	Alone	With controls for rest of index	Governance element	Alone	With controls for rest of index
A1	-0.0002	-0.0027	C3	-0.0306	-0.0366	**D3**	**0.0492****	**0.0409****
[487]	(0.01)	(0.07)	[487]	(0.88)	(1.06)	**[445]**	**(2.48)**	**(2.13)**
A2	0.0007	-0.0202	C4	0.0273	0.0095	D4	0.0612	0.0511
[487]	(0.03)	(0.87)	[487]	(0.89)	(0.32)	[84]	(1.23)	(1.00)
A3	0.0207	0.0079	C5	0.0167	0.0114	D5	-0.0044	-0.0087
[465]	(0.84)	(0.35)	293]	(0.54)	(0.40)	[451]	(0.21)	(0.42)
A4	**0.0769*****	**0.0612*****	C6	0.0035	-0.0201	D6	0.0171	0.0134
[487]	**(3.69)**	**(3.11)**	[293]	(0.13)	(0.79)	[372]	(0.82)	(0.68
A5	0.0207	0.0146	C7	**0.0413****	0.0206	D7	0.0125	0.0038
[487]	(1.17)	(0.86)	464]	**(2.33)**	(1.14)	246]	(0.44)	(0.13)
B1	0.0247	0.0107	C8	-0.0274	-0.0164	D8	-0.0044	-0.0085
[444]	(1.33)	(0.60)	[439]	(0.87)	(0.51)	[433]	(0.15)	(-0.31)
B2	0.0203	0.0048	C9	-0.0025	-0.0106	D9	0.1468	0.1100
[487]	(1.20)	(0.29)	[424]	(0.13)	(0.59)	[66]	(1.28)	(0.98)
B3	0.0437	0.0372	C10	0.0191	-0.0025	D10	**0.0375****	0.0294*
[487]	(0.91)	(0.86)	[487]	(0.73)	(0.10)	[449]	**(2.09)**	(1.67)
B4	0.0359	0.0151	C11	0.0217	0.0093	D11	0.1173	0.1513*
[487]	(1.48)	(0.71)	[487]	(1.28)	(0.56)	[70]	(1.27)	(1.71)
B5	0.0071	0.0013	C12	0.0340	-0.0152	E1	**0.1031****	0.0772*
[487]	(0.37)	(0.07)	[487]	(0.67)	(0.34)	[487]	**(2.32)**	(1.76)
B6	0.0264	0.0129	C13	-0.1121	-0.0900	E2	**0.0837*****	**0.0658****
[322]	(1.05)	(0.52)	[487]	(0.99)	(0.98)	[487]	**(2.59)**	**(2.23)**
C1	**0.1456*****	**0.1135*****	D1	**0.0690****	0.0544*	E3	0.0418	0.0516*
[487]	**(4.45)**	**(3.63)**	[487]	**(2.29)**	(1.85)	[454]	(1.34)	(1.66)
C2	**0.0781****	0.0516	D2	-0.0353	-0.1042	**P**	**significant, see *Table 4B* for results**	
[487]	**(1.99)**	(1.39)	[86]	(0.59)	(1.60)			

Table 6. *OLS* Results for Subsamples

Ordinary least squares regressions of Tobin's *q* on Corporate Governance Index (*CGI*) for various subsamples of the 487 firms included in the regressions in Table 4. The overall sample is divided in four ways: banks versus non-banks; top-30 *chaebol* affiliated firms versus non-*chaebol* firms; firms with book value of assets greater than 2 trillion won, versus firms with book value of assets less than 2 trillion won, and manufacturing versus non-manufacturing firms. We cannot run a regression for the bank subsample due to insufficient degrees of freedom. Other control variables are the same as in our basic OLS regression (*Table 4B*, regression (5)), except that regression (1) omits bank dummy, regressions (2) and (3) omit *Chaebol30* dummy, and regression (6) omits industry dummies. Coefficients are omitted for industry dummies, intercept term, and control variables that are insignificant in all regressions. *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. *t*-values, based on White's heteroskedasticity-consistent standard errors, are reported in parentheses. Significant results (at 5% level or better) are shown in **boldface**.

	Tobin's *q*						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Non-Banks	Chaebols	Non-Chaebols	Assets < 2 trillion won	Assets > 2 trillion won	Non-Manufacturing	Manufacturing
Overall Index (CGI)	**0.0066*** **	**0.0078*** **	**0.0062*** **	**0.0056*** **	**0.0072** **	**0.0045*** **	**0.0072*** **
	(6.26)	**(3.31)**	**(5.10)**	**(4.70)**	**(2.46)**	**(2.95)**	**(5.11)**
Ln(assets)	**-0.0506*** **	-0.0304	**-0.0505*** **	**-0.0520*** **	-0.0688	-0.0148	**-0.0601*** **
	(4.81)	(1.42)	**(3.89)**	**(4.17)**	(1.22)	(0.72)	**(4.95)**
Ln(years listed)	**-0.0600*** **	-0.0432	**-0.0603*** **	**-0.0625*** **	-0.0290	-0.0300	**-0.0584*** **
	(4.88)	(1.58)	**(4.38)**	**(4.36)**	(0.72)	(1.43)	**(3.86)**
Debt/Equity Ratio	**0.0037*** **	0.0021	**0.0035*** **	**0.0047*** **	0.0009	**0.0033*** **	**0.0032*** **
	(5.32)	(1.19)	**(4.26)**	**(4.67)**	(0.70)	**(4.18)**	**(3.13)**
R&D/Sales	**0.1272*** **	1.1954	**0.1403*** **	**0.1513*** **	0.0209	-2.2574*	**0.1265*** **
	(3.46)	(0.84)	**(3.55)**	**(3.55)**	(0.01)	(1.73)	**(3.22)**
Advertising/Sales	**1.3184*** **	**5.1092*** **	**1.2330** **	**1.4079*** **	3.6255	2.0151	**1.3287*** **
	(2.75)	**(2.88)**	**(2.43)**	**(2.85)**	(0.88)	(1.00)	**(2.73)**
Market Share	0.0131	-0.1876	0.0427	0.0372	-0.0639	-0.0749	0.1035
	(0.10)	(0.71)	(0.29)	(0.23)	(0.21)	(0.32)	(0.73)
Share Turnover	**0.0019*** **	-0.0030	**0.0021*** **	**0.0020*** **	-0.0054	**0.0021*** **	0.0016
	(3.80)	(1.58)	**(3.89)**	**(3.72)**	(1.41)	**(3.96)**	(1.42)
Foreign Ownership	**0.3154*** **	0.0445	**0.3415*** **	**0.3132*** **	0.2486	0.1371	**0.3458*** **
	(3.30)	(0.23)	**(3.34)**	**(3.02)**	(1.08)	(0.83)	**(3.33)**
Chaebol30 Dummy	0.0418*	0.0000	0.0000	0.0444*	0.0450	0.0473	0.0403
	(1.92)	(.)	(.)	(1.91)	(0.47)	(1.51)	(1.44)
ADR (Level 2/3) Dummy	-0.0654	**0.1886** **	**-0.1921*** **	**-0.2465*** **	0.0873	-0.0072	-0.1150
	(0.71)	**(2.00)**	**(3.75)**	**(5.80)**	(0.54)	(0.07)	(0.93)
MSCI Dummy	**0.1247*** **	**0.1057** **	**0.1157*** **	**0.1028*** **	0.0379	0.0787	**0.1375*** **
	(4.29)	**(2.10)**	**(3.05)**	**(3.03)**	(0.57)	(1.50)	**(3.96)**
Sales Growth	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Export/Sales	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Market Concentration	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sole Ownership	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ADR (Level 1) Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank Dummy	--	Yes	Yes	Yes	Yes	Yes	Yes
Intercept Term	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2-digit Industry Dummies	Yes	Yes	Yes	No	Yes	Yes	Yes
Number of Observations	475	104	383	425	62	145	342
Adjusted R-squared	0.2555	0.2772	0.2511	0.2205	0.1616	0.2464	0.2366

