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The Relation between Corporate Social Responsibility and Financial Performance: Evidence from Korean Firms

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ABSTRACT

The purpose of this study is to examine if there exists any systematic relation between corporate social responsibility (CSR) and financial performance. Based on the argument that CSR would play the role of mitigating conflicts between firms and society, we hypothesized that CSR would enhance the firms' financial performance. Specifically, the firms with higher CSR performance are predicted to have higher profitability, lower cost of capital, and higher firm values than those with lower CSR performance. These hypotheses were tested using 130 Korean firms over eight-year period (1998-2005). An index published by Korean Economic Justice Institute (KEJI) was used as the measure of CSR performance. Our empirical results suggest that the firms with higher CSR performance exhibit better financial performance as measured by return on asset (profitability) and Tobin's Q (firm value). However, contrary to our prediction, CSR is positively related to the cost of capital. These results are robust across different measures of variables and testing methodologies.

Key Words: Corporate social responsibility, cost of capital, financial performance, KEJI index, return on assets, Tobin's Q.

JEL Classifications: M40, M41

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1. INTRODUCTION

Why should firms pay attention to their corporate social responsibility (hereafter, CSR)? Do firms' CSR performances increase their firm values? While debates on these issues have a long history, only recently has CSR received spotlights as a requirement for the respectable or sustainable companies.[1] This importance of CSR is expected to increase because of the changes in business environment. For example, USA and UN have emphasized business ethics and CSR by introducing the Sarbanes and Oxley Act (2002) and the Global Compact (1999), respectively. Furthermore, ISO is planning to implement the international standard for CSR (ISO26000).

This global trend toward emphasizing on CSR has also affected the business environment for the firms in Korea. Since 2000, more than twenty firms have been publishing the sustainability reports, and some firms have initiated the CSR strategies that include environmentally sustainable management policies and social contribution programs (e.g., Samsung SDI, Korean Electric, POSCO, and SK). It has been reported that a group of firms with excellent CSR records have enjoyed the increase in their stock price by 319% annually, compared to the 44% increase in KOSPI index since January 2000 (Money Today, 4/16/2007).

A considerable body of research has investigated the relation between CSR and financial performance. Theoretically, there are two competing arguments about the necessity and benefits of CSR. Empirical studies, mostly based on one of the competing theories, have provided mixed results. While many studies have documented positive relation between CSR and financial performance (e.g., Bragdon and Marlin, 1972; McGuire et al., 1988; Herremans et al., 1993; Pava and Krausz, 1996; Waddock and Graves, 1997; Dowell et al., 2000; King and Lenox, 2001; Tsoutsoura, 2004; Al-Tuwaijiri et al., 2004), other studies have showed negative relation (e.g., Vance, 1975; Brammer et al., 2005) or no relation (e.g., Alexander and Buchholz, 1978; Aupperle et al., 1985; Nelling and Webb, 2006). A few studies have investigated the relation between CSR and financial performance for the Korean firms to find mixed results (e.g., Park and Lee, 2002; Park et al., 2004; Lee and Kang, 2012).

The purpose of this study is to examine whether any systematic relation exists between CSR and financial performances for the Korean firms. Our study is very similar to that by Lee and Kang (2012) in its research methodology and data. However, this study has following differences. First, we developed a theoretical framework for the CSR-firm value relation, based on the potential role of CSR in mitigating/preventing the conflicts between firms and society. Our research hypotheses were then derived from this framework. Second, we used total score of KEJI index as the measure of CSR over eight-year periods and conducted yearly analysis. Third, in addition to accounting measure of financial performance (profitability), we used market-based financial performances such as the cost of capital and Tobin's Q. Finally, we include financial leverage and industry dummies as additional control variables in the regression analyses.

We have found that CSR is positively related to financial performance as measured by accounting profitability (return on assets) and firm value (Tobin's Q). However, CSR is also positively related to the cost of capital, which is contrary to our hypothesis. These results are robust across different measures of variables and testing methodologies.

The remainder of this paper is organized as follows. In the next section, we review prior studies, describe the theoretical relation between CSR and financial performance, and develop research hypotheses. Section three contains research design including sample selection, measurements of variables

[1] As discussed in later section, CSR can be defined as "a program of actions taken to prevent or resolve environmental and distributional conflicts between firms and society".

and methodology. Empirical results are presented in Section four. A summary of the results and some suggestions for future research appear in the final section.

