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Implied Cost of Equity Capital, Firm Valuation, and Firm Characteristics *

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Abstract. A variety of stakeholders including investors, corporate managers, customers, suppliers, employees, researchers, and government policy makers have long been interested in factors related to corporate valuation. As a subject of research, the causal relations between corporate governance (CG) and the factors influencing corporate valuation have yet to be thoroughly quantified and investigated. This paper is an effort to amend this inadequacy by demonstrating a statistically significant association between CG and firm characteristics. The purpose of this study is to explain the link between CG and firm value by investigating (1) corporate governance index, (2) the implied costs of equity capital (COC), and (3) valuation for companies listed in the Korean stock market. The major research question is whether firms with better CG measures have advantage as they are highly priced through the lower COC when compared to the companies with weaker CG. We investigate CG in five dimensions: (1) investor protection, (2) board of directors, (3) disclosure, (4) auditing, and (5) profit sharing. One important issue addressed in this study regards the exact nature of the relationship between CG measures, firm valuation, and the COC. We have found a positive association between the level of CG, commitment to business ethics, and firm value. In addition, the study reveals that there is a significantly negative association between CG and the COC. We believe the results will help enhance the transparency of capital market through improved CG.

Keywords: Analysts' forecasts, business ethics, corporate governance, cost of capital, valuation,

1. Introduction

Corporate governance (henceforth CG) and corporate governance practices have been recently receiving renewed interest in the global economy partially due to their connection with the scandals marking the beginning of the new millennium and partially because high quality CG is increasingly viewed as an important competitive tool. Besides that, the importance of international corporate environment is further

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heightened by globalization accompanied by growing effort towards global convergence of business standard (e.g, IFRS).

The attention paid to CG and business ethics practices even increases in times of economic difficulties, as we can see now at the time of a global economic crisis. The subprime mortgage meltdown, which originally erupted in the USA and quickly spread to other countries, has led to many unfavorable consequences especially detrimental to emerging economies. With the aim of reducing risk, global investors and financial institutions shifted their attention towards more transparent markets. Their action has resulted in the increase in foreign exchange rates and exodus of capital from previously respected emerging markets including Korea. This development has only served the heighten investors' awareness of corporate governance and transparency issues, bringing them further into public consciousness.

The Korean stock market provides an interesting laboratory in CG studies due to its development in the last decade. Hit by 1997 Asian financial crisis, Korea was forced to adopt a vast economic restructuring programme and undergo a deep corporate governance reform, resulting in a series of steps aiming to improve CG of Korean companies taken within a relatively short period of time. [1] For Korean understanding of corporate environment, the 1997 crisis represented a major milestone since until then Koreans had not seriously considered the importance of CG in the financial market. However, as the lack of transparency and poor CG were identified as the key factors for the high financial risk of the Korean stock market, they could no longer be neglected. CG consequently rose in importance and the adoption of modern CG principles along with 'best practices' has become a major goal of many Korean companies and organizations. Even enhanced by so-called "Korea discount", [2] this focus on CG and governance reform continues until present.

Researchers and practitioners have often reported that the stock market rewards companies with good ethical commitment and CG by valuing them high (Epstein et al., 1994; Baek et al., 2009; Choi and Jung, 2008). Despite prior studies documenting the connection between CG, ethical commitment and valuation, and the studies that have speculated about the causes of the high (low) valuation for the firms with high (low) CG, the causal inference on the CG and its effects on corporate valuation have rarely been investigated.

Considering the existing research background and gaps in current knowledge, our study focuses on the links between CG, business ethics, and company valuation. The major research question is whether firms with better CG measures have advantage over companies with weaker CG, as they are highly priced through the lower COC. We examine

the links between CG and firm value by investigating (1) corporate governance metrics, (2) implied cost of capital, and (3) corporate financial performance and valuation for companies which are listed on the Korean stock market. [3] Furthermore, as CG covers broader area than mere company's management and is closely tied to business ethics, we also investigate the relationship between the CG and commitment to business ethics (BE).

To measure the level of companies' CG, we construct the Corporate Governance Index (CGI) by using data covering five different CG dimensions: (1) investor protection, (2) board of directors, (3) disclosure, (4) auditing, and (5) profit sharing, as provided by the Corporate Governance Service (CGI). The Ethical Commitment Index (ECI) created by Choi and Jung (2008) is used to capture the level of companies' ethical commitment.

The connection between company value in the capital (stock) market and the level of CG ad business ethics has been supported by ample anecdotal evidence. Anecdotal evidence also suggests that companies with poor CG are undervalued and that high quality CG leads to companies'better performance in the stock market (Epstein et al., 1994; Baek et al., 2009; Choi and Jung, 2008). One possible explanation for this fact is that the major valuation benefit stems from reduced firm specific risk (i.e. lower cost of equity capital). As well known from the literature, the COC represents a key variable in corporate valuation because it directly affects the present value of future economic benefits (Penman, 2006). A theoretical association among firm value, the COC and future financial performance is expressed in a valuation equation (1).The equation shows that firm value is positively linked to corporate financial performance (CFP) and negatively to the COC. On average, *ceteris paribus*, higher (lower) firm value is derived from lower (higher) COC.

$$\text{Firm Value} \equiv \sum_{t=1}^{\infty} \frac{\text{Cash flows}_t}{(1+COC)^t}. \tag{1}$$

According to previous studies, a lower firm specific risk leading to the decrease in the COC and thus resulting in higher firm value is the main source of the valuation benefits related to improved business ethics. We apply the same logic to CG and assume that better governed companies enjoy lower level of risk reflected by lower COC, yielding higher firm value. We expect the level of CG to be negatively associated with the COC, which would imply positive effects of better CG on firm value, and we also predict the existence of a positive relationship between the CG and BE.

Despite the fact that CG is an important factor in firm valuation, the impact of good CG on company's performance in the stock market still remains vague. Up to date, most studies investigating factors influencing company value have focused on the individual indicators with less attention paid to their mutual links. Moreover, until now, there has been no study looking at the association between CG and company valuation through the COC, and there has been no research dedicated to the connections between CG and BE. As a result, the information concerning the manner in which CG is related to the firm value is very limited, and the connection between CG and the COC still remains ambiguous, leaving it unclear whether the quality of CG really is reflected in the COC and affects firm valuation.

In view of that, our study represents the first attempt to examine these relationships and as such will no doubt prove beneficial for individual as well as institutional market participants and any other parties interested in the company valuation and CG in the Korean market or in general. If a substantially positive relationship between the quality of CG, BE, and firm valuation through the COC can be discovered and well documented, it will help improve the transparency of capital market due to the increase in the level of corporate governance and corporate ethical commitment.

In summary, we have found a significant association between CG and the COC. Initial results provide strong evidence that the COC decreases with the corporate governance and ethical commitment level (i.e. with better CG and companies' higher ethical commitment) while controlling for other firm characteristics. Consistent with anecdotal evidence, the study also reveals a positive relationship between the level of CG, commitment to business ethics, and firm value.

2. Prior Studies

Despite the importance of the topic and growing need for research which would help identify the factors leading to an increased company valuation in the stock market, the linkages between the CG, company valuation, or BE have not been thoroughly examined yet. Existing studies have documented that CG plays an important role in assessing the performance and value of a company and that high quality management is generally perceived as a positive signal by investors, who are willing to pay a premium for well-governed companies.

In the past, most studies largely focused on corporate valuation (CV) and the way it is related to various factors such as corporate financial performance (CFP), corporate social performance (CSP) or,

to a smaller extent, business ethics. The impact of BE or CG in the capital market and their association to CV has only become a significant research topic in recent decades.

