Hypothesis

Corporate Sustainability Management and Its Market Benefits

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Abstract: An increasing number of firms around the world are applying corporate sustainability management (CSM) to their business operations, and the research interest on the effect of CSM in terms of the capital market benefit has grown rapidly under the different research settings across various countries. This study investigates whether CSM contributes to increasing firm value and improving the market response to earnings disclosure, using Korean firms as the sample. The test results show that firms with CSM reporting outperform the other firms in terms of Tobin's Q and the market-adjusted stock returns over a year. Further, investors respond more strongly to the earnings announcement events of the CSM firms than the non-CSM firms, which is more likely to be attributed to the enhanced corporate disclosure practice of the CSM firms than an improvement in earnings quality. Our findings indicate that the shareholders of firms with CSM reporting can enjoy relatively higher market valuations and enhanced information content of earnings disclosures. In conclusion, the results show that the CSM activities in pursuit of a harmonious relationship with the various stakeholders bring different forms of market benefits to shareholders as well.

Keywords: corporate sustainability; social responsibility; sustainability management report; firm value; earnings announcement

1. Introduction

Many researchers and firm managers are showing growing interest in corporate sustainability management (CSM), which represents the managerial objective to pursue the sustainability of the firm in harmony with the economic, environmental, and societal circumstances that can affect the corporate business. Thus, CSM focuses on sustainable firm value in the long run, rather than merely short-term profit maximization. Usually, the concept of CSM is interchangeably referred to as corporate social responsibility (CSR). In a strict sense, CSM has a slightly broader concept than CSR in that the former is the ultimate goal to meet in business operation, while CSR is an intermediate step toward the goal (van Marrewijk, 2003) [1]. However, the two concepts are mutually interconnected and are treated as substantially the same in most cases, so we therefore use those two terms interchangeably in this study.

Considering the concept of CSM, firms in pursuit of CSM are expected to engage in various activities to satisfy the needs of a broader group of stakeholders in their business ecosystem, including customers, creditors, regulators, employees, and the community. As a result, firms employing CSM may take different forms of benefit from the enhanced relationship with the stakeholders, including improved employee productivity, higher stock returns, product market advantages, and management efficiency (Cochran and Wood, 1984 [2]; Orlitzky et al., 2003 [3]; Brammer and Millington, 2005 [4]; Godfrey, 2005 [5]). Conversely, from the shareholders' perspective, the CSM activities engaged to respond to the demands of various stakeholders may be conducted at the expense of shareholders, which could undermine their wealth to some extent. However, such additional costs may be relatively

small and thus may not exceed the potential benefits of CSM. Therefore, an important empirical question to ask is whether CSM activities will eventually lead to the enhancement of corporate financial performance from the shareholders' perspective as well.

In this regard, this study addresses the market benefits of CSM for shareholders. Specifically, we primarily test for the long-term relationship between CSM and the market valuation of the firm. This analysis is to examine whether the CSM activities targeted at the welfare of the outside stakeholders ultimately contribute to an increase in firm value on a long-term basis. Second, we investigate the short-term market effect of CSM on the information content of earnings disclosures for stock investors. If the CSM activities contribute to enhancing the accounting quality itself or alternatively the firm's information environment, the investors' reaction to earnings announcements for CSM firms would be relatively stronger than those for the other firms.

We identify firms that substantially engage in CSM activities based on whether they issue CSM reports, since it is a key objective indicator of a firm's intention to implement CSM. Tenuta (2010) [6] documents that the CSM report serves as the key instrument to communicate with the firm's stakeholders, and therefore an insufficient form or statement could seriously limit the report's communication quality regarding sustainability. In this spirit, CSM reporting can be viewed as a reliable manifestation of environmental and societal responsibility (Ameer and Othman, 2012 [7]; Rahdari and Rostamy, 2015 [8]). Further, this study uses the sample of Korean firms in response to the growing demand for CSM research from various countries around the world (Li and Zhang, 2010 [9]; Aras et al., 2010 [10]). Korea is suitable for examining the effects of CSM outside of the major advanced economies, such as the U.S. In emerging markets, Korea is one of the leading countries with well-developed capital markets and global business players, where numerous major firms are increasingly adopting CSM.

