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Abstract: This paper studies the empirical relation between corporate social responsibility (CSR) and corporate financial performance in Korea using a sample of 1122 firm-years during 2002-2008. We measure corporate social responsibility by both an equal-weighted CSR index and a stakeholder-weighted CSR index suggested by Akpinar et al. (2008). Corporate financial performance is measured by ROE, ROA and Tobin's Q. We find a positive and significant relation between corporate financial performance and the stakeholder-weighted CSR index, but not the equal-weighted CSR index. This finding is robust to alternative model specifications and several additional tests, providing evidence in support of instrumental stakeholder theory.

Key Words: corporate social responsibility, corporate financial performance, KEJI index, instrumental stakeholder theory

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I. Introduction

Corporate social responsibility (CSR) is now seen as an integral part of corporate strategy. For example, KPMG (2008) reports that about three-quarters of Global Fortune 250 companies surveyed during 2007-2008 have a publicly communicated CSR strategy that includes defined objectives. According to the Economist Intelligence Unit's 2007 survey (*The Economist*, 2008), nearly 30 percent of surveyed global executives consider CSR as the highest priority issue for their organizations with further 40 percent assigning it high priority. Another evidence for the growing importance of CSR is the proliferation of a new corporate title such as chief sustainability officer or chief responsibility officer ('Companies giving green an office', *The New York Times*, July 3, 2007; 'The old future is gone', *Forbes*, April 1, 2008),[2] or the rapidly spreading Socially Responsible Investment (SRI) movement that aims at combining investors' financial objectives with their concerns about social, environmental, and ethical issues (Eurosif, 2003; Lewis and Mackenzi, 2000; SRI Research, 2001-2006).

Examples of CSR activities abound. They range from Intel's education and development programs in countries such as Afghanistan, Cambodia, Haiti and Uganda, General Electric's charitable donations and investment in environmentally friendly practices and products ('Surprising survivors: corporate do-gooders', *Fortune*, January 20, 2009), Pfizer's supply of free name-brand drugs to newly unemployed customers ('Why doing good is good for business', *Fortune*, February 2, 2010), to Starbucks' offering of health-care benefits and stock to even part-time employees and promotion of sound environmental practices by forging partnerships with coffee growers ('How UPS, Starbucks, Disney do good', *Fortune*, February 25, 2006). In 2008, the jury of the Internatinal Design Excellence Awards also stressed the importance of socially responsible product design; it recognized products that promoted sustainability, helped the electoral process, eradicated disease, bolstered village education for the poor, etc. ('IDEA Design Trend: Social Responsibility', *BusinessWeek*, July 17, 2008). Despite the recent financial crunch, many large corporations have been sustaining or expanding their CSR budgets. In Australia too, companies such as BHP and Rio Tinto have been actively engaging in various community education and development programs in

[2] Chief sustainability officer, usually with the rank of vice president or higher, is in charge of overall CSR programs in the corporation. As of 2005, almost all of the 150 largest companies in the world had a chief sustainability officer (Willard, 2005).

countries where their mining activities could have negative effects.[3]

CSR can be defined as actions that appear to further some social good, beyond the interests of the firm and that which is required by law (McWilliams and Siegel, 2001). Important in this definition is that CSR activities are on a voluntary basis, going beyond the firm's legal and contractual obligations. As such it involves a wide range of activities such as being employee-friendly, environment-friendly, mindful of ethics, respectful of communities where the firms' plants are located, and even investor-friendly (Bénabou and Tirole, 2010). If CSR activities are beyond the firm's legal obligation and may require some sacrifice in short-term profits, then why do firms promote CSR? Is sacrifice of short-term profits compensated by improvement in firms' long-term financial performance? Or are they purely feel-good activities initiated by corporate insiders?

In academic circles, extensive research has been conducted to assess the empirical association between CSR and corporate financial performance under diverse geographical contexts. The results of previous studies, however, are largely indeterminate. For example, according to 'instrumental stakeholder theory' (Jones, 1995), companies with superior social performance tend to perform better financially by attracting socially responsible consumers (Bagnoli and Watts, 2003), alleviating the threat of regulation (Lev et al., 2008), improving their reputation with consumers (Orlitzky et al., 2003), or soothing concerns from activists and non-governmental organizations (Baron, 2001). On the other hand, other researchers argue that trying to satisfy the conflicting objectives of different stakeholders might result in inefficient use of resources and eventual deterioration of financial performance, and that the costs incurred from socially responsible actions may put the firms at an economic disadvantage (Aupperle et al., 1985; Ullman, 1985). Still others argue that it is not possible to determine the relation between CSR and corporate financial performance since there are so many intervening variables that are hard to control (Fombrun and Shanley, 1990). It short, it is a moot question whether CSR contributes to or harms corporate financial performance for all companies or for all types of CSR activities.

This research adds to the empirical literature on the relation between CSR and corporate financial performance by providing the first comprehensive evidence from Korea using multi-dimensional CSR measures. Business climate in Korea has traditionally put more focus on economic value than on softer values such as fair distribution of wealth, environmental protection, and community relations etc. Such

[3] Rio Tinto made a total community contribution of $134 million in 2008, the largest component being in various community education programs (http://www.riotinto.com/ourapproach/17215_communities_17356.asp).
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emphasis upon financial success still lingers on particularly when the pursuit of profit and social goals tend to collide with each other. The two recent cases of west coast oil spill and a large-scale money laundering committed by Korea's leading conglomerates provide telling evidence in this regard.[4] These incidents have provided a momentum for heated debate about CSR in public arena, led to a rise in public outcry for changing the old-fashioned way of doing business, and increased concern for environment and transparency in corporate governance. Moreover, with its first sustainability report published in 2003, CSR movements emerged as a major social agenda in Korea. In this sense, the Korean corporate environment provides a pertinent test case for examining the empirical relation between corporate financial prosperity and the extent of corporate social initiatives.

Despite the growing importance of CSR in Korea, existing Korean studies are focused only on corporate environmental performance (Choi et al., 2008; Choi and Kwak, 2010 among others). Empirical research examining the association between multi-dimensional CSR activities and corporate financial performance in Korea does not exist to our knowledge. As such, this study is the first that provides the Korean evidence on the relation between multi-dimensional CSR and corporate financial performance. Specifically, we measure CSR performance by the Korea Economic Justice Institute (KEJI) index developed by the Citizens' Coalition for Economic Justice (CCEJ). The CCEJ is one of Korea's leading NGOs, and it established the KEJI for the purpose of evaluating moral management and social responsibility of Korea's leading corporations.[5] The KEJI index is the first comprehensive, multi-dimensional CSR index developed in Korea, and is comparable to the Council on Economic Priorities (CEP) index in the US, the Corporate Responsibility Index in Australia, and the Asahi Foundation index of Japan.