For many years, literature has been using interchangeably the terms CFP and CV (Choi and Jung, 2008). Our study in among the first to explicitly differentiate between the two concepts, which are analytically and conceptually discrete. Relying on measures from financial statements, *Corporate financial performance* reflects the past and contemporaneous performance of a business. In contrast, its measures being related to the stock price in capital market, *Corporate valuation* represents company's performance in the stock market and largely depends on the perceptions of external stakeholders such as security analysts, individual, and institutional investors. As financial and accounting theories show, CV is also determined on the basis of future performance and, unlike CFP, comprises more information including the market's expectations of the company's future profitability.

It is a common assumption that CSP or CV are positively linked to CG and prior studies have documented that CG is an important factor influencing market value (La Porta et al., 2002; Pinkowitz et al., 2006; Baek et al., 2009; Bebchuk et al., 2009). Similarly, (Vogel, 1991; Verschoor, 1998; Verschoor, 1999; van der Merwe et al., 2003; Kulshreshtha, 2005; Choi and Jung, 2008; Jo and Kim, 2008) have reported the association between CFP or CV and company's commitment to business ethics, and a relationship between CG and CSP has also been found (Bonn and Fisher, 2005; Jamali et al., 2008). Studies investigating the link of various factors to CSP have shown a positive association between CSP and the level of disclosure (Gelb and Strawser, 2001b), and a positive relationship between CSP and ethical reporting (Jo and Kim, 2008). These studies have also suggested that the improvement of these factors leads to the decrease in the COC. Despite that, there have only been few studies examining the relationship between CG and BE (**?**; Mizuo, 1998) and no study which would use the COC as the connecting factor between the quality of CG and firm valuation. The research in this area thus remains weak calling for more studies to be conducted in the future.

One of the major tasks of any research dealing with the topic of CG or CV is the identification of their mutual links. Numerous papers have examined the connections between corporate valuation and various business phenomena through the COC as the COC is a key factor in assessing the value of a company in the stock market. Apart from others, one line of research has also focused on how the COC is affected by the availability of information. Representatives of this line of thought argue that transparent disclosure can be used as a proxy for

information. According to them, more and easily available information attract large investors and lead to the improvement of company's liquidity resulting in the reduction of the COC (Diamond and Verrecchia, 1991). (Botosan, 1997; Botosan and Plumlee, 2002; Hail, 2002; Easley and O'Hara, 2004; Cheng et al., 2006) suggest that better disclosure reduces information asymmetry, which is again reflected by lower COC. In line with this reasoning, a negative association between CG and the COC through the decrease in risk for better-governed companies has also been discovered (Ashbaugh-Skaife et al., 2005; Cheng et al., 2006; Byun et al., 2008).

3. Research Design

To investigate the relationship between CG and company valuation and the association of CG to business ethics, we are going to need a few methodological tools. First, to explain our reasoning and assumptions regarding the links and the direction of the associations, we are going to use the conceptual model referring to a good management theory and a slack resource hypothesis as outlined below. Furthermore, we are going to need reliable measures to assess the quality of companies' CG and ethical commitment, for which we are going to employ two indexes. Using the data provided by the Corporate Governance Service (CGS), we are going to newly construct the Corporate Governance Index (CGI). To express the level of firms' ethical behavior, we are going to use the Ethical Commitment Index developed by Choi and Jung (2008). Another crucial part of our analysis is then represented by the estimation of the COC, for which we are going to use a reverse-engineered valuation model of Ohlson and Juetter-Nauroth and a modified PEG ratio model by Easton. After that, we are going to conduct statistical analysis to identify mutual relationship among the variables. More detailed methodological description of the key research components and analytical tools follows.

3.1. Conceptual Model

The causal relationships among corporate governance, business ethics and firm factors and their impact on firm valuation are shown in figure 1. The figure illustrates two main lines of thought related to the causality among the CG, BE and corporate valuation. The downward path of the figure reflects *good management* theory and the associations it predicts. The theory argues that corporate ethical environment is linked to the quality of CG in a spiral fashion. Strong corporate culture

enhances the quality of CG (Diacon and Ennew, 1996) and strong CG in turn stimulates ethical environment in corporations (Mizuo, 1998). High quality CG then leads to better management and thus can have positive impact on companies through the provision of high quality information, reduction of agency problem, costs and firm specific risk, the enhancement of ethical commitment and/or corporate social performance (Neville et al., 2005; Money and Schepers, 2007; Jamali et al., 2008) and market reputation (Neville et al., 2005), and the improved chance to recruit better employees. However, it is important to keep in mind that the effects of corporate governance on a company's financial output might exhibit a longer lead-lag cycle, which is already incorporated in the stock price (Preston and O'Bannon, 1997). Hence, a significant impact of CG on contemporaneous financial performance is not apparent. The theory also claims that better CG allows a company to achieve higher financial performance in the long-run. High long-term growth prospects and a low required rate of return (COC) are simultaneously linked to high corporate value in the stock market. We expect the quality of CG to be negatively correlated with the COC, and predict a positive association between the CG and companies' business ethics.

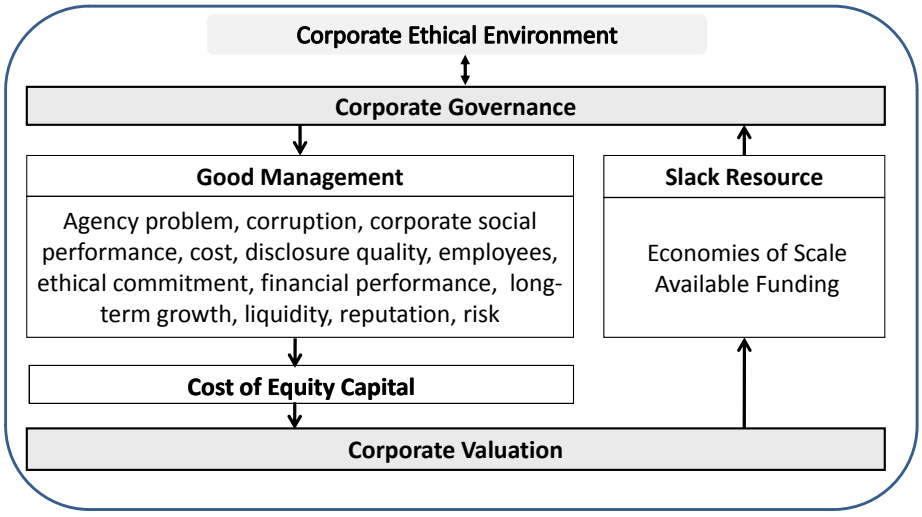

Figure 1. Corporate Governance, Cost of Capital, and Corporate Valuation relationship

Upward paths of the figure illustrate the relationships supporting *slack resource* hypothesis. According to this theory, firms with high market value have slack economic resources to invest in the improve-

ment of CG and ethical environment of companies, which in turn leads to further positive benefits including even higher market capitalization, resulting in a virtuous cycle [4].

3.2. Corporate Governance Index and Ethical Commitment Index

Corporate governance index (CGI) and ethical commitment index (ECI) are the key variables necessary for the investigation of the associations among the CG, company valuation and business ethics. Constructing a composite index for the assessment of corporate governance is challenging as quantitative representation of corporate governance attributes may imply various difficulties; the creation of the CGI thus represents a crucial part of any study examining this connection. For the purpose of our research, we construct the CGI based on the governance assessment results provided by Corporate Governance Service (CGS), which annually conducts a direct assessment of various criteria related to corporate governance in Korea. The governance assessment was conducted in two phases. In the first stage, publicly available information including corporate reports and disclosure documents provided by corporate websites, government, the Korea Listed Companies Association, and other organizations were collected. In the second stage, survey questionnaires, which have proved to be a reliable method to measure the perceptions of corporate managers regarding the system of internal organization employed within their respective companies, were prepared to assess corporate corporate governance.