2. THEORETICAL BACKGROUND AND HYPOTHESES

2.1 Literature Review

There are two contrasting perspectives on the potential relation between CSR and financial performance. The first perspective views CSR as a kind of agency costs resulting from the management's misuse of corporate resources for his/her personal career goals or other purposes (agency theory perspective). According to this perspective, therefore, CSR would have negative relation to financial performance and eventually sacrifice the stockholders' wealth (Friedman, 1970; Pava and Krausz, 1996).

The other perspective is based on the premise that firms should make efforts to satisfy their stakeholders (e.g., employees, customers, suppliers and local communities) so much as to maximize stockholders' wealth because firms facing conflicts with stakeholders would suffer from additional expenses and increased risks (stakeholder theory perspective). Therefore, it is argued that CSR will eventually have positive effects on the firm values by mitigating the conflicts between the firms and their stakeholders (e.g., Freeman, 1984; Swanson, 1999; Paine, 2002).[2]

A considerable body of research has investigated these two competing arguments about the relation between CSR and financial performance. There are several noteworthy points from previous studies. First, they provide mixed results. Most studies show positive relation between CSR and financial performance (e.g., Bragdon and Marlin, 1972; McGuire et al., 1988; Herremans et al., 1993; Pava and Krausz, 1996; Waddock and Graves, 1997; Dowell et al., 2000; King and Lenox, 2001; Tsoutsoura, 2004; Al-Tuwaijiri et al., 2004). However, there are some studies that have documented the results of negative relation (e.g., Vance, 1975; Brammer et al., 2005) or no relation (e.g., Alexander and Buchholz, 1978; Aupperle et al., 1985; Nelling and Webb, 2006).

Second, CSR performance has been measured by various proxies such as CEP pollution index (e.g., Bragdon and Marlin, 1972; Pava and Krausz, 1996), amount of toxic chemical emission (e.g., King and Lenox, 2001; Al-Tuwaijiri et al., 2004), corporate reputation index (e.g., Alexander and Buchholz, 1978; Herremans et al., 1993) and KLD social performance index (e.g., Tsoutsoura, 2004; Nelling and Webb, 2006). Among these proxies, environmental performance measures such as CEP pollution index and the amount of toxic chemical emission were most extensively used and found positively related to financial performance in many studies.

Third, various proxies have been used to measure firms' financial performance, including accounting profitability (ROE, ROA), market value (rate of returns on stocks, Tobin's Q ratio) and risk (total risk, systematic risk). While many studies adopted the approach to use multiple measures of financial performance, the results of studies indicate that it is most likely to have positive relation between CSR and financial performance when accounting profitability measures were used (e.g., Bragdon and Marlin, 1972; McGuire et al., 1988; Herremans et al., 1993; Pava and Krausz, 1996; Waddock and Graves, 1997; Park et al., 2004; Tsoutsoura, 2004).

To summarize, previous studies on the relation between CSR and financial performance provide mixed results, which support neither the agency theory perspective nor the stakeholder theory perspective.

[2] The third 'neutral' perspective argues that CSR would have no impact on firms' financial performance because CSR is not only conceptually ambiguous and difficult to define, but also a matter of perception. Still, there are other perspectives such as stewardship theory, institutional theory, and strategic leadership theory.

Also, the results often depend upon the choice of measures for CSR and financial performance. While these results come largely from the firms in the USA, similar results were obtained using the sample of Korean firms.

For example, using an index published by Korean Economic Justice Institute (KEJI), Park and Lee (2002) reported a positive relation between KEJI index and Tobin's Q for the sample of 167 Korean firms. However, they used only the environmental protection performance score from KEJI index. Park et al. (2004) included, as CSR measures, contribution to social service as well as environmental protection scores from KEJI index in their investigation into the relation between CSR and accounting measures of financial performance. While contribution to social service performance was positively related to ROA and EVA (economic value added), environmental protection performance had no significant relation with accounting profitability measures except for positive (negative) relation with debt to equity ratio (current ratio). However, both of these studies did not include the firm risk as a measure of financial performance.

2.2 Corporate Social Responsibility and Financial Performance

These days, firms operate in an environment surrounded by many interest groups such as employees, customers, suppliers, and local communities. These stakeholders usually demand firms' responsibilities for the society, thereby often causing conflicts between firms and society. One type of the conflicts arises from the dispute over who should pay the social cost that exceeds the private cost due to negative externalities such as pollution, global warming, and acid rain (environmental conflicts). The other comes from the dispute over distributional fairness (distributional conflicts). Examples include the issues of low wage, underage workers and human right violations, usually raised against global companies that operate factories in under-developed countries.