Our main findings can be summarized as follows. There is a positive and significant relation between CSR and corporate financial performance when CSR is measured by a stakeholder-weighted index that takes into account the degree with which

[4] On December the 7th, 2007, a large scale oil-spill accident occurred off the coast of Tae-an, South Korea, caused by reckless sailing of a tugboat owned by one of the leading Korean shipbuilders amidst hostile weather condition. The crude oil leakage of about 12,000 tons was the largest in Korea, resulting in the devastation of regional economy with the estimated total damage of $519 million, not to mention the colossal damage to the ecosystem. The company involved paid only $5 million to the affected community, and the compensation case is still unresolved as of early 2010. In another case involving a massive earnings manipulation amounting to some $1.2 billion, committed by another leading Korean conglomerate in 2003, the CEO and other responsible executives were sentenced to probation, on the ground that the accounting fraud was intended to help alleviate the financial difficulties incumbent upon the whole group.

[5] More details on the CCEJ and KEJI can be found at http://www.ccej.or.kr/English/.

specific stakeholder groups are prioritized. When CSR is measured by an equal-weighted index, the relation is insignificant. These results hold for all three financial performance variables that we use, i.e., ROE, ROA and Tobin's Q. The positive association between the stakeholder-weighted CSR index and corporate financial performance is robust to alternative model specifications and several additional tests, further strengthening the case for using stakeholder-weighted metric in measuring CSR. In an additional analysis of the bi-directional relation between CSR and corporate financial performance after controlling for potential endogeneity, we also find that high levels of corporate financial performance have a positive impact on the stakeholder-weighted CSR index. Thus we conclude that, on average, Korean firms can do well by doing good on the one hand, and firms that do well can spend money for good causes on the other, demonstrating the existence of a virtuous cycle.

The remainder of the paper is organized as follows. Section 2 reviews the related literature. Section 3 describes research design while Section 4 reports the empirical findings. Section 5 concludes the paper with some discussions.

II. Related Literature

The empirical literature examining the relation between CSR and corporate financial performance is extensive. As discussed previously, however, the results are generally mixed, which could be attributed to the various ways corporate financial performance and CSR have been operationally defined (Carroll, 1979; Orlitzky et al., 2003), to the lack of appropriate statistical controls (Margolis and Walsh, 2003; Wood and Jones, 1995), or to the 'stakeholder misalignment' problem (Wood and Jones, 1995; Akpinar et al., 2008).

Typically used firm performance variables are accounting-based measures such as ROE and ROA, and the market-based measure such as Tobin's Q. As for corporate social performance, existing studies have used a diversity of measures. Earlier studies relied on various reputational indices, such as Moskowitz's (1972, 1975) tripartite ratings of 'outstanding', 'honorable mention', and 'worst' companies (Cochran and Wood 1984; Sturdivant and Ginter 1997), or the Fortune's ratings of a corporation's responsibility to the community and environment (Conine and Madden 1987; Fombrun and Shanley 1990; McGuire et al. 1998). Another widely used index is the measure provided by the Council on Economic Priorities (CEP) based on social audits. Various studies have used the CEP social audit ranking of companies' pollution records (Bragdon and Marlin 1972; Fogler and Nutt 1975; Spicer 1978; Blackburn et al., 1994).

The KLD index is one of the most recent measures designed to explicitly evaluate multiple dimensions of a company's social and financial performance.[6] Many recent studies rely on the KLD index to measure CSR in investigating the relation between CSR and CFP (McWilliams et al., 2006; Orlitzky et al., 2003; Akpinar et al., 2008; Waddock and Graves, 1997; Berman et al., 1999).

Table 1 provides a summary of selected empirical studies where the second column indicates the statistical relation between CSR and corporate financial performance. As shown in the table, some studies report a positive relation while others report a mixed or negative relation. In regards to the mixed evidence, McWilliams and Siegel (2000) stress the importance of including other variables that are acknowledged to be important determinants of corporate financial performance. For example, they show that, once R&D investment is included in the equation, the positive relation between CSR and corporate financial performance is no longer significant.

[Table 1 goes about here.]

The so-called 'stakeholder misalignment' problem suggested by Wood and Jones (1995) is that of relating stakeholder-specific variables to a set of aggregated stakeholder variables ignoring many differences between different stakeholder groups. They argue that the research on CSR should take into account the fact that a company should weigh which sub-dimensions of social performance are perceived to be important by its stakeholders. To circumvent the stakeholder misalignment problem, Lev et al. (2008) classify firms into two groups based on the degree of sensitivity to consumer perceptions. The first group consists of firms belonging to industries where sensitivity to consumer perception is high such as consumer goods and finance industries, and the second group has firms operating in industries where sensitivity to consumer perception is low. They empirically show that firms producing goods and services purchased by individual consumers are more likely to enhance their revenue from having a reputation as a good corporate citizen than firms that produce goods and services for industrial or government use. Akpinar et al. (2008) measure CSR by a stakeholder-weighted CSR index which aggregates the index scores for CSR sub-dimensions after taking into account stakeholder conflicts and varying importance of different CSR sub-dimensions in different industries. They find a significantly positive association between CSR and corporate financial performance when the stakeholder-

[6] The KLD index, developed by Kinder, Lydenberg, and Domini, rates companies based on five criteria, along a scale of -2 to +2, depending upon their social performance, and provides data on financial performance of socially screened portfolios. For details, see http://www.kld.com/indexes/index.html.

weighted CSR index is used to measure CSR. Our paper is also in the same vein as Akpinar et al. (2008) in that we develop a stakeholder-weighted CSR index.

With a steady increase in the number and kind of stakeholder groups interested in broader corporate social performance (Shapiro, 1992), a number of studies have elaborated on or empirically tested the instrumental stakeholder theory (Alexander and Buchholz, 1978; Berman et al., 1999; Bowman and Haire, 1975; Jones, 1995; Margolis and Walsh, 2003; Waddock and Graves, 1997). Graves and Waddock (1994), and Teoh and Shiu (1990) argue that institutional investors are favorably inclined toward companies with better social performance when other factors are held constant and independent information on social performance is available. Bowman and Haire (1975) contend that other stakeholders in addition to stockholders and bondholders may regard CSR as an indication of management skill. Alexander and Buchholz (1978) also suggest that CSR makes firms an attractive investment target since investors evaluate socially aware and concerned management as possessing the requisite skill to run a superior company. Similarly, Spicer (1978) finds a positive association between stock price and corporate social performance and suggests that the latter provides information about management competence. Along the same line, Waddock and Graves (1997) report a positive relation between CSR and the quality of management, where the latter is measured by the *Fortune* reputation survey ranking.