The data we obtained enabled us to create an index that quantitatively captures the quality of CG and makes it possible to express various degrees of CG level. The total scores in each dimension were converted to a percentage scale and this scale was used as a proxy for the corporate governance index (CGI).

The CGI is composed of ninety nine elements falling in five different categories of measures that reflect the extent to which a corporate's governance system is well-functioning: (1) protection of shareholder interest (PSI); (2) board of directors (BOD); (3) disclosure (DC); (4) auditing body (AB); and (5) distribution of operational proceeds (DPO). In this study, equally weighted corporate governance index is used to avoid subjective measurement error (Bebchuk et al., 2009), i.e. each of the five provisions employed in the CGI construction is given equal weight.

The first dimension comprises the criteria regarding investor protection along with ownership structure. According to prior studies, blockholders and shareholders dispersion are important to corporate

governance system (Jensen, 1993; Shleifer and Vishny, 1997), and shareholders' intervention to the management is a significant factor related to investor protection. To measure the level of shareholders protection, Bebchuk, Cohen and Ferrill (2009) developed the entrenchment index (E Index), which was based on six provisions including staggered boards. Their results showed that the E Index is monotonically negatively associated with firm value.

Independence of the board of directors is an important attribute to a well-functioning CG system (Beasley, 1996; Klein, 2002; Choi et al., 2007; Baek et al., 2009). For instance, Beasley (1996) finds that the higher the ratio of outside directors, the more independent the board of directors.

Disclosure level is another crucial element for a sound governance system since corporate information available to outsiders alleviates information asymmetry between managers and investors. Prior literature documents that a high level of corporate disclosure reduces agency costs, and, in turn, increases firm value (Welker, 1995; Lang and Lundholm, 1996; Sengupta, 1998; Healy et al., 1999; Leuz and Verrecchia, 2000; Botosan and Harris, 2000; Botosan and Plumlee, 2002; Baek et al., 2009).

Audit quality plays a significant role as a corporate governance device (Menon and Williams, 1994; Willenborg, 1999; Sainty et al., 2002; Ashbaugh and Warfield, 2003; Anderson et al., 2004; Krishnan and Ye, 2005) and is also considered to be one of the key tools to ensure the trust of market participants in an audited company.

Distribution of profits to shareholders is a fundamental instrument that reduces agency problems between managers and shareholders (Jensen, 1986) and the significance dividend policy bears for the measurement of the level of corporate governance has also been confirmed by existing studies (La Porta et al., 2000; Farinha, 2003; Jiraporn and Ning, 2006; Pinkowitz et al., 2006; Sawicki, 2009).

Prior studies have used various proxies for the surrogate measures of ethical commitment (Verschoor, 1998; Jo and Kim, 2008; Choi and Jung, 2008). This study exploits the relationship between business ethics and the implied cost of equity capital using the Choi and Jung (2008) Ethical Commitment Index (ECI). [5]

3.3. Corporate Financial Performance (CFP) and Corporate Valuation (CV)

Following explicit distinction between corporate financial performance (CFP) and corporate valuation (CV), this study treats these two terms differently. [6]

Financial and corporate valuation variables were culled from prior accounting and financial literature. CFP is measured by accounting numbers including return on assets (ROA). CV was measured using various price variables and accounting ratios including forward price to earnings ratio (P/E), price to book value of equity (P/B), and Tobin's Q ratio (Tobin's Q), which are commonly used to gauge firms' market performance. Security price, the numerator of the P/E and P/B ratios, is based on the expected future earnings that market participants pay for (Ohlson, 1995). If market participants expect a higher future performance relative to book value, the P/B will show a higher value by incorporating the market's expectation in the numerator. Tobin's Q also captures the relationship between a company's market and book value of equity. In all cases, the higher the future profitability, the higher the valuation ratios.

Prior studies have documented the potentially compounding effects of firm risk, growth, and/or size. Consequently, several measures comprising debt to market (D/M) ratio, capital asset pricing beta (beta), financial leverage (FLV), market capitalization (MV), and total assets (TA) are tested in the analysis as controlling variables to ensure the reliability of the results.[7] Another well documented fact is that firm risk is negatively correlated with firm value. The risk associated with financial leverage of the firm is measured by D/M and FLV. As the amount of debt in a firm's capital structure increases, so too does the risk the firm takes on. This provides an incentive for corporate managers to act in a manner that meets creditors' expectations of what is socially responsible and ethical (Roberts, 1992). (Modigliani and Miller, 1958; Fama and French, 1992) reports a positive association between the cost of capital and leverage. The capital asset pricing model beta is used to capture firm specific risk related to market volatility. Given that, a negative correlation between beta and the ECI, and a negative correlation between beta and the cost of capital can be expected since a high level of ethical commitment may be indicative of a better managed firm (Gordon and Gordon, 1997; Harris et al., 2003). Total assets (TA) and market capitalization (MV) reflect the size effect of a firm. Prior studies document that larger companies have lower cost of capital due to the increase in availability of information (Botosan, 1997; Botosan and Plumlee, 2002; Barth and Hutton, 2004). Moreover, slack economic resource theories argue that larger companies can afford the outlays required to meet their ethical commitments (Waddock and Graves, 1997).

3.4. Estimation of Implied Cost of Capital

Expanding body of studies have investigated the issues pertaining to the COC and examined the link between the required rate of return and potential factors (Agmon and Findlay, 1982; Damodaran, 2003; Chen et al., 2004; Koedijk and van Dijk, 2004; Sabal, 2004; Daske, 2006; Dargenidou et al., 2006; Hail and Leuz, 2006; He and Kryzanowski, 2007; Choi and Jung, 2008). In line with that, our primary analysis consists in the comparison of the expected rates of return. We estimate the implied costs of capital through reverse-engineered residual earnings model, which was originally used to estimate the equity premium in the U.S. market.

Reverse-engineered valuation models are relatively new method to determine the COC as they have been increasingly employed for this purpose only in the last decade. Prior literature has reverse-engineered the residual earnings model and abnormal earnings growth model for estimating the expected rate of return on equity investment (O'Hanlon and Steele, 2000; Gebhardt et al., 2001; Claus and Thomas, 2001; Easton et al., 2002; Baginski and Wahlen, 2003; Gode and Mohanram, 2003; Easton, 2004; Easton and Monahan, 2005; Ohlson and Juettner-Nauroth, 2005; Easton and Sommers, 2007). A large body of studies have also used the required rates of return developed from the reverse-engineered models to test hypotheses pertaining to the link between the required rates of return and relevant factors that may affect them (Dhaliwal et al., 2005; Daske, 2006; Cheng et al., 2006; Easton and Sommers, 2007).

In our study, we adopt two implied cost of capital models that are commonly used in determining the effects of various phenomena on the cost of capital, the so-called Ohlson and Juettner-Nauroth (2005) model and modified PEG ratio model by Easton (Easton, 2004; Ohlson and Juettner-Nauroth, 2005).[1] The mathematical representation of the models is outlined below.