The firms involved in any type of these conflicts would face the risks of deteriorating profits and/or increasing cost of capital, eventually resulting in the decrease in their firm values. There are several firms that suffered from huge losses because of their failure to resolve the conflicts. The cases include Shell (disposal of oil buoy in the North Sea), Nike (child labor scandals in Pakistan and Cambodia), and McDonalds (use of polystyrene packaging for its products).[3]

CSR could play a role of reducing or compensating the discrepancy between private cost and social cost in the environmental conflicts. For example, BP initiated its response to climate changes by self-imposing upper limit on greenhouse gas emission and introducing a corporate emission trading system. This initiative resulted in substantial reduction in greenhouse gas emission as well as an increase in net income (about 600 million dollars).[4] Another example is the case of Heinz, who had switched its fishing ground for tunas from the eastern to western pacific oceans in order to avoid killing dolphins while catching tunas. By taking this strategy, Heinz could not only prevent the potential conflict with environmentalists, but also enhance its environment-friendly brand name value.[5]

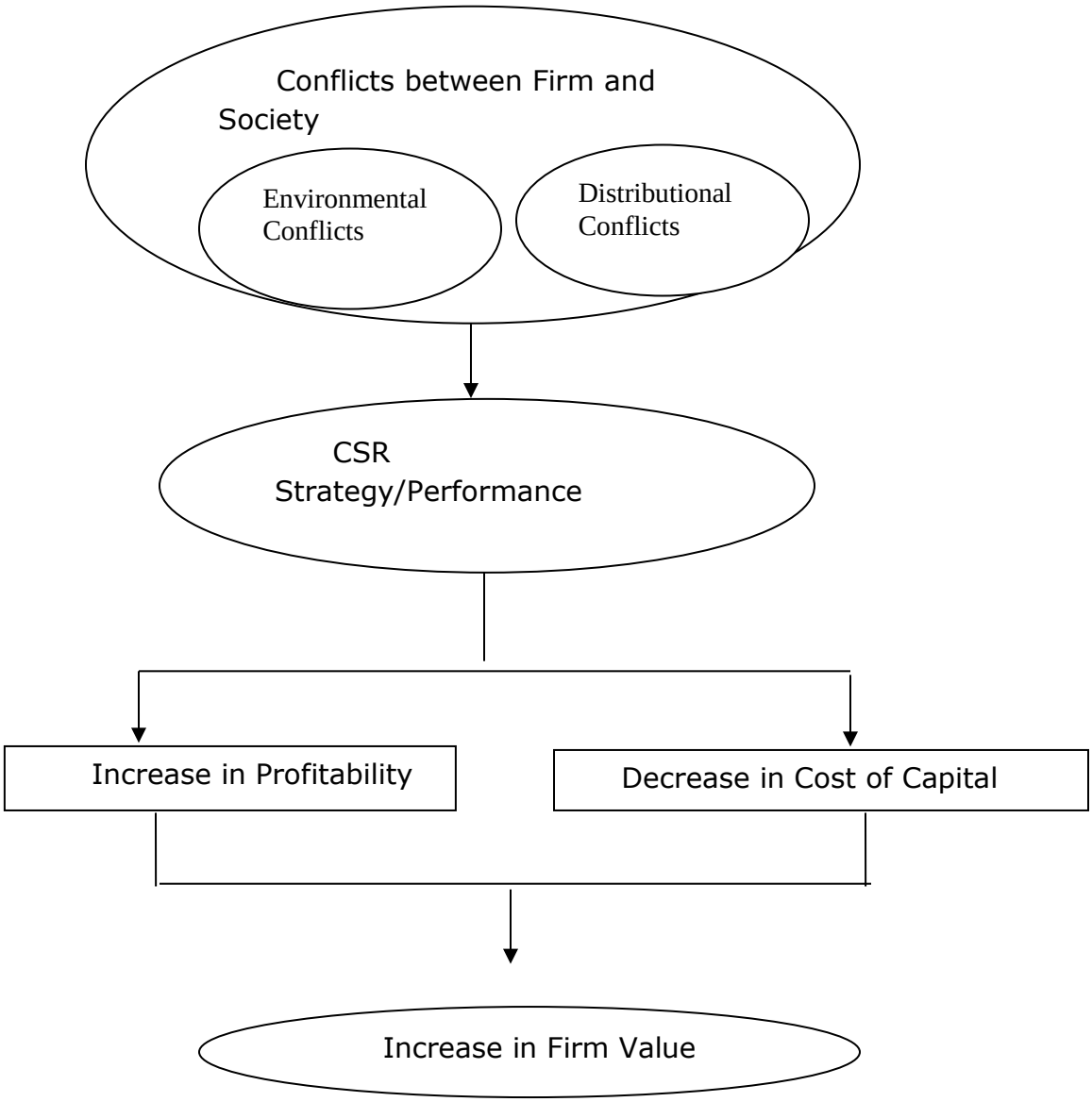
CSR is also important in resolving the distributional conflicts. For example, Levi Strauss and Charles Veillon faced the same kind of disputes as Nike did (low wage, underage workers etc.). Unlike