Among related Korean research, Choi et al. (2008) study the relation between corporate environmental disclosure and financial performance over the seven-year period following the financial crisis of 1997. They find no significant relation between the quality of disclosure and economic performance while corporate size and industry profile are shown to be the most significant factor behind corporate environmental disclosure. More recently, Choi and Kwak (2010) study the relation between the level of corporate environmental disclosure and environmental performance using the sample of 180 cases of stand-alone environmental reports and/or environmental information disclosed on corporate websites. They document a positive association between corporate environmental performance and the level of discretionary environmental disclosure. As mentioned previously, however, we are not aware of any Korean studies that use a comprehensive, multi-dimensional CSR measure in investigating the relation between CSR and corporate financial performance.

III. The Empirical Model and Variable Description

3.1 The Empirical model

We start with the following cross-sectional regression model:

$$CFP_{it} = \beta_0 + \beta_1 CSRindex_{it} + \sum_j \gamma_j CONTROL_{ijt} + \varepsilon_{it} \quad (1)$$

where CFP denotes corporate financial performance, CSRindex denotes the corporate social responsibility index, CONTROL stands for various control variables, subscripts index firm (i) and time (t), and ε_{it} is an i.i.d. error term. Equation (1) is designed to investigate the relation between CFP and CSR index on a cross-sectional basis where the former is measured using firm-level performance measures such as accounting- and/or market-based indicators. However, cross-sectional regression models are not likely to control other variables that are acknowledged to be major determinants of corporate financial performance over a period of time.

We thus employ Carhart's (1997) four-factor market model in addition to equation (1) in order to see whether market-based financial performance incorporates corporate social performance as well. To use Carhart's four-factor model, we rank firms according to their CSR index order and construct two portfolios by including firms from the first decile in the top portfolio and those from the tenth decile in the bottom portfolio. We then calculate the difference in monthly returns between the top and bottom portfolios, which shows a return on hedge portfolio that can be earned by taking a long position in the most socially responsible firms and a short position in the least socially responsible counterparts. Next, to obtain factor-mimicking portfolios on a monthly basis, we reclassify the firms belonging to the top and bottom portfolios according to each of the four factors suggested by Carhart. To control for the effects of these factors, the difference in monthly returns between the upper and lower halves of respective factor groups is used as a dependent variable. Our focus is on the intercept term of the four-factor market model since it tells us whether the CSR-based hedge portfolio earns a positive return after controlling for the four factors included in the model. Our second model to be estimated is as follows:

$$R_t = \alpha_0 + \alpha_1 RMRF_t + \alpha_2 SMB_t + \alpha_3 HML_t + \alpha_4 Momentum_t + \eta_t \quad (2)$$

where R_t is the difference in monthly returns between the top and bottom portfolios, $RMRF_t$ is the portfolio return that mimics the market risk premium factor, SMB_t is the portfolio return mimicking the size factor, HML_t is the portfolio return mimicking the growth factor, and $Momentum_t$ is the portfolio return mimicking the momentum factor. The intercept term α_0 in equation (2) represents the abnormal return on a zero-

investment strategy that buys the top portfolio and sells short the bottom portfolio. If it is positive and significant, then we can say that there is a difference in market performance of top and bottom portfolios even after removing the influence from the four factors. Such a difference can be due to the difference in CSR since our hedge portfolios are based on firms' CSR index scores.

3.2 Variable Description

3.2.1 Corporate Financial Performance

For corporate financial performance, we follow the literature and use both accounting-based and market-based financial performance measures. As accounting-based performance measures, we use ROA = EBIT / total asset, and ROE = EBIT / owner's capital. Our market-based performance measure is Tobin's Q following Chung and Pruitt's (1994) definition: Tobin's Q = (market value of common stock + market value of preferred stock + current liability − current asset + long-term debt) / book value of total asset.

3.2.2 Corporate Social Responsibility

To measure corporate social performance by Korean firms, we use two proxies based on the Korea Economic Justice Institute (KEJI) index developed by the Citizens' Coalition for Economic Justice. The KEJI index, introduced in 1991, is the first comprehensive evaluation scheme for corporate business ethics and social responsibility developed and implemented in Korea.[7] Each year, the KEJI selects annual Economic Justice Award winners. The KEJI's procedure to select award winners consists of both quantitative and qualitative evaluation. Quantitative evaluation is applied to Korean companies listed on the Korea Exchange (KRX) on the basis of annual reports, news reports, and other information available from governmental authorities such as the National Tax Service, the Fair Trade Commission, and the KRX, excluding those firms under serious financial trouble.[8] Qualitative evaluation is subsequently conducted by sending questionnaires to the overall top 10% firms and top 20% firms for each of the

[7] The index was subsequently modified and refined in 1993 based on wide consultation with the representatives from academia, journalists, governmental authorities, labor union, NGOs, business community, and general public.

[8] Criteria for exclusion include the following: three consecutive years of net losses, less than 1.0 debt-to-equity ratio, lower than 1.0 times-interest-rate (interest expense plus EBIT divided by EBIT), merger target, and newly listed companies whose financial data are unavailable.

Korean SIC-based industry based on their KEJI index scores. The main purpose of qualitative evaluation is to collect non-public information to determine final award winners. The KEJI annually discloses the scores of top 200 companies in its brochure with the names of three award winners.

The KEJI index is comparable to the CEP index in the US, the Corporate Responsibility Index in Australia, the Asahi Foundation index of Japan, and several other corporate ethics indices of European countries. One of the distinctive features of the KEJI index is that it is a product of an independent rating service that focuses on the evaluation of multidimensional corporate social performance. It gives a score on seven individual categories of CSR: soundness, fairness, contribution to society, consumer protection, environmental protection, employee satisfaction, and contribution to economy.[9] We develop two proxies based on the KEJI index. As explained in footnote 8, the original KEJI index assigns different maximum scores to different individual categories, which is rather arbitrary. Thus we converted original scores for individual categories to scores that take the maximum value of 100. For example, a score of 20 for the soundness category is converted to 20*(100/25) = 80 since the maximum score for the soundness category is 25. This way, the maximum total score becomes 700.