Table 7. Instrument Reliability:

Panel A: Asset Size Dummies and Corporate Governance

To test the reliability of the 2-trillion-won asset size dummy variable as an instrument, we run selected regressions using a family of asset size dummy variables, defined so Asset Size Dummy 1 = 1 if ln(assets) > 3.6 and 0 otherwise; Asset Size Dummy 2 = 1 if ln(assets) >4.6 and 0 otherwise, and so on. The column for "number of firms in size range" indicates the number of firms with a "1" value for the indicated asset size dummy but *not* the next larger asset size dummy. The residual category of small firms (assets < 37 billion won) contains 22 firms. We exclude banks from the sample since we have no theoretical reason to believe that Asset Size Dummy 5 is a valid instrument for banks. If the relationship between corporate governance and asset size reflects a general relationship between firm size and corporate governance plus the impact of legal rules that apply to companies with assets > 2 trillion won, we expect significance for Asset Size Dummy 5 (row shown in italics), for overall Corporate Governance Index (*CG1*), subindex *F*, and perhaps subindex *G*, which capture the areas affected by the relevant legal rules, but no pattern for other asset size dummy variables. Coefficients are omitted for industry dummies, intercept term, and most control variables that are insignificant in regressions (1)-(6). *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. *t*-values, based on White's heteroskedasticity-consistent standard errors, are reported in parentheses. Significant results (at 5% level or better) are in **boldface**.

	Firms in Size Range	(1) *CGI*	(2) Subindex A	(3) Subindex F	(4) Subindex G	(5) Subindex E	(6) Subindex P	(7) Tobin's *q*	(8) Tobin's *q*
Asset Size Dummy 1 (>37 billion won)	114	-1.7595 (1.09)	0.2116 (0.22)	-0.3458 (0.65)	-0.8921 (1.48)	-0.3970 (0.67)	-0.3362 (0.50)	-0.0300 (0.49)	-0.0191 (0.32)
Asset Size Dummy 2 (> 99 billion won)	160	0.5977 (0.43)	0.8445 (1.17)	-0.8536* (1.79)	0.7181 (1.48)	-0.0567 (0.11)	-0.0546 (0.10)	0.0368 (1.01)	0.0331 (0.91)
Asset Size Dummy 3 (> 270 billion won)	107	-0.2587 (0.18)	0.2323 (0.36)	-0.3231 (0.56)	-0.2620 (0.57)	-0.7034 (1.61)	0.7975 (1.50)	**0.0931*** (2.98)**	**0.0948*** (3.08)**
Asset Size Dummy 4 (> 735 billion won)	64	-1.4414 (0.82)	0.0795 (0.10)	-0.5489 (0.81)	-0.5893 (1.01)	-0.4428 (0.84)	0.0601 (0.08)	**0.0827** (2.05)**	**0.0917** (2.43)**
Asset Size Dummy 5 (> 2.00 trillion won)	41	**15.0491*** (6.35)**	0.8655 (0.89)	**10.8815*** (10.23)**	**1.6840** (2.54)**	1.0652 (1.15)	0.5529 (0.75)	**0.1904*** (4.00)**	**0.0972** (2.04)**
Asset Size Dummy 6 (> 5.43 trillion won)	12	-1.3584 (0.49)	-0.8929 (0.78)	-0.2133 (0.20)	0.1577 (0.20)	-0.9296 (0.61)	0.5197 (0.56)	-0.0554 (0.86)	-0.0470 (0.80)
Asset Size Dummy 7 (> 14.77 trillion won)	14	-0.4208 (0.09)	-2.6066 (1.31)	-2.1540 (1.07)	-1.9075 (1.42)	4.8681 (1.50)	1.3793 (1.40)	0.2438* (1.76)	0.2464* (1.82)
CGI									**0.0062*** (5.44)**
Ln(assets)		0.9610 (0.76)	-0.3260 (0.53)	**0.9467** (2.09)**	0.6200 (1.57)	0.5124 (1.17)	-0.7920* (1.67)	**-0.1106*** (3.87)**	**-0.1165*** (4.10)**
Ln (years listed)		-0.0526 (0.09)	-0.4173 (1.57)	-0.0452 (0.22)	0.2463 (1.44)	-0.1172 (0.48)	0.2807 (1.34)	**-0.0577*** (4.50)**	**-0.0573*** (4.43)**
Debt/Equity Ratio		-0.0226 (0.53)	-0.0150 (1.03)	-0.0042 (0.18)	-0.0136 (1.25)	**-0.0225** (2.44)**	**0.0326*** (2.82)**	**0.0035*** (4.86)**	**0.0037*** (5.54)**
R&D/Sales		3.4438 (0.76)	-0.7084 (0.37)	0.1950 (0.22)	**2.1180*** (3.27)**	0.4404 (0.47)	1.3988 (1.29)	0.0894 (1.55)	0.0680 (1.33)
Advertising/Sales		10.8408 (0.63)	-0.4051 (0.05)	14.6725* (1.96)	2.1564 (0.30)	-4.9517 (1.09)	-0.6312 (0.11)	**1.4837*** (3.28)**	**1.4166*** (3.18)**
Export/Sales		2.3145* (1.85)	1.0216 (1.61)	0.8890* (1.95)	0.0357 (0.09)	-0.4929 (1.02)	0.8612* (1.72)	-0.0049 (0.14)	-0.0192 (0.55)
Market Share		8.7874* (1.73)	**5.0776** (2.09)**	0.5151 (0.28)	0.3388 (0.24)	1.7735 (0.75)	1.0824 (0.55)	0.0262 (0.22)	-0.0282 (0.23)
Share Turnover		0.0481 (1.36)	0.0098 (0.88)	0.0096 (0.98)	**0.0161** (2.44)**	0.0008 (0.12)	0.0118 (0.62)	**0.0020*** (3.66)**	**0.0017*** (3.49)**
Foreign Ownership		**8.9161** (2.43)**	2.0263 (1.23)	0.3652 (0.22)	1.2445 (1.07)	2.7071* (1.80)	**2.5730** (2.28)**	**0.3622*** (3.92)**	**0.3070*** (3.28)**
Sole Ownership		-0.0025 (0.10)	**-0.0324*** (3.00)**	-0.0148 (1.39)	-0.0106 (1.40)	-0.0106 (1.16)	**0.0659*** (8.80)**	-0.0003 (0.48)	-0.0003 (0.45)
ADR (Level 1) Dummy		3.5353 (1.26)	0.7208 (0.79)	0.5135 (0.41)	-0.3474 (0.39)	1.2944 (0.69)	**1.3539** (2.27)**	-0.0389 (0.50)	-0.0608 (0.87)
ADR (Level 2/3) Dummy		4.0703	0.7794	3.6080	1.6207	-1.9147	-0.0230	-0.0931	-0.1183