[3] For details, see David P. Baron, Business and Its Environment, 4th Edition, Prentice Hall, 2006, chapter 4 pp. 110-119 (Shell); David P. Baron, op cit, pp. 119-122 (Nike); "McDonald's and Environment (A)", Harvard Business School Case N9-391-108.
[4] See "Global Climate Change and BP Amoco", Harvard Business School Case N9-700-106.
[5] See "Starkist (A)", Harvard Business School Case N9-749-128.

Nike, however, they were able to prevent the conflicts either by providing reasonable wage and working condition (Levi) or by implementing strict standard for hiring underage workers (Veillon).[6]

These cases, although anecdotal, suggest that CSR plays an important role of mitigating or preventing the conflicts between firms and society. More importantly, CSR strategy/performance can affect the firm's profitability, cost of capital, and eventually its market value. This link between CSR and financial performance is presented in Figure 1.

<Figure 1> CSR and Financial Performance



[6] See "Charles Veillon, S.A. (A)", Harvard Business School Case N9-398-011 and for the Levi Straus case, see David P. Baron, op cit.

2.3 Hypotheses

As shown in Figure 1 and suggested by previous section, CSR strategies make contributions to preventing or mitigating the environmental and distributional conflicts faced by firms. Through conflict resolutions, CSR can affect the firms' financial performance (improved profitability, lower costs of capital, and increased market value etc.). These effects of CSR on financial performance are elaborated below.

Profitability

CSR can affect the firms' profitability in the following ways. First, consumers prefer the products or services provided by the firms with high CSR performance ('product preference effects'). This would enable these firms to create (maintain) new (current) market shares, thereby improving their profitability. Second, CSR may contribute to cost savings by reducing wastes such as greenhouse gases and toxic chemical materials. Third, CSR efforts by firms can improve their relationship with regulators. This will not only reduce future regulatory costs, but also expand business segments for the firms, especially in regulated industries. Fourth, firms with good records on CSR will be able to recruit employees of good quality and motivate them because corporate image/reputation is an important factor for job choice (Montgomery and Ramus, 2003). This will eventually bring an improvement in employee productivity.

In short, CSR performance would have positive effects on the firms' profitability through consumers' product preferences, reductions in waste disposal costs and regulatory costs, and high productivity. Hence, we have the following hypothesis:

Hypothesis 1: Profitability is higher for the firms with high CSR performance than for those with low CSR performance.

Cost of Capital

CSR can also lead to lowering the firm's cost of capital. First, when firms face conflicts with their stakeholders, they are subject to the increase in the variability of profits, the decrease in the rates of returns, and sometimes loss of their market shares to the competitors. This increase in the firms' operating risks can be reduced by CSR activities. Second, investors tend to accept lower rates of return for the firms with high CSR performances because they prefer these firms to those with low CSR performance (investor preference effects), resulting in the decrease in the cost of capital. This argument is consistent with the recent advents of eco-fund or social responsibility investment (SRI). Third, disclosure of CSR performance information would reduce the informational asymmetry in the capital market. This, in turn, will decrease the estimation risk as well as adverse selection risk, thereby lowering the cost of capital. From these arguments, we have the following hypothesis:

Hypothesis 2: Cost of capital is smaller for the firms with high CSR performance than for those with low CSR performance.

Firm Value

A fundamental valuation model defines firm value as the present value of future cash flows discounted by an appropriate risk-adjusted rate. A measure of accounting income (profitability) is usually used as a proxy for future cash flows, while cost of capital is used for discount rate. Hence, firm value is positively (negatively) related to its profitability (cost of capital). As discussed in developing our hypotheses, CSR has positive relation to the profitability (hypothesis 1), but negative relation to the cost of capital (hypothesis 2). Therefore, we expect the positive relation between CSR and firm value, which leads to the following hypothesis:[7]

Hypothesis 3: Firm value is larger for the firms with high CSR performance than for those with low CSR performance.