The empirical test results are summarized as follows. First, the long-term firm value as indicated by Tobin's Q is significantly higher for firms with CSM reporting after controlling for the various firm characteristics that may affect corporate financial performance. The results remain qualitatively unchanged where we use the market-adjusted stock returns as the dependent variable instead of Tobin's Q. Those findings support the hypothesis that CSM activities contribute to enhancing the corporate performance in terms of long-term firm value. Second, investors' reactions to earnings announcements as captured by the abnormal trading volume and stock return volatility around the announcement are higher for firms with CSM reporting than for the other firms. Therefore, this result is consistent with the hypothesis that CSM activities are also beneficial for shareholders from the perspective of short-term market effects. Finally, our additional test results show that CSM is rather negatively associated with earnings quality as represented by earnings volatility. On the other hand, CSM firms have better corporate disclosure practices, that is, more timely announcements of earnings news and more frequent releases of preliminary earnings information than non-CSM firms. This additional analysis implies that the beneficial market effect of CSM activities is more likely to be linked to the improvement in the corporate disclosure behavior than the enhancement of earnings quality itself.

This study makes several contributions to the literature on the corporate sustainability. First, we provide additional evidence confirming that CSM activities are ultimately beneficial to improving shareholders' wealth. More importantly, we present new evidence that the corporate disclosure on CSM activities has positive effect on capital market performance. Thereby, we suggest an empirical basis to encourage the adoption of CSM by more firms and adequate reporting of their CSM activities. Second, we provide new evidence that CSM can affect the earnings disclosure practice, which eventually contributes to enhancing the information content of earnings announcements. Despite the substantial research interest in the capital market response to corporate disclosure, the influence of CSM as a moderator of the market reaction to disclosure has remained unexplored. Thus, we expect that our findings will provide a useful basis for future research in this avenue. Finally, this study corresponds to the research demand for an examination of the effects of CSM in various countries other than the U.S.

or other major advanced countries. In this respect, we provide consistent evidence regarding Korean firms and therefore extend the growing research interest in CSM to one of the top global emerging market economies.

The remainder of this paper is organized as follows: Section 2 reviews the extant literature and provides the research hypotheses. Section 3 describes the research design and the sample selection. Section 4 reports the main empirical results, and Section 5 provides additional analysis results. Finally, Section 6 concludes the paper.

2. Literature Review and Research Hypotheses

2.1. CSM and Long-Term Firm Value

Researchers have examined the effects of CSM activities on corporate performance and firm value from various perspectives. In relation to corporate performance, the majority of prior studies provide evidence showing that CSM or CSR is positively associated with firm performance (e.g., Roman et al., 1999 [11]; Saiia et al., 2003 [12]; Orlitzky et al., 2003 [3]; Brammer and Millington, 2005 [4]; Godfrey, 2005 [5]). In particular, the prior literature demonstrates that CSM firms show better performance in terms of accounting measures, including return on assets (ROA) or return on investment (ROI), than firms with less CSM activities (Cochran and Wood, 1984 [2]; Porter and van der Linde, 2001 [13]). Waddock and Graves (1997) [14] argue that firms with available resources tend to make use of the resources in a way that improves corporate performance in the course of complying with the social responsibility. In relation to the cost of capital, Dhaliwal et al. (2011) [15] and El Ghoul et al. (2011) [16] show that CSR is negatively associated with the cost of equity capital. Lee and Ko (2013) [17] presents that CSR activity is beneficial to enhance the enterprise value by decreasing information asymmetry and cost of equity.