		(0.48)	(0.19)	(1.35)	(1.59)	(0.79)	(0.02)	(0.99)	(1.03)
MSCI Index Dummy		-0.5608	0.9108	**-1.2518****	-0.4841	-0.2449	0.5092	**0.1152*****	**0.1187*****
		(0.37)	(1.24)	**(2.22)**	(0.96)	(0.37)	(1.02)	**(3.60)**	**(3.93)**
Market Concentration		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sales Growth		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Chaebol30 Dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank Dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept Dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2-digit Industry Dummies		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	534	475	475	475	475	475	475	475	475
Adjusted R-squared		0.4799	0.1062	0.6697	0.2101	0.2123	0.1218	0.2260	0.2741

Table 7, Panel B: Difference in Proportion Test for 50% Outside Directors and Existence of Outside Director Nomination and Audit Committees

Proportion (percentage) of firms with assets above and below 2 trillion won who have at least 50% outside directors, an outside director nominating committee, and an audit committee. Sample is the same as in *Table 7A*. Large firms (assets > 2 trillion won) are required to have these governance elements; other firms are not. The less than 100% compliance by large firms is likely due to (i) the firm recently crossed the threshold and has until its next annual shareholder meeting to adjust the composition of its board of directors or create a committee; (ii) four formerly state-owned utilities are exempt from the audit committee and outside director nominating committee requirements, and (iii) financial institutions are subject to special director nomination rules and are exempt from the outside director nominating committee requirement. *t*-test for difference in proportions is shown in parentheses in column (3). *** indicates significance at the 1% level. Statistically significant results in **boldface.**

Governance Element	(1) Small firms (assets < 2 trillion won)	(2) Large firms (assets > 2 trillion won)	(3) Difference: (3) = (2) - (1)
C1 (firm has at least 50% outside directors)	18/466 (3.9%)	65/67 (97.0%)	**93.1%** **(t = 19.64)**
C4 (firm has outside director nomination committee)	33/466 (7.1%)	41/67 (61.2%)	**54.1%** **(*t* = 11.97)**
D1 (firm has audit committee)	32/466 (6.9%)	61/67 (91.0%)	**84.1%** **(t = 16.95)**

Table 8. 2SLS / 3SLS for Overall Index and Subindices *F* and *G*

Panel A. Overall Corporate Governance Index (CGI)

The regression of Tobin's *q* on corporate governance index, *CGI*, is estimated using two-stage (*2SLS*) and three-stage (*3SLS*) least-squares regressions. We exclude banks from the sample since we have theoretical reasons to believe that our instrument is not valid for banks. Asset size dummy (=1 if book value of assets > 2 trillion won, and 0 otherwise) is assumed to be an exogenous variable that is correlated with *CGI* but does not appear in the equation for Tobin's *q*. Equation (1) regresses corporate governance index on asset size dummy plus all other exogenous variables. Equation (2) is estimated with ordinary least-squares, using the fitted value for *CG1* from equation (1). Equations (3) and (4) are estimated using *3SLS*, with ln (years listed) treated as an instrumental variable for Tobin's *q* that is suppressed in estimating *CG1*. Coefficients are omitted for industry dummies, intercept term, and control variables that are insignificant in all regressions. *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. *t*-values, based on White's heteroskedasticity-consistent standard errors, are reported in parentheses. Significant results (at 5% level or better) are in **boldface**.