3. RESEARCH DESIGN

3.1 Sample Selection

Our sample consists of 130 Korean firms for which Korean Economic Justice Institute (KEJI) published indices that measure the performances of their social responsibility activities (KEJI index). To be included in the sample, the firm must satisfy the following criteria: (1) each firm had to be ranked 200th or better in KEJI index at least 5 times over 8-year period (1998-2005); (2) sufficient financial data was available in KIS-FAS database to calculate financial performances and other variables.

The first requirement was imposed to select those firms that had good CSR performance, as measured by KEJI index, over time. This requirement yielded a sample of 144 firms. Fourteen firms did not pass the second criterion, resulting in the final sample of 130 firms.

3.2 Measurement of Variables

3.2.1 CSR Performance

CSR performance was measured by KEJI index. KEJI has published the index for the manufacturing firms listed in the Korean Stock Exchange since 1991. KEJI index is a score based on the evaluation of a firm's business activities using six components – soundness and fairness, contribution to social service, environmental protection, consumer protection, employee satisfaction, and contribution to economic development – with different weights.

There are other indices that can be used as a measure of CSR performance for Korean firms. These include Corporate Favorite Index published by Korean Chamber of Commerce, Social Contribution Index by Korean Economic Associates, and Sustainability Index by Eco-Frontier. Our choice of KEJI index is due to the following advantages that it has over other measures. First, KEJI index provides a composite measure of CSR performance based on many aspects of CSR activities. Second, it represents a reliable and stable index because of its continuous publication over 15 years by a prestigious NGO. Third, it measures CSR performance by using objective data from various sources and applying both quantitative and qualitative evaluation techniques.

Table 1 presents descriptive statistics for CSR performance (KEJI index) each year over the study period. Mean (Median) KEJI index ranges from 57.54 (57.19) in 2001 to 66.27 (65.77) in 1998, showing less than nine points difference. Two additional observations are noteworthy from Table 1. First, all the

[7] Another arguments for a positive CSR-firm value link are (i) rapid growth of SRI and (ii) positive effect of CSR on the firm's brand equity.

measures (mean, median, minimum and maximum) of KEJI index has been increasing since 2001, suggesting the trend of improvements in CSR performances by Korean firms. Second, standard deviations are small each year, showing that differences in KEJI indices among sample firms are not large. One reason for this may be our sample selection criterion of including only those firms of 200th or better rankings in KEJI index.

Table 1. Descriptive Statistics of CSR Performance (KEJI Index)

Year	Mean	Std Dev	Min	Median	Max
1998	66.27	2.838	62.75	65.77	74.30
1999	65.23	2.630	58.40	62.14	71.63
2000	58.94	2.512	54.83	58.51	67.28
2001	57.54	2.750	53.76	57.19	66.99
2002	59.44	3.300	53.84	59.04	68.36
2003	60.62	3.374	55.07	60.07	68.53
2004	62.33	3.510	57.47	62.11	77.48
2005	63.54	2.987	59.82	62.92	74.43

KEJI index, published by Korean Economic Justice Institute (KEJI), is a score based on the evaluation of a firm's business activities using six items – soundness and fairness, contribution to social service, environmental protection, consumer protection, employee satisfaction, and contribution to economic development – with different weights.

3.2.2 Financial Performance

Profitability: We used returns on equity (ROE), return on assets (ROA) and return on sales (ROS) to measure the firm's profitability. These metrics of accounting profitability are extensively used in previous studies and defined as follows:

ROE = Operating Income/Book Value of Equity,

ROA = Operating Income/Total Assets,

ROS = Operating Income/Sales

Operating income, rather than net income, was used to avoid the potential impact of non-operating revenues and expenses on the firm's financial performance. Since the results are essentially the same

regardless of metrics used, we report only the results from using ROA, which is the most popular measure of profitability in the literature

Cost of Capital: We estimated the firm's cost of capital in two different ways. The first method is to use the traditional weighted average cost of capital (WACC). The other is to use price-earnings ratio for the sake of computational simplicity. Since the results are essentially the same regardless of which estimate is used, we report only the results from using WACC.

Firm Value: Tobin's Q was used as a measure of firm value. As suggested by Chung and Pruitt (1994), we estimate Tobin's Q (TOBINQ) in the following way:

TOBINQ = (Market Value of Equity+ Book Value of Debt)/Book Value of Asset

Market value of equity includes both preferred stock and common stock, and debt includes short-term and long-term debt. Conceptually, TOBINQ is defined as the ratio of market value to replacement cost of total asset. However, book value of asset (debt) was used because of the difficulty in estimating replacement cost of asset (market value of debt).