The first proxy is defined as the simple sum of scores for seven categories of the KEJI index:

$$\text{Equal - weighted CSR index (EW)}_{\text{it}} = \sum_{k=1}^{7} x_{ikt} \qquad (3)$$

where x_{ikt} is the score for firm i, the KEJI category k for year t, which takes the maximum value of 100 as described above. This approach has an obvious drawback in that it assumes all KEJI categories are equally important to all stakeholders. As discussed in the instrumental stakeholder theory, firms with different interests may need to attend to different stakeholders differently (Wood and Jones, 1995). Depending on the specific areas of social responsibility considered to be important by major stakeholders,

[9] More specifically, the soundness category comprises stockholder composition, investment, financing, and is assigned a maximum score of 25. The fairness category consists of fair trade, economic concentration, transparency, supplier relationship, and is assigned a maximum score of 15. The contribution to society category considers care for minority groups, corporate donation, and is assigned a maximum score of 10. The consumer protection category comprises protection of consumer sovereignty, product quality and promotion with a maximum score of 10. The environmental protection category covers environmental improvement efforts, environmental friendliness, and compliance with environmental regulation with a maximum score of 15. The employee satisfaction category consists of workplace safety, human resource investment, wage and welfare, labor-management relationship, and gender equality with a maximum score of 15. The contribution to economy category relates to R&D efforts, operating performance, and contribution to economy through tax payment, productivity growth and export, for which a maximum score of 10 is given. More details on the KEJI index and its scoring system are available from the authors.

firms may exert different levels of effort to different categories of social responsibility, hence are likely to receive different scores for different CSR categories. Our first proxy for CSR suffers from the lack of a weighting scheme for the different categories of CSR. We thus introduce weighted measures of CSR, as proposed by Akpinar et al. (2008).

Akpinar et al. (2008) argue that stakeholder-weighted CSR index is a new CSR measure that reflects the relative importance of each stakeholder group based on the industry to which individual firms belong. In order to operationalize the second proxy for CSR, we first classify our sample firms into eighteen industries according to the Korean Standard Industry Classification codes. After this, the KEJI index score for each of the seven categories is summed up to obtain an aggregate score of social performance for that particular industry-year. Then individual sums for each of the seven categories are divided by this overall sum to compute the weights for each of the seven categories for every industry-year. After having the weights for every industry-year, we multiply the raw KEJI index scores with associated weights to obtain the stakeholder-weighted CSR index for every firm-year:

$$\text{Stakeholder - weighted CSR index (SW)}_{\text{it}} = \sum_{k=1}^{7} x_{ijkt} \times Weight_{jkt} \qquad (4)$$

where x_{ijkt} is the score for firm i in industry j, the KEJI category k for year t, $Weight_{jkt} = \frac{Average_{jkt}}{\sum_{k=1}^{7} Average_{jkt}}$, and $Average_{jkt}$ is the average score for industry j, the KEJI category k for year t. As is clear from the definition, the weight measures how an industry scores in a particular KEJI category relative to the average performance of that industry in overall CSR. To the extent that different industries perform better in different KEJI categories possibly because their CSR activities are directed towards the interests of their primary stakeholders, one can interpret these weights as reflecting varying stakeholder interests. Indeed our data lend support to this interpretation: environmental protection is given the highest weight in the chemical and hard-coal industry, employee satisfaction in the metal industry, and consumer protection in the retail trade industry.[10]

3.2.3 Control Variables

We use several control variables that are consistently shown to be related to

[10] As a referee correctly pointed out, an alternative interpretation of these weights is the relative competitive position of each industry on their CSR activities. Our interpretation is not inconsistent with this interpretation if we accept the assumption, which we believe is innocuous, that an industry's CSR activities are geared towards the interests of its primary stakeholders. This assumption is also supported by McWilliams et al. (2006).

corporate financial performance. These control variables can be broadly broken down into two groups of firm characteristics and management preferences. The firm characteristics group includes size (Arlow and Gannon, 1982; Shin and Stulz, 1998), risk (McWilliams and Siegel, 2000) and sales growth (De, 1992). To control for the past corporate performance, we also lag sales growth by one year and include it as an additional control. We take logarithm of total assets to measure firm size and define firm risk using long term debt divided by total asset. We include sales growth for year t using log of sales in year t divided by sales of year t-1. We also include lagged sales growth for year t, which is measured by sales of year t-1 divided by sales of year t-2. Management preference variables include R&D expenditure standardized by total assets (McWilliams and Siegel, 2000). Lastly, we also control for industry and year effects by including 8 industry- and 2 year-dummy variables to distinguish 9 industries and 3 years under coverage in this study. Thus our control variables are SIZE = Log (total asset), RISK = Long-term debt / total asset, $\Delta Sales_t$ = log (Sales for year t / Sales for year t-1), $\Delta Sales_{t-1}$ = log (Sales for year t-1 / Sales for year t-2), and R&D = R&D expenditure / total asset.

3.2.4 Variables Used in Carhart's (1997) Four-Factor Model

In estimating Carhart's (1997) four-factor model (equation (2)), we measure R_t as the difference in monthly returns between top and bottom portfolios and $RMRF_t$ as the market return in month t minus the risk-free rate. SMB_t (small minus big), HML_t (high minus low), and $Momentum_t$ are the month t returns on zero-investment factor-mimicking portfolios designed to capture size, book-to-market, and momentum effects, respectively. Each of the factor-mimicking portfolios is measured by computing the differences in monthly returns between the upper and lower half of the firms rank-ordered according to each of the factors.

IV. Empirical Results

4.1 Data and Descriptive Statistics

Our sample is drawn from companies listed on the Korea Exchange (KRX)[11] for

[11] The Korea Exchange (KRX) was created through the integration of the three existing Korean spot & futures exchanges (Korea Stock Exchange, Korea Futures Exchange and KOSDAQ) under the Korea Stock & Futures Exchange Act. As of 31 December 2007, the KRX had 1,757 listed companies with a combined market capitalization of $1.1 trillion. For more details, see http://www.krx.co.kr.

which the KEJI index is available. While the selection of our sample is inevitably limited to those firms that appear on the KEJI index, hence subject to possible selection bias, we are not aware of any alternative reliable measures of CSR in Korea comparable to the KEJI index in its coverage, and measurement validity. For our sample firms, financial data are retrieved from the TS-2000 database.[12] Up to 2001, the KEJI index had only six categories and from 2002, the index was expanded to include an additional category. In order to maintain consistency of our data, we have used the seven-category KEJI index scores from 2002. Thus our sample period covers seven years from 2002 to 2008 and the final sample includes 1,222 firm-years from both manufacturing and non-manufacturing industries.