	Two-Stage Least Squares		Three-Stage Least Squares	
	(1)	(2)	(4)	(3)
	CGI	Tobin's *q*	*CGI*	Tobin's *q*
Instrumented *CGI*		**0.0110*** **		**0.0110*** **
		(4.15)		**(4.37)**
Instrumented Tobin's *q*			3.9707	
			(0.42)	
Ln(assets)	0.8270*	**-0.0496*** **	0.9876	**-0.0496*** **
	(1.87)	**(4.16)**	(1.53)	**(4.12)**
Ln(years listed)	-0.2173	**-0.0523*** **		**-0.0523*** **
	(0.36)	**(4.21)**		**(4.02)**
Debt/Equity Ratio	-0.0231	**0.0032*** **	-0.0348	**0.0032*** **
	(0.57)	**(4.47)**	(0.84)	**(3.80)**
R&D/Sales	5.0140	**0.1122** **	4.3487	0.1122
	(1.02)	**(2.14)**	(0.81)	(0.87)
Advertising/Sales	4.8823	**1.3388*** **	-0.6476	**1.3388*** **
	(0.29)	**(2.71)**	(0.03)	**(2.99)**
Share Turnover	0.0483	**0.0017*** **	0.0395	**0.0017*** **
	(1.44)	**(2.89)**	(1.34)	**(2.78)**
Foreign Ownership	**9.0941** **	**0.3142*** **	7.4479	**0.3142*** **
	(2.55)	**(3.10)**	(1.44)	**(3.62)**
Asset Size Dummy	**15.2408*** **		**14.5729*** **	
	(7.62)		**(6.18)**	
Chaebol30 Dummy	Yes	Yes	Yes	Yes
Sales Growth	Yes	Yes	Yes	Yes
Export/Sales	Yes	Yes	Yes	Yes
Market Share	Yes	Yes	Yes	Yes
Market Concentration	Yes	Yes	Yes	Yes
Sole Ownership	Yes	Yes	Yes	Yes
Intercept Term	Yes	Yes	Yes	Yes
2-digit Industry Dummies	Yes	Yes	Yes	Yes
Number of Observations	475	475	475	475
Adjusted R-squared	0.4773	0.1955		

Panel *B*. Subindices *F* (Board Composition and Committee) and *G* (Board Practice)

The regression of Tobin's *q* on Subindex *F* (Board Composition and Committee) and Subindex *G* (Board Practice) is estimated using *2SLS* and *3SLS* regressions. Sample size and control variables are the same as in *Table 8A*. 2SLS and 3SLS procedure is the same as in Panel A except that asset size dummy is treated as an instrument for Subindex *F* (in regressions (5)-(8)) or *G* (in regressions (9)-(12)) instead of as an instrument for *CGI*. We do not present results for subindices *A*, *E*, or *P* because asset size dummy is not an appropriate instrument for these subindices. Equations (7-8) and (11-12) are estimated using ln (years listed) as an instrumental variable for Tobin's *q*, that is suppressed in estimating Subindex *F* or *G*. The *t*-statistics for the 2SLS regressions for *CGI*, subindex *F*, and subindex *G* in regressions (2), (6), and (10) are identical because they reflect the power of the instrument (asset size dummy), not the power of the instrumented variable. Coefficients are omitted for industry dummies, intercept term, and control variables that are insignificant in all regressions. *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. *t*-values, based on White's heteroskedasticity-consistent standard errors, are reported in parentheses. Significant results (at 5% level or better) are in **boldface**.

	2SLS		*3SLS*		*2SLS*		*3SLS*	
	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Subindex *F*	Tobin's q	Subindex *F*	Tobin's q	Subindex *G*	Tobin's q	Subindex *G*	Tobin's q
Instrumented *CGI*		**0.0153*** **		**0.0153*** **		**0.1206*** **		**0.1206** **
		(4.15)		**(4.27)**		**(4.15)**		**(2.50)**
Instrumented			1.3916				-4.2373	
Tobin's q			(0.39)				(1.29)	
Ln(assets)	0.2552	**-0.0444*** **	0.3115	**-0.0444*** **	**0.5621*** **	**-0.1082*** **	0.3907*	**-0.1082** **
	(1.47)	**(3.93)**	(1.26)	**(3.81)**	**(4.02)**	**(4.72)**	(1.73)	**(2.73)**
Ln(years listed)	-0.0761	**-0.0535*** **		**-0.0535*** **	0.2318	**-0.0827*** **		**-0.0827*** **
	(0.38)	**(4.33)**		**(4.04)**	(1.33)	**(6.29)**		**(3.49)**
Debt/Equity Ratio	0.0035	**0.0029*** **	-0.0006	**0.0029*** **	-0.0110	**0.0043*** **	0.0014	**0.0043*** **
	(0.16)	**(4.01)**	(0.04)	**(3.37)**	(1.10)	**(5.65)**	(0.10)	**(2.72)**
R&D/Sales	0.2725	**0.1634*** **	0.0394	0.1634	**2.4126*** **	-0.1234	3.1225*	-0.1234
	(0.24)	**(3.31)**	(0.02)	(1.24)	**(4.14)**	(1.37)	(1.66)	(0.48)
Advertising/Sales	13.9008*	**1.1800** **	11.9627	**1.1800** **	2.0348	**1.1473** **	7.9358	1.1473
	(1.90)	**(2.38)**	(1.47)	**(2.57)**	(0.27)	**(2.31)**	(1.07)	(1.46)
Share Turnover	0.0074	**0.0021*** **	0.0043	**0.0021*** **	**0.0148** **	0.0005	**0.0242** **	0.0005
	(0.77)	**(3.65)**	(0.38)	**(3.48)**	**(2.27)**	(0.65)	**(2.35)**	(0.35)
Foreign Ownership	0.1146	**0.4128*** **	-0.4624	**0.4128*** **	0.4318	**0.3625*** **	2.1885	**0.3625** **
	(0.07)	**(4.09)**	(0.23)	**(4.80)**	(0.39)	**(3.61)**	(1.21)	**(2.44)**
Asset Size Dummy	**10.9926*** **		**10.7585*** **		**1.3949** **		**2.1076** **	
	(12.79)		**(11.90)**		**(2.55)**		**(2.56)**	
Chaebol30	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sales Growth	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Export/Sales	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Market Share	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mkt. Concentration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sole Ownership	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept Term	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2-digit Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs	475	475	475	475	475	475	475	475
Adj. R-squared	0.6694	0.1955			0.1991	0.1955		

Table 9. Robustness Check: 2SLS / 3SLS for Whole Sample and Other Subsamples

Panel *A.* Whole Sample (Including Banks)

Two-stage (*2SLS*) and three-stage (*3SLS*) least squares regressions of Tobin's *q* on Corporate Governance Index (*CGI*) for the whole sample of 487 firms including 12 banks, which were omitted in *Table 8*). Control variables and sample are otherwise the same as in *Table 8*. Coefficients are omitted for industry dummies, intercept term, and control variables that are insignificant in all regressions. *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. *t*-values, based on White's heteroskedasticity-consistent standard errors, are reported in parentheses. Significant results (at 5% level or better) are shown in **boldface**.