TOBINQ has been used extensively as a measure of market value-based financial performance. Furthermore, TOBINQ is better measure of the firm's financial performance than the accounting profitability metrics such as ROA and ROE because of the following advantages. First, as a market value-based measure, TOBINQ reflects the shareholders' portion of the firm's financial performance. Second, it is not affected by any choice of or change in accounting method, thereby allowing the comparability of the measure across different firms. Third, it reflects the value of future cash flows rather than past performances as reflected in accounting profitability measures.

3.2.3 Control Variables

To examine the relation between CSR and financial performance, it is necessary to control for other variables that might affect CSR or the firm's financial performance. We used firm size, debt to equity ratio and industry as control variables.

Firm Size: We include firm size (SIZE) as a control variable because larger firms would enjoy higher earnings-generating power from their economy of scale and learning ability than smaller firms. Furthermore, larger firms are more capable of investing in CSR activities. SIZE was measured by the book value of total assets.

Debt to Equity Ratio: This ratio, often called financial leverage (LEV), provides the information on the firm's ability to pay its debt and reflects the firm's risk. Previous studies suggest that LEV is related to CSR as well as financial performance, and Waddock and Grave (1997) used this variable to

control for the risk of firm in their investigation on the link between CSR and financial performance. LEV was measured by the ratio of book value of total debt to the book value of total assets.

Industry: CSR activities depend on the nature of the firm's products. For example, consumers are more interested in environment-friendly products for beverages or appliances. Hence, the firms in the industry of these kinds of products are more subject to potential conflicts with the society and would try to engage in various CSR activities. Sample firms were classified in 9 industry categories based on Korean Standard Industry Code (KSIC). Industry dummy variables (IND) were used only in regression analysis.

Table 2 presents descriptive statistics for financial performance variables and control variables. For example, mean (median) financial performance as measured by accounting profitability (ROA) and market value (TOBINQ) is 0.085 (0.078) and 0.653 (0.570), respectively. The cost of capital (WACC) ranges from 0.033 to 1.720, with mean (median) value of 0.085 (0.081). Descriptive statistics for control variables show large firm size (mean of 10.97 billion Won) and good debt to equity ratio (mean of 0.718 and median of 0.594). This suggests that our sample includes large and financially sound firms.

Table 2. Descriptive Statistics of Independent and Control Variables

Variables	Mean	Std Dev	Min	Median	Max
Profitability (ROA) [1]	0.085	0.058	-0.088	0.078	0.458
Cost of Capital (WACC) [2]	0.085	0.035	0.033	0.081	1.720
Tobin's Q Ratio (TOBINQ) [3]	0.653	0.362	0.117	0.570	3.008
Firm Size (SIZE) [4]	10.970	0.428	0.180	1.851	505.357
Debt to Equity Ratio (LEV) [5]	0.718	0.490	0.061	0.594	3.809

1. Return on Assets=Operating Income/Total Assets
2. Weighted Average Cost of Capital
3. (Market Value of Equity + Total Book Value of Debt)/Total Assets
4. Book Value of Total Assets (in billion Won); Natural Log of Total Assets was used in regression model.
5. Book Value of Debt/Book Value of Equity

3.3 Methodology

3.3.1 Comparison of Financial Performances Across Different CSR Groups

This method conducts t-test to analyze whether significant difference exists between firms with high CSR performance and those with low CSR performance. Each year, sample firms were partitioned into three subgroups based on their CSR performance (KEJI index): i.e., Low, Medium, and High CSR group. The relation between CSR and financial performance was then examined by comparing three measures of financial performance (ROA, WACC, and TOBINQ) between Low CSR and High CSR group, excluding Medium CSR group.

3.3.2 Regression Analysis

As an attempt to investigate whether the firm's CSR activities affect its financial performance, we estimate the following regression model:

$$FP_{it} = \alpha_0 + \alpha_1 CSR_{it} + \alpha_2 SIZE_{it} + \alpha_3 LEV_{it} + \alpha_4 \sum_j IND_{jt} + \varepsilon_{it} \quad (1)$$

Where,

FP = financial performance, as measured by ROA, WACC, and TOBINQ

CSR = natural log of KEJI index,

SIZE= natural log of total assets,

LEV = leverage, as measured by book value of debt to book value of equity,

IND = dummy variable for one of nine industries (j=1…9).

α_i = the partial regression coefficients of variable 'i',

ε = the error term.

Three variables (SIZE, LEV and IND) are included in order to control for potential effects of these factors on financial performance. We estimate the regression model (1) by pooling eight years of cross-sectional data.