In addition, CSM can provide benefits that might not be explicitly captured by accounting measures. Those benefits include the enhancement of brand value, increased firm reputation, and improved employee productivity. For instance, Heal (2005) [18] argues that CSR can mitigate conflicts among various stakeholders, which may contribute to enhancing corporate reputation and reinforcing the trust with the stakeholders. From the ethical viewpoint on CSR, managers can be morally motivated to "do the right thing" (Carroll 1979 [19]; Donaldson and Preston 1995 [20]; Jones 1995 [21]). Carroll (1979) [19] suggests that ethical responsibilities encompass the set of activities and practices that are desired by society. Jones (1995) [21] presents that firms doing CSR activities are motivated to maintain honesty and ethical standards based on the belief that the moral behavior contributes to the firm's benefit. Rexhepi et al. (2013) [22] argue that CSR is an ethical framework that enables companies to develop innovative ways to create value and new ways of operations and accordingly and will benefit the company in the long run. Further, CSM can be viewed as a form of reputation building (Fombrun and Shanley 1990 [23]; Verschoor 2005 [24]; Linthicum et al. 2010 [25]). Taken together, firms with CSM reporting may have higher standards of corporate ethics and a stronger desire to protect firm reputation, which are likely to contribute to increasing the firm value. Accordingly, many researchers report that CSM performance is positively associated with firm value in the long run (McGuire et al., 1988 [26]; Waddock and Graves, 1997 [14]; Luo and Bhattacharya, 2009 [27]).

However, some other research suggests that the market effect of CSM performance can be affected by the regulatory or social environment of the economy where the subject firms operate their business activities. For example, some researchers argue that CSM incurs additional costs in the course of complying with the social or environmental regulations, and therefore does not positively affect firm value (Vance, 1975 [28]; Brammer et al., 2006 [29]). Furthermore, the market effect of CSM activities can vary across different countries (van der Laan Smith et al., 2010 [30]).

Given the above, it is an empirical question as to whether CSM activities enhance the long-term firm value, and it should be tested considering the different regulatory and economic environment of countries. In Korea, major firms are increasingly paying attention to sustainable business management

and the non-financial performance related to social contribution (Min et al., 2015 [31]). Those firms likely have great interest in improving their customer relationships and enhancing their brand value. Taken together, we expect that the CSM activities of Korean firms would have a positive impact on firm value in the long-term. Hence, we suggest our first research hypothesis in an alternative form as follows:

Hypothesis 1 (H1). *CSM performance is positively associated with firm value.*

2.2. CSM and the Information Content of Earnings Disclosure

Despite the extensive prior studies on the influence of CSM on corporate financial performance, little is known about the potential effects of CSM on the information content of accounting disclosures. Accounting information is regarded as useful if it revises the previous market expectations on the future cash flows and accordingly affects stock prices or trading volume once it is released (Kothari, 2001 [32]; Lev, 1989 [33]). In more detail, trading volatility captures the average change in investors' expectations (Beaver, 1968 [34]; Kim and Verrecchia, 1991 [35]). Thus, if an earnings announcement has the greater information content, the more likely market participants would make different interpretations on the information, and as a result engage in stock trade to the greater extent (Landsman et al., 2012 [36]). In short, an increase in the information content of earnings announcements would be positively associated with trading volume, stock return volatility, or both.

In this regard, earnings quality is a critical factor that affects the usefulness of accounting information, and many researchers have examined various aspects of earnings quality, including earnings volatility, persistence, earnings management, accrual quality, and value relevance (Dechow et al., 2010 [37]). It is well noted that higher earnings quality increases the usefulness of earnings information for financial market participants. Since earnings of a higher quality better reflect the underlying corporate performance, the earnings announcements should convey more useful information for investors to reassess the firm value (Defond et al., 2007 [38]).

In relation to the earnings quality, the prior literature has investigated the association between CSM and earnings management. From the perspective of ethical theories on CSM, firm managers with CSM are likely to have a motivation to be honest and trustworthy in their business processes, or can have an intensive interest in reputation building (e.g., Carroll 1979 [19]; Donaldson and Preston 1995 [20]; Linthicum et al. 2010 [25]). Thus, CSM firms are more likely to appreciate transparency in financial reporting and accordingly involve less in earnings management. Empirically, Chih et al. (2008) [39] found that firms with CSM tend to be less interested in avoiding earnings losses. Kim et al. (2012) [40] show that firms involved in more CSM activities tend to engage less in earnings management. Yip et al. (2011) [41] suggest that the relationship between CSM and earnings management can be affected by the political environment, such as the firm's visibility in the political arena. Thus, firms engaging in CSM activities are more inclined to reduce earnings management and are more likely to have higher quality earnings, which would lead an enhancement to the information content of earnings announcements.