We classify sample firms into eighteen industries using the Korean Standard Industry Classification codes. The distribution of sample firms based on their industry classification is shown in Table 2, while the weights for each of the seven KEJI categories for each industry are shown in Table 3. These weights are used to calculate the stakeholder-weighted CSR index on an annual basis. As shown in Table 3, environmental protection is given the highest weight in the chemical and hard-coal industry (weight = 0.19) while consumer protection is the highest in the retail trade industry (weight = 0.17).

[Tables 2 and 3 go about here.]

Descriptive statistics for the variables used in the estimation are summarized in Table 4. The standard deviations of EW and SW are relatively small, suggesting that our sample consists of relatively homogeneous group of firms in their perceived CSR activities.

[Table 4 goes about here.]

4.2 Correlation and Analysis of variance

As discussed previously, good management theory or instrumental stakeholder theory predict a positive relation between corporate social performance and financial performance. Table 5 reports Pearson correlation coefficients and provides some preliminary evidence in support of this. While EW is shown to be positively

[12] TS-2000 stands for Business Information Total Solution 2000, which is a Korean version of CRSP database, developed by Korea Listed Companies Association. It provides financial information on KRX- and KOSDAQ-listed companies and industrial data for statistics and analysis.

correlated with ROA only, SW is positively correlated with all three performance measures. SIZE is positively correlated with both EW and SW, which is consistent with a commonly shared view that, as firm size increases, corporate responsibility tends to increase as well.

[Table 5 goes about here.]

Using a series of one-way ANOVA tests, Table 6 examines the mean differences among three different groups of CSR for corporate financial performance. In panel A, we used the equal-weighted CSR index to rank the sample firms, while in panel B, we used the stakeholder-weighted CSR index. In both panels, corporate financial performance for firms with higher CSR index is shown to be higher than those with lower CSR index. This is true for all three financial performance variables and the difference among the three groups of firms is statistically significant. In sum, both Tables 5 and 6 seem to suggest a positive relation between CSR and corporate financial performance. We examine this more rigorously below.

[Table 6 goes about here.]

4.3 Cross-sectional Regression Analysis

This section reports the results from the cross-sectional regression analysis, specified in equation (1). The dependent variable is corporate financial performance, measured by ROA, ROE, or Tobin's Q. In Table 7, Model 1 reports the results when the equal-weighted CSR index (EW) and five control variables are used as independent variables, while Model 2 reports the results when the stakeholder-weighted CSR index (SW) is used along with the same set of control variables. Both models used dummy variables to control for industry- and year-effects, but the results are not shown in the table for brevity. Both models are shown to have significant explanatory power at the conventional level. However, the coefficient to EW is not significant in Model 1 regardless of how corporate financial performance is measured. On the other hand, Model 2 shows that the coefficient to SW is positive and statistically significant for all three financial performance variables. This implies that, when CSR is measured while taking into account firm-specific stakeholders' interests, there is a positive association between corporate financial performance and CSR. We do note, however, that our results should not be interpreted to render direct support to good management theory or

instrumental stakeholder theory. While both theories suggest a positive link from CSR to corporate financial performance, our results do not imply causality in either direction, for which we need longer and more comprehensive time-series data. We discuss this issue in Section 4.5.

[Table 7 goes about here.]

4.4 Estimation of the Four-factor Model

Table 8 reports the estimation results from Carhart's (1997) four-factor model, specified in equation (2). As discussed previously, the dependent variable in this regression is the difference in monthly returns between top and bottom portfolios ranked based on their KEJI indices, and independent variables are RMRF, SMB, HML, and Momentum. The intercept term α_0 captures the abnormal return on the zero-investment strategy of buying the top decile portfolio and selling short the bottom decile portfolio. We estimated two models using the equal-weighted and stakeholder-weighted CSR indices to form top and bottom portfolios.

Table 8 shows that α_0 is not significantly different from zero (t = 0.79) when the sample firms are ranked based on the equal-weighted CSR index, but it is positive and significant (t = 3.98) when the stakeholder-weighted CSR index is used to rank the sample firms. We can interpret the latter result to imply that there is a 31.1 basis point difference in monthly returns between the two portfolios that can be explained by the firms' corporate social performance. This is in addition to the difference that can be explained by Carhart's four factors. Once again, our result indicates a positive association between CSR and corporate financial performance when firms prioritize their CSR activities based on their stakeholder interests.

[Table 8 goes about here.]

4.5 Additional Analyses

As discussed previously, the various theories in the management literature predict different links between corporate social performance and financial performance. On the one hand, good management theory or instrumental stakeholder theory suggest a positive link from corporate social performance to financial performance. According to slack resources theory (Ullmann, 1985; Waddock and Graves 1997), however, the link

is reversed: financially healthy firms can afford to engage in more CSR activities, which in turn are likely to improve financial performance further, particularly when the CSR activities are properly directed toward stakeholder preferences.

As an additional test, we address such an endogeneity issue by estimating the following simultaneous equation system after controlling for endogeneity by employing two-stage least squares (2SLS) regression analysis:

Equation 1: $CSRindex_t = \alpha_0 + \alpha_1 CFP_t + \alpha_2 CSRindex_{t-1} + \alpha_3 SIZE_t + \varepsilon_{1t}$

Equation 2:

$$CFP_t = \beta_0 + \beta_1 CSRindex_t + \beta_2 CSRindex_{t-1} + \beta_3 SIZE_t + \beta_4 \Delta Sales_{t-1} + \beta_5 \Delta Sales_t + \beta_6 RISK_t + \beta_7 R\&D_t + \varepsilon_{2t} \quad (5)$$

The results are presented in Table 9[13]. As can be seen in panel B of the table, only the estimated coefficients for stakeholder-weighted CSR (SW) are positive and statistically significant, which is consistent with previous results. Panel A also shows that high levels of financial performance provide slack resources necessary to engage in CSR with which stakeholders are prioritized. In a nutshell, Table 9 shows that CSR activities which take stakeholders' priority into account can have a positive impact upon corporate financial performance, which in turn feeds back to stakeholder-oriented CSR activities. These results support Waddock and Graves' (1997) argument in favor of a 'virtuous cycle' between CSR and corporate financial performance.