4. EMPIRICAL RESULTS

4.1 Mean Difference Comparison Analysis

Table 3 presents the results of comparing financial performances between two CSR subgroups (Low and High) and corresponding t-statistics for three different financial performance metrics (ROA, WACC and TOBINQ). The results are also reported for the whole period as well as for each year.

For total period, High CSR firms show larger mean values of ROA (0.104 vs. 0.070) and TOBINQ (0.739 vs. 0.572) than Low CSR firms, and the differences are statistically significant (α<0.01). However, WACC is significantly larger for High CSR group (0.089) than for Low CSR group (0.080), which is opposite to our prediction.[8]

[8] When PE ratio was used as a metric for the cost of capital, PE ratio was smaller for High CSR group than for Low CSR group, which is consistent with our prediction. However, the difference was not statistically significant.

Analyses for each year also show essentially the same results. High CSR firms exhibit larger ROA each year over 8-year period, and the differences are statistically significant ($\alpha<0.10$) except for the year 1998 and 1999. While weaker than ROA, results for TOBINQ are similar in that High CSR firms have larger TOBINQ each year (except 2001) and the differences are statistically significant ($\alpha<0.05$) over four years (2000, 2002-2004). However, WACC is larger for High CSR firms each year (except 1998) and the differences are statistically significant ($\alpha<0.10$) over four years (2000-2003).

Overall, these results indicate that High CSR firms have larger ROA and TOBINQ, lending support to our hypothesis 1 and 3. Contrary to our prediction, however, High CSR firms have larger WACC, rejecting the hypothesis 2.

Table 3. Comparison of Financial Performances between High and Low CSR Performance Firms

Financial Performance	ROA			WACC			TOBINQ		
Year	High CSR	Low CSR	t-value	High CSR	Low CSR	t-value	High CSR	Low CSR	t-value
1998	0.088	0.078	0.71	0.125	0.131	-1.54	0.753	0.668	1.14
1999	0.078	0.070	0.82	0.103	0.099	1.20	0.768	0.653	1.18
2000	0.122	0.077	3.04***	0.101	0.088	3.77***	0.620	0.488	2.02**
2001	0.116	0.083	2.19**	0.084	0.079	1.71*	0.640	0.645	-0.06
2002	0.129	0.069	5.02***	0.086	0.073	4.75***	0.659	0.443	3.87***
2003	0.095	0.057	3.79**	0.069	0.060	3.22***	0.845	0.520	3.72***
2004	0.102	0.054	3.13***	0.087	0.055	1.61	0.793	0.467	3.85***
2005	0.096	0.073	1.74*	0.066	0.063	1.32	1.018	0.826	1.57
Total	0.104	0.070	7.22***	0.089	0.080	3.06***	0.739	0.572	5.45***

***: Significant at $\alpha<0.01$; **: Significant at $\alpha<0.05$; *: Significant at $\alpha<0.10$

4.2 Regression Analysis

Results in preceding section are based on univariate analyses, which ignore potential effects of other variables on CSR as well as financial performance. As an attempt to investigate if these results hold after controlling for other factors such as SIZE, LEV and IND, we first conduct correlation analysis and then estimate the regression model (1).

Table 4 shows Pearson correlation coefficients among relevant variables. As expected, CSR has significantly positive correlation with ROA, TOBINQ and SIZE. However, positive correlation of CSR with WACC and LEV is contrary to the prediction. Also, there are strong positive correlations among financial performance measures.

Table 4. Correlation Analysis

	CSR	ROA	WACC	TOBINQ	SIZE	LEV
CSR	1.000					
ROA	0.156***	1.000				
WACC	0.218***	0.082**	1.000			
TOBINQ	0.305***	0.260***	0.102***	1.000		
SIZE	0.195***	0.044	-0.087**	0.152***	1.000	
LEV	0.032	-0.050	0.128***	-0.023	0.179***	1.000

***: Significant at $\alpha<0.01$; **: Significant at $\alpha<0.05$; *: Significant at $\alpha<0.10$

Results from estimating the regression model (1) are presented in Table 5.[9] The results are essentially the same as those from mean difference comparison analysis and correlation analysis. When ROA and TOBINQ are used as dependent variable (financial performance), the regression coefficients of CSR have predicted sign (positive) and are statistically significant ($\alpha<0.01$). These findings are consistent with those in previous studies (e.g., McGuire et al., 1988; Herremans et al., 1993; Waddock and Graves, 1997; Park et al., 2004; Tsoutsoura, 2004; Dowell et al., 2000; King and Lenox, 2001; Park and Lee, 2002).