Besides this, other corporate characteristics of CSM firms may have indirect effects on the information content of earnings. One important aspect is that CSM can be positively related to the quality of corporate governance. Jo and Harjoto (2011) [42] reported a positive relationship between CSR and various sets of corporate governance proxies, including institutional ownership, management leadership, board independence, and analyst following. Brown et al. (2006) [43] found that larger boards of directors tend to engage in providing greater amounts of donations. In theory, CSM can be positively associated with the board independence since outside board members may have a natural motivation to enhance their reputation by investing in CSM activities. Another explanation can be that independent members are more likely to seek transparency in their firms' business operations and as a result engage more actively in providing transparent information to stakeholders through CSM-related disclosures. In this regard, Rupley et al. (2012) [44] document that voluntary CSM

disclosure is positively related to the independence and diversity of the management board. It is well known that corporate governance of high quality provides an important benefit to the users of information disclosed by firms (Byard et al., 2006 [45]). Accordingly, it is possible that CSM firms have high-quality governance and disclosure practices, which will eventually lead to enhancing the information content of the earnings disclosures.

Assessing the direct and indirect influences of CSM activities in a comprehensive manner, we expect a positive association between CSM and earnings informativeness, and accordingly suggest our next hypothesis in an alternative form as follows.

Hypothesis 2 (H2). *Firms with CSM activities have higher information content of earnings announcement.*

3. Research Design and Sample Selection

3.1. Empirical Models

3.1.1. Test for the Association between CSM and Long-Term Firm Value (H1)

To formally test for Hypothesis 1, we primarily conduct the analysis by regressing the market value of the firm on the indicator of CSM reporting and the other control variables, as follows:

$$
\begin{aligned}
TQ_{it} = {} & \beta_0 + \beta_1 CSMR_{it} + \beta_2 ROA_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 R\&D_{it} + \\
& \beta_6 CAPEX_{it} + \beta_7 MSH_{it} + \sum \beta_m YEAR + \sum \beta_n IND + \varepsilon
\end{aligned}
\tag{1}
$$

where TQ indicates Tobin's Q, which proxies the firm performance in terms of value maximization and is calculated by dividing the market value of the equity plus total liabilities by the book value of total assets. $CSMR$ is an indicator variable that has unit value if the firm issues a CSM report and zero otherwise. In the regression, the main variable of interest is $CSMR$ and the coefficient β_1 on $CSMR$ is supposed to capture the degree of change in TQ per one unit of change in $CSMR$. We expect the coefficient β_1 on $CSMR$ to be positive under Hypothesis 1. The other variables are used as controls for the firm characteristics to potentially affect the market valuation of the firm. ROA refers to return on assets, which is computed in terms of the ratio of net income to total assets as of the year-end. $SIZE$ is measured as the natural log-transformed value of total assets and LEV equals the debt-to-assets ratio as of the year-end. $R\&D$ and $CAPEX$ are added as controls for the influence of corporate investment in tangible and intangible assets on the firm value. Specifically, $R\&D$ represents the research and development expenses and $CAPEX$ denotes the increase in tangible assets except land. Both the variables are deflated by the lagged market value of the equity. Further, MSH indicates the ratio of the major shareholders, including their related parties, which controls for the effect of ownership structure or corporate governance. We also add year and industry dummies in order to address for the cross-sectional and time-series fixed effects. In common for this and all the following regressions in this study, we winsorize all the continuous variables at the 1% and 99% levels to mitigate the effect from extreme outliers, and apply the firm-clustered standard errors to avoid the potential bias from the autocorrelations among the error terms (Petersen, 2009 [46]).