	Two-Stage Least Squares		Three-Stage Least Squares	
	(1)	(2)	(4)	(3)
	CGI	Tobin's q	*CGI*	Tobin's q
Instrumented *CGI*		**0.0111*** **		**0.0111*** **
		(4.32)		**(4.51)**
Instrumented Tobin's *q*			6.0238	
			(0.61)	
Ln(assets)	**0.9955** **	**-0.0504*** **	1.2324*	**-0.0504*** **
	(2.25)	**(4.27)**	(1.92)	**(4.21)**
Ln(years listed)	-0.3103	**-0.0481*** **		**-0.0481*** **
	(0.52)	**(3.98)**		**(3.78)**
Debt/Equity Ratio	-0.0140	**0.0029*** **	-0.0308	**0.0029*** **
	(0.36)	**(4.43)**	(0.76)	**(3.68)**
R&D/Sales	5.1696	**0.1101** **	4.1596	0.1101
	(1.07)	**(2.08)**	(0.77)	(0.85)
Advertising/Sales	4.2417	**1.3521*** **	-4.1878	**1.3521*** **
	(0.25)	**(2.74)**	(0.19)	**(3.04)**
Share Turnover	0.0501	**0.0017*** **	0.0366	**0.0017*** **
	(1.45)	**(2.82)**	(1.21)	**(2.76)**
Foreign Ownership	**9.4798*** **	**0.2795*** **	7.1597	**0.2795*** **
	(2.71)	**(3.08)**	(1.40)	**(3.42)**
Chaebol30 Dummy	-0.2002	0.0315	-0.3767	0.0315
	(0.17)	(1.54)	(0.39)	(1.31)
Asset Size Dummy	**15.2294*** **		**14.2070*** **	
	(7.85)		**(5.95)**	
Sales Growth	Yes	Yes	Yes	Yes
Export/Sales	Yes	Yes	Yes	Yes
Market Share	Yes	Yes	Yes	Yes
Market Concentration	Yes	Yes	Yes	Yes
Sole Ownership	Yes	Yes	Yes	Yes
Intercept Term	Yes	Yes	Yes	Yes
2-digit Industry Dummies	Yes	Yes	Yes	Yes
Number of Observations	487	487	487	487
Adjusted R-squared	0.5924	0.2073		

Panel *B*. *Chaebol* and Non-*Chaebol* Subsamples

Two-stage (*2SLS*) and three-stage (*3SLS*) least squares regressions of Tobin's *q* on Corporate Governance Index (*CGI*) for subsamples of top-30 *chaebol* affiliated firms versus non-*chaebol* firms. The *chaebol* and non-*chaebol* subsamples include banks (12 banks were omitted in *Table 8*). Control variables and sample are otherwise the same as in *Table 9A*. Coefficients are omitted for industry dummies, intercept term, and control variables that are insignificant in all regressions. *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. *t*-values, based on White's heteroskedasticity-consistent standard errors, are reported in parentheses. Significant results (at 5% level or better) are shown in **boldface**.

	Chaebol Firms				Non-*Chaebol* Firms			
	2SLS		3SLS		2SLS		3SLS	
	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	CGI	Tobin's q	CGI	Tobin's q	CGI	Tobin's q	CGI	Tobin's q
Instrumented *CGI*		0.0087		**0.0087****		**0.0115*****		**0.0115*****
		(1.66)		**(2.06)**		**(3.63)**		**(3.37)**
Instrumented Tobin's *q*			-27.0014					
			(0.40)					
Ln(assets)	0.9389	-0.0178	0.6785	-0.0178	0.6406	**-0.0499*****	0.8543	**-0.0499*****
	(0.74)	(0.56)	(0.39)	(0.65)	(1.29)	**(3.73)**	(1.19)	**(3.68)**
Ln(years listed)	0.7350	-0.0336		-0.0336	-0.2842	**-0.0533*****		**-0.0533*****
	(0.46)	(1.20)		(1.18)	(0.44)	**(3.74)**		**(3.67)**
Debt/Equity Ratio	-0.1177	0.0010	-0.1192	0.0010	0.0370	**0.0031*****	0.0194	**0.0031*****
	(1.42)	(0.52)	(1.15)	(0.58)	(0.95)	**(3.49)**	(0.40)	**(3.26)**
R&D/Sales	45.6217	0.9944	83.1537	0.9944	4.3005	**0.1158****	3.4706	0.1158
	(0.81)	(0.79)	(0.66)	(0.89)	(1.03)	**(2.18)**	(0.67)	(0.88)
Advertising/Sales	**-206.854****	**4.5489****	-132.4561	**4.5489****	16.1367	**1.2282****	9.0383	**1.2282*****
	(2.47)	**(2.17)**	(0.65)	**(2.13)**	(0.90)	**(2.32)**	(0.42)	**(2.60)**
Share Turnover	-0.0673	-0.0033	-0.1717	-0.0033	0.0480	**0.0020*****	0.0353	**0.0020*****
	(0.70)	(1.46)	(0.60)	(1.38)	(1.39)	**(2.94)**	(1.14)	**(3.02)**
Foreign Ownership	**19.6470*****	0.0827	26.4801	0.0827	7.4764*	**0.3560*****	5.2573	**0.3560*****
	(3.11)	(0.36)	(1.40)	(0.55)	(1.86)	**(3.34)**	(0.89)	**(3.60)**
Asset Size Dummy	**12.4581*****		15.3748*		**20.3766*****		**19.2002*****	
	(4.31)		(1.95)		**(5.80)**		**(5.14)**	
Sales Growth	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Export/Sales	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Market Share	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Market Concentration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sole Ownership	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept Term	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2-digit Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	104	104	104	104	383	383	383	383
Adjusted R-squared	0.5628	0.1499			0.5668	0.2157		