[Table 9 goes about here.]

To address any statistical causation between CSR and corporate financial performance, we also conduct Granger causality tests. Because the selection of firms on the KEJI index varies year to year, we could identify only 40 firms in our sample that had seven consecutive years of time-series data on the KEJI index. Partial results from Granger causality tests for this sub-sample are presented in Table 10 where financial performance is measured by Tobin's Q. Panels A and B show that causality runs in neither direction when CSR is measured by EW while Panels C and D suggest bilateral

[13] We also conducted Hausman's test to detect the presence of any endogenous relation between CSR and CFP. Untabulated results of Hausman's test indicate that there is endogeneity between CSR and CFP. This result suggests that it is necessary to employ the simultaneous equations model as in (5).

causality when CSR is measured by SW. Once more, these results provide support for the virtuous cycle between CSR and corporate financial performance.[14]

[Table 10 goes about here.]

Finally, we conduct further analyses to check the robustness of our findings. First, for each CSR index presented in Table 6, we replicate the difference test across the four CSR groups using non-parametric Kruskal-Wallis test. The results from this test are qualitatively similar, and with comparable level of significance, to those reported in the parametric ANOVA-test.[15] Second, we replicate our regressions by calculating EW and SW for each of the seven CSR categories in the KEJI index and use them as the CSR variable. Again the results are similar in that there is a positive and significant association between corporate financial performance and only the stakeholder-weighted CSR index except for the two categories of contribution to society and consumer protection. Partial results of this analysis are provided in Table 11 where financial performance is measure by Tobin's Q.

[Table 11 goes about here.]

V. Conclusion

The existing studies on the relation between CSR and corporate financial performance provide mixed results. This study was motivated by the lack of consistent evidence on the one hand and the relative paucity of research in the Korean context on the other. We have investigated the relation between CSR and corporate financial performance using a sample of Korean firms where CSR is measured by the KEJI index, the first comprehensive, multi-dimensional CSR measure in Korea. The main contribution of this paper is two-fold. First, our research design improves upon many existing studies in several ways by (i) circumventing the stakeholder misalignment problem with use of the stakeholder-weighted CSR index, (ii) employing Carhart's (1997) four-factor model to control for other variables that are known to be important determinants of corporate financial performance, (iii) conducting additional analysis of bi-directional relation between CSR and corporate financial performance after controlling for potential endogeneity, and (iv) carrying out Granger causality tests for

[14] We also replicated the analysis using ROA and ROE and arrived at qualitatively similar results, which are available from the authors.
[15] The results are not reported, but available from the authors.

CSR and corporate financial performance. Second, our study provides the first comprehensive evidence from Korea on the relation between multi-dimensional CSR and corporate financial performance.

Our main finding is that there is a positive and significant association between corporate financial performance and the stakeholder-weighted CSR measure, but not the equal-weighted CSR measure. The positive association is robust to alternative model specifications and several additional tests, further strengthening the case for using stakeholder-weighted metric in measuring CSR. These results suggest that it is important for a firm to realize which aspect of its social responsibility is more important to its primary stakeholders and that a firm's social initiatives, when properly directed, tend to improve its bottom line in Korea.

We conclude the paper with discussions on some limitations of this study that need to be addressed in future studies. First, we have not clearly addressed the concern for a possible bias in sample selection. Our sample is drawn from a population of firms selected by the CCEJ for construction of its KEJI index. The selected firms tend to be large with superior position in terms of financial performance and CSR. However, this limitation is inevitable since the KEJI index is the only reliable multi-dimensional CSR measure available in Korea. Second, while the KEJI index is considered to be the most reliable measure of CSR currently available in Korea, it has room for further improvement in the way firms are selected and in the process whereby qualitative and quantitative assessments determine the final score. Finally, the seven-year period this study covers may not be long enough to generalize the results. It would be necessary to exercise caution when deriving inference from the results of this study. In future research, we expect to extend the coverage of sample firms both by using augmented datasets on CSR and by experimenting with alternative model specifications.

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Table 1: Summary of Selected Empirical Studies

Authors	Sign	Measure of CSR	Measure of firm performance
Bragdon and Marlin (1972)	(+)	CEP index	EPS growth, ROE, ROC
Bowman and Haire (1975)	(+)	Carroll's (1979) CSR construct and CEP index	ROE
Fogler and Nutt (1975)	neutral	CEP index	P/E ratio
Sturdivant and Ginter (1977)	(+)	Moskowitz reputation index	EPS growth
Alexander and Buchholz (1978)	(+)	Reputation ratings	Market return on security
Spicer (1978)	(+)	CEP index	ROE
Cochran and Wood (1984)	(+)	Moskowitz reputation index	Abnormal return
Aupperle et al., (1985)	(-)	Carroll's (1979) CSR construct	ROA
Conine and Madden (1987)	(+)	Erdos and Morgan's corporate reputation survey	Perceptual/expectational survey measures
McGuire et al. (1988)	mixed	Fortune index	ROA, sales growth, asset growth
Fombrun and Shanley (1990)	neutral	Charitable contributions, Fortune index	ROIC, market-to-book ratio
Teoh and Shiu (1990)	neutral	CSR disclosure	Institutional investors' survey questionnaire
Blackburn et al. (1994)	(+)	CEP index	ROA, abnormal return, EPS
Waddock and Graves (1997)	(+)	KLD index	ROA, ROE, return on sales
Berman et al. (1999)	(+)	KLD index	ROA
Teoh et al. (1999)	neutral	Divestment from South Africa	Abnormal return
McWilliams and Siegel (2000)	neutral	KLD index	ROA
Orlitzky et al. (2003)	mixed	KLD index	P/E ratio, ROE, ROA
Akpinar et al. (2008)	(+)	KLD index	Stock return, Tobin's Q
Lev et al. (2008)	(+)	Charitable contributions	Sales growth

Table 2: Sample Distribution by Industry

Industry Classification	Frequency	%
Manufacture of Basic Metal Products	73	6.0
Manufacture of rubber and plastic products	48	3.9
Manufacture of other machinery and equipment	70	5.7
Manufacture of other non-metallic mineral products	56	4.6
Manufacture of wearing apparel, Clothing	38	3.1
Manufacture of food product and beverage	93	7.6
Manufacture of Pharmaceuticals, Medicinal Chemicals	171	14.0
Manufacture of motor vehicles, trailers	96	7.9
Manufacture of Electronic Components, Computer, Radio, Television and Communication Equipment and Apparatuses	122	10.0
Manufacture of Pulp, Paper and Paper Products	31	2.5
Manufacture of chemicals and chemical products	175	14.3
Manufacture of fabricated metal products	18	1.5
Professional Services	32	2.6
Manufacture of coke, hard-coal products	19	1.6
Wholesales trade and commission trade	33	2.7
Retail trade	31	2.5
Electricity, gas, steam and air conditioning supply	32	2.6
General construction	84	6.9
Total	1,222	100

Table 3: Mean Weights by Industry and the KEJI Category over 2002-2008.