In addition, we conduct a supplemental test for H1 using the stock returns as the dependent variable as follows:

$$
\begin{aligned}
RET_{it} = {} & \beta_0 + \beta_1 CSMR_{it} + \beta_2 UE_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 R\&D_{it} + \\
& \beta_6 CAPEX_{it} + \beta_7 MSH_{it} + \beta_8 MTB_{it} + \sum \beta_m YEAR + \sum \beta_n IND + \varepsilon
\end{aligned}
\tag{2}
$$

where RET represents the market-adjusted stock returns that equal the buy-and-hold stock returns from the fourth month of year t to the third month of year $t + 1$, minus the market index returns. UE indicates the unexpected earnings, which corresponds to the change in net income from the previous year scaled by the lagged market value of the equity, and MTB represents the market-to-book ratio of the equity as a control for firm growth potential. The other control variables are the same

as those used in Equation (1). In Equation (2), the key variable of interest is *CSMR*, and if the stock returns increase in CSM firms, the coefficient on *CSMR* would be positive.

3.1.2. Test for the Effect of CSM on the Information Content of Earnings Announcement (H2)

For Hypothesis 2, we regress the magnitude of market response around the earnings announcement date on the indicator of CSM reporting firms, as follows:

$$
\begin{aligned}
SAVOL_{it} \text{ (or } SAER_{it}) = \ & \beta_0 + \beta_1 CSMR_{it} + \beta_2 |UE|_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 R\&D_{it} + \\
& \beta_6 CAPEX_{it} + \beta_7 MSH_{it} + \beta_8 MTB_{it} + \sum \beta_m YEAR + \sum \beta_n IND + \varepsilon.
\end{aligned}
\tag{3}
$$

where *SAVOL* represents the standardized abnormal trading volume for the earnings announcement event period, measured according to the method used by Cready and Mynatt (1991) [47] and Li and Ramesh (2009) [48]. In addition, *SAER*, indicative of the standardized absolute excess returns, is calculated by dividing the absolute value of excess returns for the event period by the standard deviation of excess returns for the non-event period, based on the methodology of Griffin (2003) [49] and Li and Ramesh (2009) [48].

Following H2, we anticipate that the market reaction to earnings announcement in terms of the abnormal trading volume and the abnormal return volatility should be greater for firms with CSM reporting, controlling for the absolute magnitude of unexpected earnings, and thus expect β_1 on *CSMR* to be positive.

3.2. Samples and Data

The initial sample is composed of publicly traded firms in the Korean stock markets, including the KOSPI (Korea Composite Stock Price Index) and the KOSDAQ (Korea Securities Dealers Association Automated Quotation). We set the test period running from 2011 to 2016, to maintain consistency in the accounting standards, considering that the International Financial Reporting Standards were mandatorily adopted by Korean listed firms in 2011. We also require that the sample firms have a December year-end and operate in non-financial industries in order to minimize noise from inconsistent fiscal year and accounting practices.

The accounting data was obtained from the TS-2000 database and the stock return data from Dataguide Pro of FNGuide. Further, a list of firms that issued CSM reports for any of the sample period was gathered from the Business Institute for Sustainable Development and Korea Corporate Governance Service (BISD) which is a non-profit organization in Korea and provides independent review and verification on the appropriateness of CSM reports of Korean firms. The sample observations in this study are made at the level of corporate legal entity which encompasses its branches, as the CSM reporting is made at the entire corporate entity level, not issuing separate reports for its subordinate branches. Next, sample observations with missing values for the test variables are rejected and the firms with full capital impairment are excluded. Finally, the selected sample includes 8722 firm-years which are defined as the total number of sample observations across the time-series and the cross-sections.