When CSR is regressed on WACC, the coefficient estimate is positive and statistically significant ($\alpha<0.01$). This result is contrary not only to our prediction, but also to the findings of Spicer (1978), McGuire et al. (1988), and Herremans et al. (1993).

Overall, these results lend strong supports to our maintained hypothesis that CSR is positively related to the firm's financial performance as measured by profitability (Hypothesis 1)

[9] Two points should be mentioned for interpreting the results of Table 5. First, although industry dummy variables (IND) were used in estimating the model (1), we did not include their coefficient estimates in the Table for simplicity. Second, when WACC was replaced by PE ratio, the regression coefficient of CSR is negative, as predicted, but statistically insignificant.

and firm value (Hypothesis 3), even after controlling for other factors. While we find similar results to those of previous studies, our results are stronger in the following ways. First, we consider potential effects of control variables on the CSR-financial performance relationship by estimating a multiple regression model. Second, we used market value (TOBINQ) as well as accounting profitability (ROA) to measure financial performance. Third, our use of total KEJI index score as a measure of CSR is different from prior studies (e.g., Park and Lee, 2002; Park et al., 2004) because they focused only on the component of KEJI index (i.e., environmental performance).

Our results, however, do not support the prediction that CSR is negatively related to the firm's financial performance as measured by cost of capital (Hypothesis 2). There are several plausible explanations for this finding. First, CSR performance may not be useful information to the investors in Korean capital market. Second, our use of WACC as the cost of capital may be subject to measurement error problem.

Table 5. Relation between CSR and Financial Performance: Regression Analysis [1]

$$FP_{it} = \alpha_0 + \alpha_1 CSR_{it} + \alpha_2 SIZE_{it} + \alpha_3 LEV_{it} + \alpha_4 \sum_j IND_{jt} + \varepsilon_{it}$$

Financial Performance (FP)	ROA	WACC	TOBINQ
Independent Variables	Coefficients (t-value)	Coefficients (t-value)	Coefficients (t-value)
Intercept	-0.470 (3.54)***	-0.361 (4.54)***	-5.434 (6.96)***
CSR	0.129 (3.91)***	0.126 (6.37)***	1.278 (6.57)***
SIZE	0.001 (0.91)	-0.004 (4.12)***	0.046 (4.69)***
LEV	-0.008 (2.05)**	0.011 (4.59)***	-0.027 (1.09)
Adj. R^2	0.054	0.089	0.161

1. CSR= natural log of KEJI Score; SIZE= natural log of total assets;

LEV= Book Value of Debt/Book Value of Equity; IND= dummy variable for one of nine industries.

2. ***: Significant at $\alpha<0.01$; **: Significant at $\alpha<0.05$; *: Significant at $\alpha<0.10$

5. CONCLUSION

The purpose of this study is to examine whether CSR is systematically related to financial performance. Based on the premise that CSR may play the role of mitigating or preventing potential conflicts between firms and their stakeholders, we first develop a theoretical framework for the CSR-firm value relation. Using this framework, we then derive the hypotheses that firms with higher CSR performance would have higher profitability, lower cost of capital, and higher firm values than those with

lower CSR performance. These hypotheses were tested using 130 Korean firms over eight-year period (1998-2005). An index published by Korean Economic Justice Institute (KEJI) was used as the measure of CSR performance.

We have found that CSR is positively related to financial performance as measured by accounting profitability (return on assets) and firm value (Tobin's Q). However, CSR is also positively related to the cost of capital, which is contrary to our hypothesis. These results are robust across different measures of variables and testing methodologies.

Our findings have some implications for business practices. First of all, the positive relation between CSR and profitability/firm value suggests that CSR activities are not an expense, as argued by some skeptics, but an investment which can eventually contribute to the increase in firm value. Second, our results would provide the firms' CEOs new insights about CSR and encourage them to engage in various CSR activities as a business strategy.

Several related issues are left for future research. First, it has not been fully examined whether CSR and financial performance have any causal relationship. For example, financially sound firms may be more active in CSR activities, which in turn would bring even better financial results. Investigation into a lead-lag relationship between CSR and financial performance or the use of simultaneous equation system may be useful approaches to address this issue. Second, although KEJI index, with its long history of publication, appears to be most reliable data source, its reliability as a proxy for CSR is an open question. Therefore, it is necessary to conduct more research on the development of a comprehensive CSR measure or the comparison of existing CSR measures. Finally, firm characteristics variables such as CEO's management philosophy, degree of foreign exposure, and foreign investor ownership may affect the firm's CSR strategy. Hence, investigation into the effects of these factors on CSR and its relationship with financial performance will provide further insights into the relation between CSR and financial performance.

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