Categories / Industries	Soundness	Fairness	Contribution to Society	Consumer Protection	Environmental Protection	Employee Satisfaction	Contribution to Economy
Metal	0.16	0.19	0.15	0.12	0.14	0.12	0.12
Rubber	0.15	0.18	0.13	0.13	0.16	0.13	0.12
Machinery	0.17	0.18	0.13	0.12	0.13	0.14	0.13
Mineral	0.17	0.17	0.16	0.12	0.14	0.12	0.12
Clothing	0.18	0.19	0.12	0.13	0.13	0.15	0.1
Food	0.17	0.18	0.14	0.14	0.11	0.15	0.11
Medicine	0.17	0.17	0.14	0.1	0.12	0.17	0.13
Vehicles	0.16	0.16	0.12	0.1	0.14	0.18	0.14
Electronics	0.16	0.15	0.11	0.16	0.13	0.14	0.15
Paper	0.16	0.18	0.14	0.12	0.16	0.13	0.11
Chemical	0.17	0.15	0.12	0.12	0.19	0.13	0.12
Fabricated metal	0.16	0.18	0.14	0.13	0.14	0.13	0.12
Professional Services	0.17	0.18	0.12	0.11	0.14	0.15	0.13
Hard-coal	0.18	0.2	0.1	0.09	0.19	0.13	0.11
Wholesales Trade	0.18	0.18	0.13	0.11	0.14	0.16	0.1
Retail Trade	0.2	0.19	0.11	0.17	0.11	0.12	0.1
Electricity Supply	0.18	0.19	0.14	0.12	0.13	0.14	0.1
Construction	0.15	0.15	0.12	0.12	0.17	0.17	0.12

Table 4: Descriptive Statistics

	Mean	S.D	Min	Median	Max
ROA	0.071	0.052	-0.166	0.065	0.348
ROE	0.124	0.099	-0.188	0.115	0.593
Tobin's Q	0.917	0.397	0.114	0.821	2.991
EW	416.098	24.141	362.711	412.927	523.692
SW	61.657	3.412	54.101	61.136	76.752
SIZE	12.835	1.482	10.001	12.463	18.099
$\Delta Sales_{t-1}$	0.030	0.067	-0.173	0.032	0.392
$\Delta Sales_{t}$	0.031	0.079	-0.147	0.031	0.432
RISK	0.109	0.090	0.000	0.083	0.382
R&D	0.016	0.020	0.000	0.014	0.164

Table 5: Pearson Correlation Coefficients

	ROA	ROE	Tobin's Q	EW	SW	SIZE	$\Delta Sales_{t-1}$	$\Delta Sales_t$	RISK	R&D
ROA		0.752***	0.284***	0.167**	0.241***	0.031	0.252***	0.273***	-0.104***	0.162***
ROE			0.290***	0.088	0.193***	0.173***	0.258***	0.322***	-0.132***	0.087***
Tobin's Q				0.038	0.333**	0.285***	0.134***	0.087***	-0.120***	0.347***
EW					0.572***	0.260**	0.074	0.057*	0.004	0.331***
SW						0.354***	0.065	0.062*	0.040	0.315***
SIZE							0.069**	0.079***	0.387***	0.044*
$\Delta Sales_{t-1}$								0.261***	0.057**	0.089***
$\Delta Sales_t$									0.035*	0.010
RISK										-0.026
R&D										

Note: ***, **, * represent significance levels at the 1%, 5%, and 10%, respectively.

Table 6: Results of Variance Analysis

Panel A : EW is the classification variable to group the sample firms				
	Bottom 25%	Middle 50%	Top 25%	F-Value
ROA	0.0582	0.0689	0.0871	5.42***
ROE	0.0711	0.0847	0.1059	2.41**
Tobin's Q	0.7594	0.9059	1.543	1.99*
Panel B : SW is the classification variable to group the sample firms				
	Bottom 25%	Middle 50%	Top 25%	F-Value
ROA	0.0584	0.0650	0.0952	6.38***
ROE	0.0674	0.0796	0.1209	9.73***
Tobin's Q	0.5090	0.9259	1.3537	15.41***

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

Table 7: Estimation Results for Corporate Financial Performance

	Model 1			Model 2		
Independent Variables	Dependent Variables					
	ROA	ROE	Tobin's Q	ROA	ROE	Tobin's Q
EW	0.036	0.019	0.002			
	(1.58)	(1.35)	(0.33)			
SW				0.252***	0.214***	0.542***
				(5.54)	(4.35)	(3.36)
SIZE	0.002*	0.007***	0.068***	0.000*	0.005***	0.039***
	(1.83)	(3.12)	(7.15)	(1.90)	(3.12)	(5.95)
$\Delta Sales_{t-1}$	0.145***	0.246***	0.602***	0.117***	0.271***	0.600***
	(7.07)	(6.17)	(3.43)	(7.05)	(5.17)	(3.42)
$\Delta Sales_t$	0.151***	0.326***	0.528***	0.130***	0.208***	0.517***
	(8.67)	(9.67)	(3.55)	(8.65)	(4.03)	(3.51)
RISK	-0.082***	-0.061*	-0.238*	-0.079***	-0.039*	-0.251***
	(-5.14)	(-1.95)	(-1.73)	(-4.99)	(-1.81)	(-1.82)
R&D	0.229***	0.026	5.182***	0.240***	0.017	5.229***
	(2.81)	(0.16)	(7.41)	(2.95)	(0.11)	(7.50)
Adj-$\boldsymbol{R^2}$	0.298	0.263	0.332	0.315	0.280	0.446
F-statistic	18.91***	15.93***	32.96***	20.84***	19.09***	41.98***

Note: ***, **, * represent significance levels at the 1%, 5%, and 10%, respectively.