Ohlson and Juettner-Nauroth (2005) model estimates the cost of equity capital as follows:

$$r_{OJ} \;=\; A + \sqrt{A^2 + \frac{eps_1}{P_0}(g_s - (\gamma - 1))} \tag{2}$$

Modified PEG ratio model by Easton (2004) provides the following way to estimate the COC:

[1] We also estimated the implied cost of capital using different models (**?**). The results were qualitatively similar.

$$r_{PEG} = \sqrt{\frac{eps_2 - eps_1}{P_0}} \tag{3}$$

Where:

$$\begin{aligned}
A &\equiv \frac{1}{2}\left((\gamma - 1) + \frac{dps_1}{P_0}\right) \quad \text{and} \quad g_s = \frac{(eps_2 - eps_1)}{eps_1}; \\
\gamma &= r_f - g_l + 1; \\
\gamma &= \text{Long-term earnings growth rate + 1;} \\
g_s &= \text{Short-term earnings growth rate;} \\
g_l &= \text{Long-term economic growth rate;} \\
r_f &= \text{Yield on 3-year treasury bond;} \\
eps_t &= \text{Analysts' forecast of earnings per share at time } t.
\end{aligned}$$

4. Data and Sample Selection

The financial data for this study were collected from companies listed in the Korean stock market. The sample consists of annual data from the years 2004 to 2008. The companies with non-December fiscal year-end were excluded from the sample. The Korean sample consists of the companies traded either on the KSE (Korea Stock Exchange) or on the KOSDAQ (Korea Securities Dealers Automated Quotation). [8] Measures for the financial variables were taken from financial statements and the stock market at the end of the fiscal year. All per share variables for Korean companies are adjusted for stock splits and stock dividends. Accounting data, including earnings per share, book value, sales, long-term debt, total assets, dividends, T-bond rates, prices, and number of shares were culled from the FnGuide database. Similarly, the analysts' forecasts of earnings and standard deviation of analysts' forecasts were taken from FnGuide database. Earnings forecasts are derived from the last consensus forecasts available in December.

To construct the CGI, we used the data based on the governance assessment results provided by Corporate Governance Service (CGS). The organization annually conducts assessment of 99 criteria related to corporate governance in Korea. The data is provided in five different categories mentioned above (protection of shareholder interest; board of directors; disclosure; auditing body; and distribution of operational proceeds).

While corporate governance index (CGI) proxies the level of corporate governance, the ethical commitment index (ECI) developed by Choi and Jung (2008) is used as a proxy for the commitment to business ethics. A total of 342 usable ethical commitment index were computed from the survey questionnaires returned by publicly traded companies. The candidate firms in the sample were required to have (1) analysts' forecasts of earnings for the next two fiscal years from FnGude (i.e. EPS_t and EPS_{t+1}), (2) positive earnings per share for period t (Gode and Mohanram, 2003; Easton, 2004), and (3) annual accounting data. Application of these requirements yielded a final sample of 105 observations per year after extreme values for the control variables were eliminated (Belsley et al., 2004).

Table II reports the distribution of the industries for the sample companies. To ensure that respondents came from a variety of business backgrounds, the survey was not restricted to a particular industry. Companies in the study were split between manufacturing and non-manufacturing sector.

5. Empirical Results

Table III summarizes Corporate Governance score (CGI) and five provisions that are used to construct it (as previously mentioned, they are protection of shareholder interest (PSI); board of directors (BOD); disclosure (DC); auditing body (AB); and distribution of operational proceeds (DPO)). Table III also shows CGI temporal changes. Consistent with anecdotal evidence, the scores of 4 out of 5 provisions (BOD, DC, AB, and DPO) have increased in recent years. PSI, which has not improved over the period, is the exception of this trend.

A variety of studies demonstrate that firm specific risks affect the implied costs of capital (Gebhardt et al., 2001; Gode and Mohanram, 2003; Botosan and Plumlee, 2005). Table IV presents variable description and descriptive statistics pertaining to firm characteristics and the implied costs of capital estimates. Average values of P/B (1.594.) and forward P/E (15.622) are not lower than the historic average of the U.S. stock market. However, consistent with prior studies, the implied cost of equity capital is higher than that of the U.S. corporations. [9] Mean Tobin's Q is 1.274. Mean value of beta (0.928) is slightly lower than market beta. Mean values for FLV, D/M, Disp, ROA, ROE, and Sales growth are 2.676, 0.325,0.123, 0.058, 0.109 and 0.160 respectively. Mean implied cost of equity from OJ model (PEG model) is 17.4% (15.2%).

Temporal changes of the implied costs of capital are also provided by Table IV. As anecdotal evidence suggests, the COC has been recently

decreasing. As would be expected, the comparison with the cost of capital for the U.S. companies reveals that the COC for Korean companies is significantly higher (Choi, 2009). The r varies from a high of 18.7% in 2004 to a low of 16.0% in 2006. It is obvious from the table that the numbers for 2008 do not fully correspond to the previous trend; for example, in 2008 the COC increased to 17.3% (18.9%) from 16.6% (13.6%) in 2007. This fact is partially caused by the global market meltdown caused by the U.S. subprime crisis. However, the CAPM beta did not decrease significantly over the same period. As for the valuation measures, they show improving pattern over the examined years. For instance, Tobin's Q and P/B increased significantly from 1.033 and 1.084 in 2004 to 1.500 and 2.143 in 2007 respectively. In 2008 we can again observe the decrease of valuation metrics due to the global financial market turmoil. Similarly to above, forward P/E also increased from 11.004 to 17.989 over the same period. The result is in line with the argument that the undervaluation of stock market has been recently eased due to the significant improvement of corporate governance. (Choi, 2009)

Table V presents Spearman correlation coefficients among the key variables. [10] As would be expected, the CGI is significantly negatively associated with the implied cost of equity capital (-0.197) and positively associated with valuation measures including P/B (0.146) and Tobin's Q (0.134). These relationships seem to back up the argument that the companies with good corporate governance are traded at a premium due to the lower required rate of return (i.e. cost of capital) from the market participants. The association between the ECI and ROE representing financial performance (CFP) is not statistically significant at 10% level. [11] This finding is not inconsistent with prior research which suggested that business ethics is not clearly linked to the short-term financial performance although there is a relationship between BE and CFP in the long-term (Preston and O'Bannon, 1997; Choi and Jung, 2008). Surprisingly, ROE shows significant positive association with the CGI. This finding may imply that companies with better CG system tend to have better financial performance. On the other hand, it may also be alternatively interpreted that companies with sufficient economic resources devote more attention to CG. The result provides important implications to corporations as it suggests that the effects of sound corporate governance on a company's financial output materialize in a shorter run than the effects of ethical commitment, which exhibits a relatively longer lead-lag cycle (Preston and O'Bannon, 1997; Choi and Jung, 2008). Not surprisingly, the CGI is strongly positively associated with the ECI (0.470), meaning that

companies with sound governance system show strong commitment to business ethics.

Table VI presents the results of regression analysis in various settings. After controlling for risk factors, the key financial measures are used as the dependent variables and the CGI as the independent variable. Following prior studies, we employed FLV, sales growth, and total assets as controlling variables for leverage, growth and size respectively. Additional risk proxies of Disp. and beta are added to the regression. [12]

Prior literature argues that companies with stable earnings have lower cost of capital (Barth and Hutton, 2004). This study estimated dispersion of analysts' forecasts (Disp.) from standard deviation of analysts' forecasts deflated by consensus mean forecasts (Gebhardt et al., 2001) and used is as a proxy for earnings variability.

Disclosure literature investigates the role of information in relation with a firm's cost of capital. The results show that easy availability of information is associated with a lower cost of capital due to the reduced information asymmetry (Healy and Palepu, 2001; Easley and O'Hara, 2004; Habib, 2006). In our study, information availability is proxied for by companies' assets. [13] The slack resource studies argue that larger companies tend to commit to improve corporate governance system with the hope of receiving greater approval from their stakeholders.