Table 10. Robustness Check: Different Corporate Governance and Firm Performance Variables

Coefficients on corporate governance index and subindices in ordinary least squares (*OLS*), two-stage (*2SLS*) and three-stage (*3SLS*) regressions of Tobin's *q*, market/book ratio, and market/sales ratio. The *OLS* regressions for *CGI* and subindices use the same control variables as our basic *OLS* regressions (*Table 4A*, regression (5) and *Table 4B*, column (1), respectively). The *2SLS* and *3SLS* regressions use the same sample and instrumental variables as in *Table 8*: asset size dummy at 2 trillion won as instrument for *CGI* in *2SLS* and *3SLS*, and ln(years listed) as an instrument for Tobin's *q*, market/book, and market/sales) and control variables in *3SLS*. Observations are identified as outliers if a studentized residual obtained from a regression of the dependent variable (Tobin's *q*, market/book, or market/sales) on the corporate governance index is greater than 1.96 or smaller than –1.96. Sample size is in brackets. Sample sizes vary slightly due to data availability, differences in number of outliers, and exclusion for market/book regressions of 6 firms with negative book value of common stock. *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. *t*-values, based on White's heteroskedasticity-consistent standard errors, are reported in parentheses. Significant results (at 5% level or better) are shown in **boldface**.

	Ordinary Least Squares (*OLS*)			Two-Stage Least Squares (*2SLS*)			Three-Stage Least Squares (*3SLS*)		
	Tobin's *q*	Market/Book	Market/Sales	Tobin's *q*	Market/Book	Market/Sales	Tobin's *q*	Market/Book	Market/Sales
CGI	**0.0065*** (6.30) [487]**	**0.0131*** (4.66) [491]**	**0.0150*** (5.18) [486]**	**0.0110*** (4.15) [475]**	**0.0278*** (3.93) [479]**	**0.0220*** (2.81) [484]**	**0.0110*** (4.37) [475]**	**0.0278*** (4.36) [479]**	**0.0220*** (3.30) [484]**
Shareholder Rights (Subindex *A*)	**0.0065*** (2.77) [487]**	0.0085 (1.33) [491]	0.0128* (1.74) [486]	**0.3338*** (4.15) [475]**	**0.7443*** (3.93) [479]**	**0.6744*** (2.81) [484]**	0.3338 (0.72) [475]	0.7443 (0.83) [479]	0.6744 (0.69) [484]
Board and Committee Structure (Subindex *F*)	**0.0081*** (3.41) [487]**	**0.0210*** (2.63) [491]**	**0.0305*** (4.61) [486]**	**0.0153*** (4.15) [475]**	**0.0382*** (3.93) [479]**	**0.0300*** (2.81) [484]**	**0.0153*** (4.27) [475]**	**0.0382*** (4.39) [479]**	**0.0300*** (3.30) [484]**
Board and Committee Procedure (Subindex *G*)	**0.0110*** (2.84) [487]**	**0.0252*** (2.65) [491]**	**0.0219** (2.52) [486]**	**0.1206*** (4.15) [475]**	**0.3053*** (3.93) [479]**	**0.2543*** (2.81) [484]**	**0.1206** (2.50) [475]**	**0.3053** (2.54) [479]**	**0.2543** (2.15) [484]**
Disclosure (Subindex *E*)	**0.0102*** (3.46) [487]**	**0.0220*** (3.21) [491]**	0.0124 (1.60) [486]	**0.0970*** (4.15) [475]**	**0.2683*** (3.93) [479]**	**0.2048*** (2.81) [484]**	**0.0970*** (2.59) [475]**	**0.2683** (2.44) [479]**	**0.2048** (2.15) [484]**
Ownership Parity (Subindex *P)*	**0.0145*** (4.39) [487]**	**0.0209** (2.36) [491]**	**0.0267*** (2.72) [486]**	**0.2730*** (4.15) [475]**	**0.7214*** (3.93) [479]**	**0.5406*** (2.81) [484]**	0.2730 (1.11) [475]	0.7214 (1.10) [479]	0.5406 (1.09) [484]

Table 11. Effect of Functional Form of Asset Size Control

Panel A: *OLS* for Tobin's *q* with Different Functional Forms for Firm Size

Ordinary least squares regressions of Tobin's *q* on Corporate Governance Index (*CGI*), with control variables for various powers of ln(assets). Control variables and sample are otherwise the same as in our basic *OLS* regression (*Table 4A*, regression (5)). Regression (2) is the same as our basic *OLS* regression. Coefficients are omitted for industry dummies, intercept term, and control variables that are insignificant in all regressions. *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. *t*-values, based on White's heteroskedasticity-consistent standard errors, are reported in parentheses. Significant results (at 5% level or better) are shown in **boldface**.