4. Empirical Results

4.1. Descriptive Statistics and Correlations

Table 1 provides the descriptive statistics for all the continuous variables for the main analysis. The median (mean) value of the main dependent variable, *TQ,* is 1.069 (1.363), which indicates a slightly right-skewed distribution. Among the market test variables, the long-term, market-adjusted stock return (*RET*) has a median value close to zero (−0.006), implying that the sample firms normally do not outperform the market returns. The market response variables, *SAVOL* and *SAER*, have median values of 1.155 and 0.790, respectively, which are lower than their respective mean values.

The unexpected earnings (*UE*) has a median (mean) value of 0.000 (0.007), which implies that there is no clear trend in earnings change over time. As for the control variables, the distribution of *LEV* stays stable around the median value of 0.443, and *MSH* is also stable in a range from 0.162 to 0.693. In addition, the median (mean) value of *ROA*, which is 0.025 (0.010), shows that the overall profitability of the sample firms is positive.

Table 1. Descriptive Statistics.

Variable	N	Mean	Std.	5%	25%	Median	75%	95%
TQ	8722	1.363	0.904	0.639	0.858	1.069	1.488	3.175
RET	8722	0.110	0.527	−0.467	−0.204	−0.006	0.276	1.113
SAVOL	8722	2.073	3.197	0.283	0.667	1.155	2.069	6.840
SAER	8722	0.984	0.734	0.228	0.490	0.790	1.239	2.451
UE	8722	0.007	0.198	−0.260	−0.048	0.000	0.044	0.300
|UE|	8722	0.107	0.166	0.003	0.016	0.045	0.115	0.463
SIZE	8722	19.167	1.483	17.273	18.147	18.863	19.924	22.228
LEV	8722	0.439	0.203	0.116	0.271	0.443	0.595	0.773
R&D	8722	0.018	0.030	0.000	0.000	0.004	0.022	0.086
CAPEX	8722	0.017	0.138	−0.151	−0.016	0.002	0.038	0.239
MSH	8722	0.417	0.162	0.161	0.297	0.412	0.529	0.693
ROA	8722	0.010	0.095	−0.185	−0.010	0.025	0.059	0.124
MTB	8722	1.520	1.446	0.355	0.664	1.049	1.796	4.333

Variables definitions. *TQ*: (The market value of the equity plus total liabilities)/the book value of total assets; *RET*: The buy-and-hold stock returns from the fourth month of year t to the third month of year *t* + 1, minus the market index returns; *SAVOL*: The standardized abnormal trading volume for the earnings announcement event period; *SAER*: (The absolute value of excess returns for the event period)/(the standard deviation of excess returns for the non-event period); *UE*: The change in net income from the previous year scaled by the lagged market value of the equity; *|UE|*: Absolute value of *UE*; *SIZE*: Natural log-transformed value of total assets; *LEV*: Total liabilities divided by total assets; *R&D*: The research and development expenses; *CAPEX*: The increase in tangible assets except land; *MSH*: The ratio of the major shareholders; *ROA*: The ratio of net income to total assets as of the year-end; *MTB*: The market-to-book ratio of the equity.

Table 2 summarizes the Pearson/Spearman correlations among the main test variables. *CSM* is slightly negatively associated with *RET* (Pearson coef. = −0.052) but has no significant correlation with *TQ* (Pearson coef. = −0.020). This implies that the univariate correlation test is insufficient to clarify the effect of CSM on long-term firm value. Similarly, the simple correlations between *CSMR* and the short-term market response variables, *SAVOL* and *SAER*, are weak in general. The correlation between *SAVOL* and *SAER* themselves is strongly positive (Pearson coef. = 0.617) as expected, which implies that those variables can be interchangeably used for the market response test. In addition, the basic firm characteristics, such as *SIZE* and *LEV*, are negatively correlated with the firm value variables, *TQ* and *RET*.

Table 2. Correlations among the Variables.