Table 8: Estimation Results from the Four-factor Model

	EW		SW	
Variables	Coefficient	t-statistic	Coefficient	t-statistic
α_0	0.069	0.79	0.311***	3.98
RMRF	-0.217*	-1.97	-0.117*	-1.80
SMB	-0.497***	-3.96	-0.288**	-2.20
HML	-0.283***	2.59	-0.098*	-1.93
Momentum	0.196	1.13	0.004	0.15
Adj-R^2	0.247		0.378	
F-statistic	12.513***		21.047***	

Note: ***, **, * represent significance levels at the 1%, 5%, and 10%, respectively.

Table 9: Estimation of the Simultaneous Equation System

Panel A: Result from Equation 1						
Independent Variables	Dependent Variables					
	EW			SW		
ROA	13.116			15.123***		
	(0.96)			(8.72)		
ROE		7.82			7.248***	
		(0.47)			(6.07)	
Tobin's Q			3.973			3.797***
			(0.39)			(5.17)
SIZE	0.411***	0.695***	0.603	0.624***	0.333***	0.227**
	(6.01)	(2.58)	(0.64)	(6.72)	(3.90)	(2.14)
Pre CSR	0.351***	0.459***	0.278***	0.325***	0.449***	0.381***
	(7.51)	(11.42)	(4.67)	(7.00)	(11.86)	(8.58)
Adj-R^2	0.175	0.182	0.111	0.253	0.276	0.204
F-statistic	14.41***	17.93***	10.27***	26.91***	27.92***	19.03***
Panel B: Result from Equation 2						
	Model 1			Model 2		
Independent Variables	Dependent Variables					
	ROA	ROE	Tobin's Q	ROA	ROE	Tobin's Q
EW	0.000	0.000	0.000			
	(0.41)	(0.99)	(0.57)			
SW				0.002***	0.001***	0.044***
				(3.38)	(2.78)	(3.50)
SIZE	0.002	0.004	0.069***	0.002	0.004	0.051***
	(1.43)	(1.55)	(5.20)	(1.49)	(1.56)	(2.94)
$\Delta Sales_{t-1}$	0.199***	0.357***	0.758***	0.185***	0.212***	0.730**
	(6.79)	(6.77)	(2.56)	(6.67)	(3.70)	(2.44)
$\Delta Sales_t$	0.127***	0.266***	0.414*	0.106***	0.197**	0.358*
	(5.99)	(6.99)	(1.95)	(6.02)	(2.23)	(1.66)
RISK	-0.078***	-0.093***	-0.062	-0.064***	-0.096***	-0.150
	(-3.85)	(2.53)	(-0.30)	(-3.66)	(2.64)	(-0.71)
R&D	0.383***	0.567***	0.692***	0.392***	0.580***	1.599
	(4.33)	(3.57)	(7.76)	(4.47)	(3.69)	(0.38)
Pre CSR	0.000	0.000	0.000	0.001**	0.003*	0.035*

	(0.86)	(0.31)	(1.51)	(2.11)	(1.98)	(1.83)
Adj- R^2	0.200	0.197	0.210	0.247	0.216	0.391
F-statistic	18.92***	18.47***	20.95***	21.93***	21.02***	30.04***

Note: ***, **, * represent significance levels at the 1%, 5%, and 10%, respectively.

Table 10: Granger Causality Tests for CSR and Corporate Financial Performance Measured by Tobin's Q

Panel A : EW → Tobin's Q

	Full Model		Restricted Model				
	Estimate	FM t-stat	Estimate	FM t-stat		p-value	Causality
Intercept	-1.5423	-0.81	0.0858***	4.04	2 Lags	0.21	no
$Tobin's\ Q_{t-1}$	0.1448***	2.57	0.2743***	3.88	1 Lag	0.13	no
$Tobin's\ Q_{t-2}$	0.0957*	1.89	0.1554***	2.79			
EW_{t-1}	0.0035	0.73					
EW_{t-2}	0.0020	0.73					

Panel B : Tobin's Q → EW

	Full Model		Restricted Model				
	Estimate	FM t-stat	Estimate	FM t-stat		p-value	Causality
Intercept	0.5665	0.08	0.4790**	2.13	2 Lag	0.69	no
EW_{t-1}	0.1851*	1.91	0.1626***	2.36	1 Lag	0.33	no
EW_{t-2}	0.1625*	1.85	0.0379*	1.79			
$Tobin's\ Q_{t-1}$	0.8137	0.09					
$Tobin's\ Q_{t-2}$	0.4663	0.87					

Panel C : SW → Tobin's Q

	Full Model		Restricted Model				
	Estimate	FM t-stat	Estimate	FM t-stat		p-value	Causality
Intercept	0.6599	0.56	0.0858***	4.04	2 Lag	0.00	yes
$Tobin's\ Q_{t-1}$	0.2008**	2.14	0.2743***	3.88	1 Lag	0.00	yes
$Tobin's\ Q_{t-2}$	0.0837*	1.86	0.1554***	2.79			
SW_{t-1}	0.0136***	2.96					
SW_{t-2}	0.0084**	2.07					

Panel D : Tobin's Q → SW

	Full Model		Restricted Model				
	Estimate	FM t-stat	Estimate	FM t-stat		p-value	Causality
Intercept	0.0858	0.63	0.0768	1.18	2 Lag	0.00	yes
SW_{t-1}	0.2285**	2.22	0.2407***	3.86	1 Lag	0.00	yes
SW_{t-2}	0.1425*	1.90	0.1224**	2.21			
$Tobin's\ Q_{t-1}$	0.7834***	2.63					
$Tobin's\ Q_{t-2}$	0.4539***	2.37					

Note: 1) ***, **, * represent significance levels at the 1%, 5%, and 10%, respectively.
2) FM t-stat is the Fama-MacBeth t-statistic.

Table 11: Estimation Results for Corporate Financial Performance for Each of CSR Categories (Dependent variable: Tobin's Q)

	Soundness	Fairness	Contribution to society	Consumer protection	Environmental protection	Employee satisfaction	Contribution to economy
EW	0.01	0.02	0.00	0.01	0.04	0.05	0.08
	(0.77)	(1.03)	(0.65)	(1.09)	(1.15)	(1.30)	(1.15)
SW	0.05***	0.03***	0.00	0.06***	0.13***	0.08***	0.13***
	(7.67)	(3.39)	(0.13)	(8.10)	(4.01)	(6.43)	(2.79)

Note: ***, **, * represent significance levels at the 1%, 5%, and 10%, respectively.