	Tobin's *q*			
	(1)	(2)	(3)	(4)
Overall Index (*CGI*)	**0.0065*** **	**0.0059*** **	**0.0056*** **	**0.0059*** **
	(6.30)	**(5.58)**	**(5.33)**	**(5.44)**
Ln(assets)	**-0.0493*** **	**-0.1308*** **	**-0.5555*** **	**-1.4237** **
	(4.85)	**(2.99)**	**(3.35)**	**(2.10)**
$Ln(assets)^2$		**0.0070** **	**0.0751*** **	0.2845*
		(1.97)	**(2.97)**	(1.82)
$Ln(assets)^3$			**-0.0034*** **	-0.0248
			(2.77)	(1.61)
$Ln(assets)^4$				0.0008
				(1.44)
Ln(years listed)	**-0.0555*** **	**-0.0520*** **	**-0.0516*** **	**-0.0537*** **
	(4.64)	**(4.32)**	**(4.26)**	**(4.42)**
Debt/Equity Ratio	**0.0034*** **	**0.0035*** **	**0.0032*** **	**0.0033*** **
	(5.34)	**(5.36)**	**(5.07)**	**(5.17)**
R&D/Sales	**0.1294*** **	**0.1121*** **	0.0761*	0.0587
	(3.54)	**(2.78)**	(1.77)	(1.30)
Advertising/Sales	**1.3267*** **	**1.3940*** **	**1.4201*** **	**1.4360*** **
	(2.79)	**(2.96)**	**(3.11)**	**(3.17)**
Market Concentration	0.1965*	**0.2070** **	0.2040*	**0.2166** **
	(1.91)	**(1.99)**	(1.95)	**(2.05)**
Share Turnover	**0.0019*** **	**0.0018*** **	**0.0018*** **	**0.0018*** **
	(3.79)	**(3.61)**	**(3.82)**	**(3.89)**
Foreign Ownership	**0.2775*** **	**0.2707*** **	**0.2885*** **	**0.2801*** **
	(3.20)	**(3.17)**	**(3.41)**	**(3.28)**
Chaebol30 Dummy	**0.0414** **	**0.0403** **	0.0192	0.0215
	(2.03)	**(1.98)**	(0.94)	(1.07)
MSCI Index Dummy	**0.1180*** **	**0.1034*** **	**0.0895*** **	**0.0909*** **
	(4.17)	**(3.58)**	**(3.12)**	**(3.21)**
Sales Growth	Yes	Yes	Yes	Yes
Exports/Sales	Yes	Yes	Yes	Yes
Market Share	Yes	Yes	Yes	Yes
Sole Ownership	Yes	Yes	Yes	Yes
ADR (Level 1) Dummy	Yes	Yes	Yes	Yes
ADR (Level 2/3) Dummy	Yes	Yes	Yes	Yes
Bank Dummy	Yes	Yes	Yes	Yes
Intercept Term	Yes	Yes	Yes	Yes
2-digit Industry Dummies	Yes	Yes	Yes	Yes
Observations	487	487	487	487
Adjusted R-squared	0.2619	0.2674	0.2774	0.2789

Panel B: *OLS* for *CGI* with Different Functional Forms for Firm Size

Ordinary least squares regressions of Corporate Governance Index (*CGI*) on asset size dummy, with control variables for various powers of ln(assets). Control variables and sample are otherwise the same as in *Table 8 A*. Regression (2) is the same as *Table 8A*, regression (1). Coefficients are omitted for industry dummies, intercept term, and control variables that are insignificant in all regressions. *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. *t*-values, based on White's heteroskedasticity-consistent standard errors, are reported in parentheses. Significant results (at 5% level or better) are shown in **boldface.**

	Corporate Governance Index (*CGI*)			
	(1)	(2)	(3)	(4)
Asset Size Dummy	**15.2408*** **	**13.6412*** **	**13.8648*** **	**14.5832*** **
	(7.62)	**(5.81)**	**(5.85)**	**(5.22)**
Ln(assets)	0.8270*	-1.8723	2.5289	-16.9523
	(1.87)	(1.03)	(0.34)	(0.58)
$Ln(assets)^2$		0.2463	-0.4670	4.4086
		(1.53)	(0.39)	(0.60)
$Ln(assets)^3$			0.0362	-0.4803
			(0.62)	(0.61)
$Ln(assets)^4$				0.0195
				(0.66)
Market Share	**10.9674** **	8.6491*	8.4876*	8.4602
	(2.25)	(1.70)	(1.65)	(1.64)
Foreign Ownership	**9.0941** **	**8.0931** **	**8.0119** **	**8.1247** **
	(2.55)	**(2.23)**	**(2.21)**	**(2.23)**
Ln(years listed)	Yes	Yes	Yes	Yes
Sales Growth	Yes	Yes	Yes	Yes
Exports/Sales	Yes	Yes	Yes	Yes
R&D/Sales	Yes	Yes	Yes	Yes
Advertising/Sales	Yes	Yes	Yes	Yes
Market Concentration	Yes	Yes	Yes	Yes
Sole Ownership	Yes	Yes	Yes	Yes
Chaebol30 Dummy	Yes	Yes	Yes	Yes
Share Turnover	Yes	Yes	Yes	Yes
ADR (Level 1) Dummy	Yes	Yes	Yes	Yes
ADR (Level 2/3) Dummy	Yes	Yes	Yes	Yes
MSCI Index Dummy	Yes	Yes	Yes	Yes
Debt/Equity Ratio	Yes	Yes	Yes	Yes
Intercept Term	Yes	Yes	Yes	Yes
2-digit Industry Dummies	Yes	Yes	Yes	Yes
Observations	475	475	475	475
Adjusted R-squared	0.4773	0.4784	0.4776	0.4768

Panel C: *2SLS* with Different Functional Forms for Firm Size

Second-stage of two stage least squares (*2SLS*) regressions, similar to *Table 8A*, except for variation in the control variables for powers of ln(assets). Control variables and sample are otherwise the same as in *Table 8, Panel A*. Regression (2) is the same as *Table 8A*, regression (2). Coefficients are omitted for industry dummies, intercept term, and control variables that are insignificant in all regressions. *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. *t*-values, based on White's heteroskedasticity-consistent standard errors, are reported in parentheses. Significant results (at 5% level or better) are shown in **boldface**.