Prior studies argue that companies that rely more heavily on debt financing are more ethically committed because the firms incurring a heavier debt load have a stronger incentive to lower their cost of capital by providing more transparent information to the market and enhancing their corporate reputation (Roberts, 1992; Gelb and Strawser, 2001a). Such behavior might also enable these companies to achieve profits which would be high enough to compensate for additional financial costs incurred due to the increased debts. In those cases, a strong positive association between the cost of capital and leverage variables including FLV and B/M can be expected.

Panels A and B of Table VI indicate that in agreement with good management theory, valuation variables are significantly associated with the CGI; higher scores for the CGI translate into higher valuation. The association between the CGI and a company's valuation is clearly highly significant. Such a conclusion is not surprising given that the positive effects of a transparent governance system on a company's reputation would have an immediate impact on the company's stock price since market participants revise their expectations upward with respect to the its anticipated future performance. Beta is positively associated with valuation variables. Not surprisingly, valuation variables show a negative association with Disp. However, a weak association

between the cost of capital and leverage proxies seems to imply that the previous arguments are not fully supported.

Panel C of Table VI shows that after controlling for leverage, growth, and size, ROE is significantly associated with the CGI. [14]. Unlike our prior expectations, the impact of the quality of governance system on the CFP materializes in a short term.

Table VII presents the results of regression analysis in various settings using the implied cost of equity capital (r) as the dependent variable and the CGI as the independent variables after controlling for risk proxies. We used the cost of capital and the CGI to test whether stronger governance system leads to a lower cost of equity capital. Models 1 and 2 show the associations between the COC and the CGI after controlling for firm factors. As expected, after controlling for risk, leverage, growth and/or size, the CGI is negatively associated with the implied cost of equity capital (-0.138). [15] Consistent with prior studies, companies with more assets show lower COC (-0.005), implying a negative association between the COC and size. The cost of capital shows insignificant association with Disp. In addition, a positive association between the cost of capital and leverage proxies seems to support the previous arguments (0.003).

Models 3 and 4 summarize the associations between the COC and scores for the five provisions used in the construction of the CGI. First, PSI is negatively associated with the COC after controlling for firm factors (-0.139). That is, companies with a better governance system with regards to the protection of shareholders' benefits enjoy lower implied cost of capital (COC), and in turn, higher corporate valuation. Similarly, Bebchuk, Cohen and Ferrill (2009) also showed that entrenchment index (E Index), which was based on six provisions including staggered boards and used to measure the level of shareholder protection, is monotonically negatively associated with firm value.

The association between BOD and the COC is significantly negative (-0.111) as companies with a better BOD system show lower COC. The result is consistent with prior studies in the sense that board of directors is one of the most important components of a sound governance mechanism (Perry and Shivdasani, 2005).

Surprisingly, the remaining provisions represented by DC, AB, and DPO are statistically significantly associated with the COC.

Contrary to our expectations, beta shows an unclear association with the COC (0.023 in model 2 and -0.0004 in model 4) after controlling for other proxies. This result is not completely contradictory to prior arguments since previous literature points out that the costs of capital estimated from historic beta are of limited usefulness in predicting firm specific risk [16] Similarly to model 2, the COC is negatively associated

with size (-0.007) and positively associated with leverage (0.004). The cost of capital shows insignificant association with Disp.

In sum, the findings of this research seem to emphasize the importance of corporate governance. The reasoning behind the statement is as follows: (1) transparent corporate governance lowers the cost of equity capital of corporations, ergo (2) the companies enjoy higher stock market valuation as well as improved corporate financial performance, (3) the companies will continue to hedge their firm specific risks through ever more conscientious good quality corporate governance. Thus, a virtuous circle exists between corporate governance and corporate valuation through lower costs of capital. Highly valued firms also tend to have a greater commitment to better corporate governance because they have more resources at their disposal as well as the incentive to commit themselves to the improvement of corporate governance. From the valuation perspective, corporate governance leads to a competitive advantage over other companies in that sense that better CG usually translates into ethical behavior of employees, lower costs, a better reputation, and improved investor relations. [17]

6. Concluding Remarks

For decades, there has been an increasing awareness of the importance of corporate governance in many countries (Mizuo, 1998). Present global markets are characterized by toughening competition and high speed of change implying the growing need for accurate information and the use of more sophisticated methods in managing businesses. The company's ability to efficiently perform in competitive environment is carefully observed by market participants and finally reflected in the firm's value in the stock market, which can be regarded as the ultimate measure of its performance. Among others, CG is no doubt one of the crucial factors influencing the overall performance of a company, and consequently its valuation. Despite that, the research dealing with the factors associating CG and corporate valuation is ambiguous and there is still lack of crucial information about their linking factors. Apart from the approaches emphasizing the shareholders' viewpoint, increased attention has recently been paid to the stakeholders' concept of a company, which recognizes the interests of other parties and results in more emphasis put on the quality of CG, business ethics and disclosure-related issues. In this environment, various parties find themselves in need of clear evidence that investment in the improvement of company's governance capacity as well as the promotion of ethical

behavior brings positive effects on economic efficiency and shareholders' welfare.

As discussed above, the importance of CG and its connection to economic benefits is nowadays generally acknowledged. It then comes as a surprise that the intermediary factors explaining the association between corporate governance and firm valuation have not been well documented. This study has demonstrated the cost of equity capital is a key factor connecting the corporate governance of companies to corporate valuation. This finding, combined with the results of previous studies related to the positive association between corporate governance and market valuation, implies that the market rewards companies with transparent governance system through lower cost of equity capital. The results seem to lend support to the conventional belief that transparent companies bear lower risks in various aspects and also support the good management hypothesis. Companies that want to decrease firm specific risk and increase their market value need to make a greater effort to develop a transparent corporate system and commit themselves to ethical practices.

The results of this study have several important implications for corporate managers as well as stakeholders. First, prior studied have found that the quality of corporate governance is well reflected in the stock market (Bebchuk et al., 2009). In line with previous work, the results of this study demonstrate a statistically significant relationship between financial performance measures and market measures and they also reveal that corporate governance is significantly associated with financial performance. Although it is well known that stock market investors value the governance system of companies, the connecting factors between corporate governance and corporate valuation have yet to be thoroughly quantified and investigated. Earlier studies did not make this causal distinction explicit. Our research provides evidence that companies with transparent governance system are valued high due to the lower cost of equity capital.

Second, this study found that the association among corporate governance, firm factors, and corporate market valuation exists in a shorter time frame. Prevailing theories and empirical studies have documented that ethical companies are valued high since ethical commitment leads to a competitive advantage over other companies in the sense that ethical behavior usually translates into improved employee moral, a better reputation, improved investor relations, lower costs, and higher long term financial performance, which materialize in the long run. However, unlike the effects of ethical commitment on corporate financial performance, the link between corporate governance and corporate financial performance shows a shorter lead-lag cycle.

This study contributes to the corporate governance, business ethics, and capital market literature in several ways. To our knowledge, it is the first attempt to provide empirical evidence of the negative association between CG, BE, and the COC, and support the positive impacts of BE on CV. Considering the existing research background, identification of the linkages between the quality of CG and company valuation and their causal relations is very beneficial to various groups of market participants such as practitioners or policy-makers. The documentation of direct links among the above mentioned factors significantly facilitates the decision making process of companies' managers since it helps them legitimate the effort they make to improve their companies' CG and protect ethical values. Knowing what specific practices lead to a company's enhanced performance in the stock market and what role each of them plays also enables company managers to target their resources more efficiently and better adjust their strategy in the long-term. Our study would also be very useful for institutionalized and individual investors, since it would help them to better interpret the information they obtain from financial reports when assessing the quality of companies they are planning to invest in. Similarly, more detailed and accurate information concerning CG quality, ethical behavior and companies' performance allows policy-makers to respond more efficiently to the needs of market participant and create policies and rules leading to improved and more transparent business environment.