	TQ	RET	SAVOL	SAER	CSMR	SIZE	LEV	R&D	CAPEX	MSH
TQ		0.338	−0.057	−0.037	−0.020	−0.250	−0.138	−0.051	−0.036	−0.220
RET	0.202		0.044	0.013	−0.052	−0.094	−0.050	0.091	0.043	0.006
SAVOL	−0.045	0.074		0.617	−0.026	−0.054	0.058	0.001	0.023	0.051
SAER	−0.035	0.016	0.618		0.053	0.046	0.057	0.010	0.010	0.013
CSMR	−0.007	−0.047	0.053	0.075		0.505	0.128	0.021	0.035	−0.058
SIZE	−0.318	−0.050	0.094	0.081	0.330		0.292	−0.051	0.106	0.147
LEV	−0.029	−0.080	0.055	0.045	0.130	0.291		0.057	0.039	−0.041
R&D	0.048	0.054	0.003	0.011	0.067	−0.041	0.062		−0.009	−0.130
CAPEX	0.036	0.039	0.032	0.000	0.049	0.157	0.040	0.019		0.069
MSH	−0.272	0.049	0.039	0.001	−0.062	0.202	−0.049	−0.140	0.053	

(1) Please see Table 1 for variable definitions; (2) This table presents Pearson (Spearman) correlations. Coefficients shown in bold are significant at $p < 0.05$ (two-tailed test).

4.2. Regression Results

4.2.1. Results for the Association between CSM and Long-term Firm Value (H1)

Table 3 presents the test results for the effects of CSM on long-term firm value. Panel A of Table 3 reports the result using Tobin's Q (*TQ*) as the dependent variable. The coefficient estimate on *CSMR* is 0.458, which is statistically significant at the 1% level. This result indicates that the firms with CSM reporting have relatively higher firm values than the other firms. In relation to the control variables, firm size and R&D activities are significantly negatively associated with the firm value (coef. for *SIZE* = −0.151, and coef. for *R&D* = −2.294). Further, the significantly negative coefficient on *MSH* (coef. = −0.955) shows that the ownership concentration has a negative impact on the market valuation of the firm.

Table 3. The Association between CSM and Long-term Firm Value.

	PANEL A: Results Using Tobin's Q		
Variables	**Estimate**	**t-Stat (Firm-cl.)**	
Intercept	4.477	14.90	***
CSMR	0.458	4.32	***
ROA	0.249	1.09	
SIZE	−0.151	−9.59	***
LEV	−0.161	−1.84	*
R&D	−2.294	−5.08	***
CAPEX	0.077	1.57	
MSH	−0.955	−7.98	***
Fixed Effect	Industry and Year		
Adj.R2	0.165		
N(Observations)	8722		
	PANEL B: Results Using Stock Returns		
Variables	**Estimate**	**t-Stat (Firm-cl.)**	
Intercept	1.176	12.81	***
CSMR	0.040	1.66	*
ROA	0.473	12.30	***
SIZE	−0.047	−10.40	***
LEV	−0.022	−0.79	
R&D	1.287	6.42	***
CAPEX	0.205	4.66	***
MSH	−0.042	−1.18	
MTB	−0.066	−11.68	***
Fixed Effect	Industry and Year		
Adj.R2	0.091		
N(Observations)	8722		

(1) Please see Table 1 for variable definitions; (2) *, **, *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Panel B of Table 3 presents the test result using stock returns instead of Tobin's Q as a firm value metric. The coefficient on the main variable of interest, *CSMR*, still has a positive value of 0.040, although the statistical significance is slightly weaker than that reported in Panel A. The result based on stock returns corroborates the above finding that CSM activities contribute to enhancing firm value. In sum, the test results support Hypothesis 1, suggesting that CSM is also beneficial to shareholders in the long run.

4.2.2. Results for the Effect of CSM on the Information Content of Earnings Announcements (H2)

Table 4 presents the test results for the market response to earnings announcements. Model 1 and Model 2 use $SAVOL$ and $SAER$, respectively, as dependent variables. In Model 1, the coefficient estimate on $CSMR$ is 0.366, which is statistically significant at the 1% level. In addition, the coefficient on the absolute value of unexpected earnings, $|UE|$, is 0.859, which is also statistically significant at the 1% level. That is, controlling for the magnitude of earnings news, investors react more strongly to the earnings announcements of firms with CSM reporting. Most of the control variables have a significant association with $SAVOL$, especially for the strongly negative coefficients on $SIZE$ and MTB, and the positive coefficients on LEV and MSH. The test replacing $SAVOL$ with the abnormal stock return volatility, $SAER$, in Model 2 shows a similar result whereby the coefficient on $CSMR$ is significantly positive (coef. = 0.163). The control variables in Model 2, however, do not have significant coefficient estimates, except for LEV.