	Tobin's *q*			
	(1)	(2)	(3)	(4)
Instrumented *CGI*	**0.0110*** **	0.0072*	0.0052	**0.0077** **
	(4.15)	(1.96)	(1.47)	**(2.01)**
Ln(assets)	**-0.0496*** **	**-0.1445** **	**-0.7025*** **	**-1.6630** **
	(4.16)	**(2.24)**	**(3.50)**	**(2.05)**
$Ln(assets)^2$		0.0089	**0.0993*** **	0.3392*
		(1.50)	**(3.11)**	(1.74)
$Ln(assets)^3$			**-0.0046*** **	-0.0299
			(2.78)	(1.49)
$Ln(assets)^4$				0.0010
				(1.29)
Ln(years listed)	**-0.0523*** **	**-0.0516*** **	**-0.0523*** **	**-0.0541*** **
	(4.21)	**(4.09)**	**(4.18)**	**(4.27)**
Debt/Equity Ratio	**0.0032*** **	**0.0032*** **	**0.0031*** **	**0.0031*** **
	(4.47)	**(4.58)**	**(4.53)**	**(4.47)**
R&D/Sales	**0.1122** **	**0.0997** **	0.0722	0.0468
	(2.14)	**(2.00)**	(1.33)	(0.82)
Advertising/Sales	**1.3388*** **	**1.4481*** **	**1.4673*** **	**1.4598*** **
	(2.71)	**(2.93)**	**(3.08)**	**(3.07)**
Market Concentration	-0.0302	-0.0726	-0.0344	-0.0573
	(0.24)	(0.55)	(0.26)	(0.44)
Share Turnover	**0.0017*** **	**0.0018*** **	**0.0019*** **	**0.0018*** **
	(2.89)	**(3.02)**	**(3.43)**	**(3.31)**
Foreign Ownership	**0.3142*** **	**0.3125*** **	**0.3395*** **	**0.3246*** **
	(3.10)	**(3.19)**	**(3.46)**	**(3.29)**
Sales Growth	Yes	Yes	Yes	Yes
Export/Sales	Yes	Yes	Yes	Yes
Market Share	Yes	Yes	Yes	Yes
Sole Ownership	Yes	Yes	Yes	Yes
Bank Dummy	Yes	Yes	Yes	Yes
Chaebol30 Dummy	Yes	Yes	Yes	Yes
Intercept Term	Yes	Yes	Yes	Yes
2-digit Industry Dummies	Yes	Yes	Yes	Yes
Observations	475	475	475	475
Adjusted R-squared	0.1955	0.2041	0.2166	0.2180

Table 12. Corporate Governance and Firm Profitability

OLS regressions of profitability and accounting variables on Corporate Governance Index (*CGI*), with a limited set of control variables (ln(asset size), ln(years listed), debt/equity ratio, sole ownership, and 2-digit industry dummies). The table shows the coefficient on *CGI* for profitability variables using different measures of profit in the numerator (net income, ordinary income (basically net income plus taxes and extraordinary items), *EBIT* (ordinary income plus interest), and *EBITDA* (*EBIT* plus depreciation and amortization expense), and also for sales, capital expenditures, and dividends, with different denominators (sales, book value of assets, book value of common stock, market value of assets, and market value of common stock). Coefficients for control variables are omitted. Sample size is in brackets. Sample sizes vary slightly due to data availability, differences in number of outliers, and exclusion, for regressions with book value of common stock as the denominator, of 6 firms with negative book value of common stock. *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. *t*-values, based on White's heteroskedasticity-consistent standard errors, are reported in parentheses. Significant results (at 5% level or better) are shown in **boldface.**

Panel A: Limited Set of Control Variables

Panel A present results with a limited set of control variables (ln(asset size), ln(years listed), debt/equity ratio, sole ownership, and 2-digit industry dummies).

Denominator	Numerator						
	EBITDA	*EBIT*	Ordinary Income	Net Income	Sales	Capital Expenditures	Dividends
Sales	0.0004	0.0004	-0.0002	0.0005		0.0000	**-0.0097****
	(1.19)	(1.13)	(0.53)	(1.23)		(0.08)	**(2.00)**
	[487]	[493]	[498]	[503]		[506]	[502]
Book Value of Assets	-0.0001	-0.0001	-0.0002	0.0001	-0.0012	-0.0001	-0.0059
	(0.41)	(0.41)	(0.70)	(0.46)	(0.65)	(0.92)	(1.43)
	[494]	[500]	[497]	[500]	[517]	[500]	[510]
Book Value of Common Stock	0.0006	0.0004	-0.0003	-0.0065			-0.0095
	(0.47)	(0.28)	(0.14)	(1.05)			(1.14)
	[513]	[517]	[521]	[521]			[504]
Market Value of Assets	**-0.0008*****	**-0.0008*****	**-0.0009****	-0.0004			**-0.0135*****
	(2.74)	**(2.86)**	**(2.54)**	(1.23)			**(2.96)**
	[489]	**[490]**	**[495]**	[498]			**[512]**
Market Value of Common Stock	**-0.0057*****	**-0.0043****	0.0002	0.0004			**-0.0595*****
	(2.92)	**(2.17)**	(0.08)	(0.22)			**(3.77)**
	[507]	**[514]**	[510]	[512]			**[509]**

Panel B: Full Set of Control Variables

Panel B presents the same regressions as Panel A, except with the full control variables used in our basic *OLS* regression (as in *Table 4A*, regression (5)).

Denominator	numerator						
	EBITDA	EBIT	Ordinary Income	Net Income	Sales	Capital Expenditures	Dividends
Sales	0.0006*	0.0005	-0.0007	0.0000		0.0001	**-0.0123****
	(1.68)	(1.51)	(1.43)	(0.07)		(0.41)	**(2.24)**
	[468]	[474]	[479]	[484]		[488]	**[484]**
Book Value of Assets	0.0000	-0.0000	-0.0003	0.0000	-0.0019	-0.0002	-0.0062
	(0.12)	(0.10)	(0.95)	(0.17)	(1.05)	(1.23)	(1.38)
	[475]	[481]	[478]	[481]	[498]	[482]	[492]
Book Value of Common Stock	0.0006	0.0004	-0.0003	-0.0065			-0.0043
	(0.47)	(0.28)	(0.14)	(1.05)			(0.47)
	[513]	[517]	[521]	[521]			[485]
Market Value of Assets	-0.0006*	**-0.0006****	**-0.0010****	-0.0004			**-0.0130*****
	(1.75)	**(1.98)**	**(2.53)**	(1.31)			**(2.60)**
	[470]	**[471]**	**[476]**	[479]			**[493]**
Market Value of Common Stock	-0.0028	-0.0010	-0.0027	-0.0022			**-0.0488*****
	(1.24)	(0.46)	(1.09)	(0.85)			**(2.81)**
	[488]	[495]	[491]	[493]			**[490]**