The results also facilitate international investment decisions pertaining to ethical investment or social responsibility investment. The literature reports that foreign investors invest less in countries with poor corporate governance (Leuz et al., 2009). Hence, if corporate managements were to see a substantially positive association between CG, corporate BE, and the COC and its impact on the corporate valuation, the chances for an overall improvement in corporate governance and corporate ethical commitment would be greatly enhanced and such development would ultimately lead to the improvement of countries' international competitiveness. Prior studies suggest that an overall change in business environment would boost the long-term profit potential for all companies concerned (Lee and Yoshihara, 1997; Verschoor, 1998; Choi and Jung, 2008).

Finally, the results of the research can also be widely used for academic and educational purposes. Deepened understanding of the association and the links among the COC, corporate valuation and CG would open new area of research and would help academics as well researchers to gain better insight into the field. Making them available to broader audience, we expect our findings to be published in inter-

national journals, thus also provoking more discussion and interest in the topic.

To sum up, we believe that the investigation of companies CG and ethical commitment and their mutual ties will bring positive effects in various areas. We expect that in the long run it will result in the overall improvement of CG and also lead to better and more transparent business environment supporting healthy competition and continuous growth of good quality businesses.

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Table I. Corporate Governance Assessment Items

	Description
1.	Protection of shareholder interests
◦	Introduction of a corporate governance charter and a code of conduct
◦	Introduction of a cumulative voting system and a written voting system
◦	Whether a staggered Board of Directors should be adopted
◦	Introduction of a fundamental defense against hostile corporate takeovers
◦	Shareholding ratios of stakeholders
◦	Past transactions with majority shareholders
◦	Shareholder proposals, proxy voting recommendations, and other minority shareholder protections
2.	Board of Directors
◦	Number of non-executive directors and their participation in board meetings
◦	Whether objections and modifications can be made by non-executive directors and accepted by the corporation
◦	The way non-executive directors are nominated
◦	Shareholdings of directors
◦	The establishment of a nominating committee and a board remuneration committee
◦	The separation of the Representative Director and the Chairman of the Board of Directors
◦	Performance-based stock options
◦	The self-evaluation of Board of Directors activities and the disclosure of evaluation results
3.	Disclosure
◦	IR performance
◦	Disclosure records, including voluntary, inquired, and curative disclosures
◦	Disclosure of the participation by individual directors at board meetings and their votes made in favor of, or against, proposals
◦	Disclosure in English on websites or in audit reports
◦	Whether or not the total remuneration of each individual director is disclosed
4.	Auditing body
◦	The establishment, organization, and operation of an audit committee
◦	Whether a system is in place to protect whistle blowers
◦	The way independent auditors are nominated, and whether the independent auditors have rendered consulting services
5.	Distribution of the proceeds of operation
◦	The dividend yield ratio and the purchase of treasury shares
◦	The three-year average payout ratio and interim dividends

Table II. Descriptive Statistics: Industry

Industry			Industry		
Airlines	3	0.8 %	Household Products	5	1.3 %
Auto Components	52	13.6 %	IT Services	7	1.8 %
Automobiles	9	2.3 %	Industrial Conglomerates	9	2.3 %
Beverages	9	2.3 %	Machinery	16	4.2 %
Building Products	6	1.6 %	Marine	5	1.3 %
Chemicals	43	11.2 %	Media	23	6.0 %
Commercial Banks	22	5.7 %	Metal & Mining	31	8.1 %
Commercial Services & Supplies	6	1.6 %	Multiline Retail	17	4.4 %
Commuication Equipment	4	1.0 %	Office Electronics	3	0.8 %
Construction & Engineering	57	14.9 %	Oil, Gas & Consumable Fuels	6	1.6 %
Construction Materials	4	1.0 %	Paper & Forest Products	12	3.1 %
Consumer Finance	1	0.3 %	Personal Products	4	1.0 %
Containers & Packaging	1	0.3 %	Pharmaceuticals	31	8.1 %
Distributors	1	0.3 %	Road & Rail	8	2.1 %
Diversified Consumer Services	6	1.6 %	Semiconductors & Equipment	19	5.0 %
Diversified Telecommunication Services	8	2.1 %	Shipbuilding	21	5.5 %
Electrical Equipment	17	4.4 %	Software	4	1.0 %
Electronic Equipment & Instruments	36	9.4 %	Specialty Retail	3	0.8 %
Eletric Utilities	5	1.3 %	Textiles, Apparel & Luxury Goods	17	4.4 %
Food Products	45	11.7 %	Tobacco	5	1.3 %
Gas Utility	22	5.7 %	Trading Companies & Distributors	13	3.4 %
Health Care Equipment & Supplies	2	0.5 %	Transportation Infrastructure	1	0.3 %
Hotel, Restaurants & Leisure	10	2.6 %	Wireless Telecommunication Services	4	1.0 %
Household Durables	14	3.7 %			%

Industry categories are culled from FnGuide database.

Table III. Descriptive Statistics: Governance Assessment Factors

	2004	2005	2006	2007	2008
Protection of shareholder interests (PSI)	0.565	0.565	0.567	0.562	0.563
Board of Directors (BOD)	0.265	0.223	0.327	0.327	0.342
Disclosure (DC)	0.458	0.471	0.435	0.440	0.461
Auditing body (AB)	0.425	0.461	0.541	0.539	0.551
Distribution of the proceeds of operations (DPO)	0.313	0.412	0.359	0.347	0.371
Corporate Governance Index (CGI)	0.428	0.447	0.454	0.456	0.467
Number of observations	135	164	143	156	129

Table IV. Descriptive Statistics: Firm Characteristics

Variable	2004	2005	2006	2007	2008	Average
r_{OJ}	18.7 %	18.5 %	16.0 %	16.6 %	17.3 %	17.4 %
r_{PEG}	14.8 %	15.1 %	14.0 %	13.6 %	18.9 %	15.2 %
Beta	0.766	0.903	0.996	1.001	0.965	0.928
FLV	2.496	2.694	2.788	2.712	2.674	2.676
D/M	0.423	0.285	0.232	0.200	0.526	0.325
Disp.	0.095	0.129	0.114	0.077	0.208	0.123
ROA	0.066	0.061	0.059	0.063	0.043	0.058
ROE	0.120	0.111	0.108	0.121	0.081	0.109
Δ Sales	0.179	0.136	0.127	0.173	0.195	0.160
P/E	11.004	16.892	15.769	17.989	15.812	15.622
P/B	1.084	1.647	1.647	2.143	1.335	1.594
Tobin's Q	1.033	1.319	1.288	1.500	1.180	1.274
MV	1,400,573	2,446,777	3,034,548	3,864,573	2,171,424	2,623,489

r_{OJ}: Implied cost of equity capital estimated from the abnormal earnings growth valuation model developed by Ohlson and Juettner-Nauroth (2005); r_{PEG}: Implied cost of equity capital estimated from the abnormal earnings growth valuation model developed by Easton (2004); Beta: Five-year rolling beta estimated by the Capital Asset Pricing Model; FLV: Total assets to the book value of common equity ratio; D/M: Debt-to-market value of equity ratio; Disp.: Dispersion of analysts' forecasts=$\left|\frac{\text{Standard Deviations of Analysts' Forecasts}}{\text{Consensus Mean Forecasts}}\right|$; ROA :Return on Total Assets; ROE :Return on Common Equity; Δ Sales: % change sales=$\frac{\text{Sales}_t}{\text{Sales}_{t-1}} - 1$; P/E: price-to-earnings ratio; P/B: Price-to-book ratio; Tobin's Q: Tobin's Q Ratio=$\frac{\text{Liability + Market Value of Equity}}{\text{Total Assets}}$; MV: Market value of equity in millions.

Table V. Correlation among Variables

	CGI	PSI	BOD	DC	AB	DPO	ECI	r_{OJ}	r_{PEG}	Beta	ROE	P/B
PSI	0.477*											
BOD	0.836*	0.164*										
DC	0.786*	0.195*	0.589*									
AB	0.769*	0.086‡	0.732*	0.472*								
DPO	0.200*	0.121*	0.092‡	0.084‡	0.002							
ECI	0.470*	0.205*	0.495*	0.409*	0.389*	-0.035						
r_{OJ}	-0.197*	-0.182*	-0.176*	-0.129*	-0.121*	0.005	-0.114‡					
r_{PEG}	-0.218*	-0.195*	-0.158*	-0.166*	-0.123*	-0.064†	-0.158*	0.735*				
Beta	0.099‡	-0.202*	0.244*	0.107*	0.240*	-0.265*	-0.026	0.031	0.072‡			
ROE	0.147*	0.090‡	0.105*	0.126*	0.109*	0.024	0.055	-0.124*	-0.169*	0.000		
P/B	0.146*	0.037	0.149*	0.127*	0.148*	-0.109*	0.235*	-0.066‡	-0.144*	0.176*	0.426*	
Tobin's Q	0.134*	0.087‡	0.127*	0.114*	0.090‡	-0.077‡	0.252*	-0.069‡	-0.144*	0.093‡	0.416*	0.918*

Spearman correlations are reported in the lower triangular matrix; CGI: corporate governance index = PSI + BOD + DC + AB + DPO; PSI: Protection of shareholder interests score; BOD: Board of directors score; DC: Disclosure score; AB: Auditing body score; DPO: Distribution of the proceeds of operations score; ECI: Ethical Commitment Index = $\sum$ Ethical commitment dimension; r_{OJ}: Implied cost of equity capital estimated from the abnormal earnings growth valuation model developed by Ohlson and Juettner-Nauroth (2005); ROE :Return on Common Equity; P/B: Price-to-book ratio; Tobin's Q: Tobin's Q Ratio=$\frac{\text{Liability + Market Value of Equity}}{\text{Total Assets}}$.
$^{\dagger}p < 0.1$; $^{\ddagger}p < 0.05$; $^{\star}p < 0.01$

Table VI. Regression of Financial Variables on CGI and Variables for Firm Characteristics

	Intercept	CGI	Beta	Disp.	Δ Sales	TA	FLV	Adj. R^2
Panel A: Tobin's Q								
Model 1	0.964*	1.313*	0.224*	-0.077‡	-0.001	-0.050‡	-0.030*	0.054
Model 2	0.984*	0.730*						0.017
Model 3	0.896*	0.689*	0.118†					0.021
Model 4	0.995*	0.740*		-0.064†				0.020
Model 5	0.985*	0.730*			-0.001			0.016
Model 6	1.127*	1.156*				-0.047‡		0.026
Model 7	0.965*	0.937*					-0.031*	0.034
Panel B: P/B								
Model 1	0.666*	1.902*	0.597*	-0.160‡	-0.002	-0.049	-0.018	0.053
Model 2	0.945*	1.518*						0.021
Model 3	0.584*	1.350*	0.485*					0.044
Model 4	0.965*	1.537*		-0.121†				0.024
Model 5	0.947*	1.517*			-0.002			0.020
Model 6	0.973*	1.602*				-0.009		0.019
Model 7	0.938*	1.596*					-0.012	0.020
Panel C: ROE								
Model 1	0.073*	0.125*	0.007	-0.025*	0.000	-0.002	0.001	0.063
Model 2	0.066*	0.106*						0.023
Model 3	0.067*	0.106*	-0.001					0.021
Model 4	0.070*	0.110*		-0.025*				0.067
Model 5	0.066*	0.106*			0.000			0.022
Model 6	0.073*	0.126*				-0.002		0.022
Model 7	0.066*	0.102*					0.001	0.021

Panel A: Tobin's $Q_{jt} = \alpha_1 + \beta_1 \cdot \text{CGI}_{jt} + \beta_2 \cdot \text{Beta}_{jt} + \beta_3 \cdot \text{Disp.}_{jt} + \beta_4 \cdot \Delta\text{Sales}_{jt} + \beta_5 \cdot \text{TA}_{jt} + \beta_6 \cdot \text{FLV}_{jt} + \varepsilon_{jt}$; Panel B: $\text{P/B}_{jt} = \alpha_1 + \beta_1 \cdot \text{CGI}_{jt} + \beta_2 \cdot \text{Beta}_{jt} + \beta_3 \cdot \text{Disp.}_{jt} + \beta_4 \cdot \Delta\text{Sales}_{jt} + \beta_5 \cdot \text{TA}_{jt} + \beta_6 \cdot \text{FLV}_{jt} + \varepsilon_{jt}$; Panel C: $\text{ROE}_{jt} = \alpha_1 + \beta_1 \cdot \text{CGI}_{jt} + \beta_2 \cdot \text{Beta}_{jt} + \beta_3 \cdot \text{Disp.}_{jt} + \beta_4 \cdot \Delta\text{Sales}_{jt} + \beta_5 \cdot \text{TA}_{jt} + \beta_6 \cdot \text{FLV}_{jt} + \varepsilon_{jt}$.
CGI: Corporate Governance Index = PSI + BOD + DC + AB + DPO; r: Implied cost of equity capital; Beta: Five-year rolling beta estimated by the Capital Asset Pricing Model; Disp.: Dispersion of analysts' forecasts=$\left|\frac{\text{Standard Deviations of Analysts' Forecasts}}{\text{Consensus Mean Forecasts}}\right|$; Δ Sales: % change sales=$\frac{\text{Sales}_t}{\text{Sales}_{t-1}} - 1$; TA: Log (Total Assets); FLV: Total assets to the book value of common equity ratio; P/B: Price-to-book ratio; Tobin's Q: Tobin's Q Ratio=$\frac{\text{Liability + Market Value of Equity}}{\text{Total Assets}}$; ROE: Return on equity=$\frac{\text{Net Income}}{\text{Book Value of Equity}}$.
$^{\dagger}p < 0.1$; $^{\ddagger}p < 0.05$; $^{\star}p < 0.01$

Table VII. Regression of CGI and Variables for Firm Characteristics on Implied Cost of Equity Capital

Variable	Pred. Sign	Model 1	Model2	Model 3	Model 4
Intercept	+/-	0.246 *	0.246 *	0.276 *	0.284 *
		(16.18)	(13.41)	(12.58)	(9.30)
CGI	-	-0.155 *	-0.138 *		
		(-4.70)	(-3.29)		
PSI	-			-0.139 *	-0.139 *
				(-3.74)	(-3.63)
BOD	-			-0.106 *	-0.111 *
				(-2.71)	(-2.67)
DC	-			0.004	0.016
				(0.14)	(0.61)
AB	-			0.012	0.021
				(0.56)	(0.96)
DPO	-			0.005	0.015
				(0.31)	(0.84)
Beta	+		0.023 ‡		-0.0004 †
			(2.14)		(-1.81)
Disp.	+		0.008		0.008
			(1.48)		(1.40)
Δ Sales	-		-0.0004 †		0.022 †
			(-1.72)		(1.96)
TA	-		-0.005 †		-0.007 ‡
			(-1.77)		(-2.18)
FLV	+		0.003 ‡		0.004 *
			(2.40)		(2.88)
Adj. R^2		0.033	0.053	0.046	0.070

Model 1 and 2: $\mathrm{r}_{jt} = \alpha_1 + \beta_1 \cdot \mathrm{CGI}_{jt} + \gamma_1 \cdot \mathrm{Beta}_{jt} + \gamma_2 \cdot \mathrm{Disp.}_{jt} + \gamma_3 \cdot \Delta\mathrm{Sales}_{jt} + \gamma_4 \cdot \mathrm{TA}_{jt} + \gamma_5 \cdot \mathrm{FLV}_{jt} + \varepsilon_{jt}$.
Model 3 and 4: $\mathrm{r}_{jt} = \alpha_1 + \beta_1 \cdot \mathrm{PSI}_{jt} + \beta_2 \cdot \mathrm{BOD}_{jt} + \beta_3 \cdot \mathrm{DC}_{jt} + \beta_4 \cdot \mathrm{AB}_{jt} + \beta_5 \cdot \mathrm{DPO}_{jt} + \gamma_1 \cdot \mathrm{Beta}_{jt} + \gamma_2 \cdot \mathrm{Disp.}_{jt} + \gamma_3 \cdot \Delta\mathrm{Sales}_{jt} + \gamma_4 \cdot \mathrm{TA}_{jt} + \gamma_5 \cdot \mathrm{FLV}_{jt} + \varepsilon_{jt}$.
CGI: Corporate Governance Index = PSI + BOD + DC + AB + DPO; PSI: Protection of shareholder interests score; BOD: Board of directors score; DC: Disclosure score; AB: Auditing body score; DPO: Distribution of the proceeds of operations score; r: Implied cost of equity capital; Beta: Five-year rolling beta estimated by the Capital Asset Pricing Model; Disp.: Dispersion of analysts' forecasts=$\left|\frac{\text{Standard Deviations of Analysts' Forecasts}}{\text{Consensus Mean Forecasts}}\right|$; Δ Sales: % change sales=$\frac{\text{Sales}_t}{\text{Sales}_{t-1}} - 1$; TA: Total Assets; FLV: Total assets to the book value of common equity ratio; ROE: Return on equity=$\frac{\text{Net Income}}{\text{Book Value of Equity}}$; Tobin's Q: Tobin's Q Ratio=$\frac{\text{Liability + Market Value of Equity}}{\text{Total Assets}}$.
$^{\dagger}p < 0.1$; $^{\ddagger}p < 0.05$; $^{\star}p < 0.01$

Notes

[1] For instance, in 1999, Korea adopted a CG law that mandates 'large firms' (total assets greater than 2 trillion won) to have an audit committee with at least 2/3 outside members, and at least 1/2 outside directors.

[2] The term refers to the fact that the companies listed in the Korean stock market are traded at a discount although their profitability is not lower than the profitability of comparable companies in other countries. Korean companies are thus, *ceteris paribus*, traded at a discount (Guerrera, 2006; Suh and Sim, 2007; Choi, 2009). Potential explanations for the phenomenon include the volatility of the Korean stock market caused by the investors' short-term speculation characteristics (Chang, 2005), stock market restrictions (e.g. restricted short-selling), and weak financial systems (e.g. poor shareholder protection, restrictions on hedge or pension funds, etc.) as offered by literature. Poor corporate governance (Baek et al., 2004; Baek et al., 2009; Hail and Leuz, 2006; Leuz et al., 2009), lack of business ethics and corporate transparency (Baek et al., 2004; Choi and Jung, 2008; Choi and Nakano, 2008), and inadequate and less timely disclosure (Botosan, 1997; Botosan and Plumlee, 2002; Poshakwale and Courtis, 2005; Dargenidou et al., 2006; Habib, 2006) belong among the explanations provided by corporate sector.

[3] Despite not being exactly equivalent unless market prices are efficient and analysts' forecasts of earnings and accounting numbers are not biased, the terms implied costs of capital or the expected rates of returns and the costs of equity capital are commonly used interchangeably.

[4] Similarly, a bidirectional association between CSP and CFP has been reported in prior literature (Waddock and Graves, 1997; Simpson and Kohers, 2002; Orlitzky et al., 2003; Orlitzky, 2005).

[5] The ECI is based on a survey conducted in January 2005 among Korean companies representing various sizes as well as industry groups. In line with previous literature, the index for each company is composed of multiple provisions falling in two categories. So-called *implicit dimensions* are represented by the top management support, corporate culture, ethical leadership, open communication channels, and ethical training (Trevino, 1986; Genfan, 1987; Genfan, 1987; Sims, 1992; Brenner, 1992; Weeks and Nantel, 1992; Callan, 1992; Dean, 1992; Carlson and Perrewe, 1995; Sims and Keon, 1999; Schwartz et al., 2005; Sauser, 2005) and the group of *explicit dimensions* contains codes of ethics, ethics hot-lines, ethics officers, and ethics committees (Murphy, 1988; Callan,1992; Weiss, 1994; Austin, 1994; Singer, 1995; Verschoor, 1998).

[6] Choi and Jung (2008) defined the financial performance and corporate valuation as follows: *Corporate financial performance (CFP)* concerns the past and contemporaneous performance of business, as the financial performance measures are mostly taken from a company's financial statements. CFP thus represent the historical summary of a company's business. On the other hand, *Corporate valuation (CV)* concerns achieving performance in the financial market. Its measures are primarily related to the stock price in the capital market, which means that they are related to the perceptions of external stakeholders (e.g. security analysts, individual investors, and institutional investors). Market value thus represents not only the past and current financial performance of the company but it also reflects other information including the market's expectations of the company's future profitability.

[7] Alternative financial measures were tested as controlling variables. The results were qualitatively identical.

[8] As of December 31, 2008, 763 companies were listed on the Korea Stock Exchange and 1,036 companies were listed on the KOSDAQ.

[9] Prior studies speculate that, in general, the companies listed in developing countries have higher cost of equity capital due to (1) the weaker financial systems (Chang, 2005), (2) poor corporate governance (Baek et al., 2004; Baek et al., 2009; Hail and Leuz, 2006), (3) lack of business ethics including corporate transparency (Botosan, 1997; Botosan and Plumlee, 2002; Baek et al., 2004; Poshakwale and Courtis, 2005; Dargenidou et al., 2006; Habib, 2006; Lambert et al., 2007; Choi and Jung, 2008; Choi and Nakano, 2008).

[10] Pearson and Kendall's τ-b correlations were also tested. The results were not qualitatively different from the Spearman correlation.

[11] When other proxies for CFP such as ROA were used, the results were qualitatively similar.

[12] The analysis was conducted with various proxy variables. The regression results were not sensitive to the choice of control variables.

[13] When other proxies for information environment were used we obtained qualitatively similar results, as information measures such as trading volume and size variables are highly correlated with each other (Barth and Hutton, 2004).

[14] The use of ROA leads to a similar conclusion.

[15] We used various controlling variables. The results were robust to the choice of different variables.

[16] For example, Fama and Frence (1997; 2002) conclude that the cost of capital estimated from historic beta is unavoidably imprecise.

[17] Similarly, prior studies document that the relationship between business ethics and firm value (Verschoor, 1998; Choi and Jung, 2008), or corporate social performance and CFP is bidirectional (Waddock and Graves, 1997; Orlitzky et al., 2003; Orlitzky, 2005).

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