The test results above are consistent with Hypothesis 2, showing that investors respond to earnings announcements for CSM firms more strongly in terms of the trading volume and the stock return volatility than for non-CSM firms. In short, this finding supports that CSM activities are positively associated with the improvement in the informativeness of earnings announcements.

Table 4. The Effect of CSM on the Information Content of Earnings Announcements.

Variables	SAVOL			SAER		
	Estimate	*t*-Stat (Firm-cl.)		Estimate	*t*-Stat (Firm-cl.)	
Intercept	5.942	10.12	***	0.796	5.40	***
CSMR	0.366	3.00	***	0.163	3.73	***
|UE|	0.859	3.08	***	0.226	3.55	***
SIZE	−0.249	−8.55	***	0.002	0.23	
LEV	1.110	5.31	***	0.104	2.25	**
R&D	−1.439	−1.17		0.080	0.29	
CAPEX	0.627	2.21	**	0.090	1.44	
MSH	1.057	4.28	***	0.059	1.11	
MTB	−0.145	−6.03	***	−0.007	−1.07	
Fixed Effect	Industry and Year					
Adj.R2	0.030			0.015		
N(Observations)	8722			8722		

(1) Please see Table 1 for variable definitions; (2) *, **, *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

5. Additional Tests

The main test results thus far are consistent with our research hypotheses, suggesting that CSM activities increase the long-term firm value and the information content of earnings announcements. This contributes to the relevant literature by presenting evidence of the positive market effect of CSM activities. In this section, we conduct additional analysis to test whether the positive capital market effect, especially for the earnings announcement effect, is connected with enhancing the accounting quality itself, or based on another benefit of CSM that may not be captured by accounting numbers.

Primarily, we test whether CSM improves the earnings quality itself in terms of earnings volatility. Prior literature has not addressed earnings volatility in connection with CSM, although it is a key property in determining earnings quality. Earnings volatility is negatively related to earnings predictability, and less predictable earnings decrease the usefulness of earnings information in stock valuation (Dichev and Tang, 2009 [50]). Thus, if the stronger market response to the earnings announcements for CSM firms is attributable to the enhanced earnings quality as represented by earnings volatility, it is expected that the earnings for the firms with CSM reporting are less volatile than the other firms.

　　　Second, we conduct an analysis on the association between the disclosure quality of earnings announcements and the CSM activities. Disclosure quality, such as the timeliness and medium of earnings announcements, can have a significant influence in its own right on the market attention to the announcement event. For instance, a timelier earnings announcement has a stronger market reaction than a late earnings announcement, controlling for the earnings innovation (e.g., Bagnoli et al., 2002 [51]; Defond et al., 2007 [38]). In addition, Amir and Livnat (2005) [52] documented that the market reaction to preliminary earnings announcements is higher than that to the filing of financial statements. Thus, if the firms with CSM reporting have higher disclosure quality, the stronger response to earnings announcement for the CSM firms can be ascribed to the better disclosure practice of CSM firms, not necessarily owing to the earnings quality itself.

　　　To test for this conjecture, we conduct regression analysis on whether CSM affects the earnings or disclosure quality using the following equations:

$$EVOL\_Y_{it} \text{ (or } EVOL\_Q_{it}) = \beta_0 + \beta_1 CSMR_{it} + \beta_2 ROA_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \\ \beta_5 R\&D_{it} + \beta_6 CAPEX_{it} + \beta_7 MSH_{it} + \beta_8 MTB_{it} + \sum \beta_m YEAR + \sum \beta_n IND + \varepsilon \tag{4}$$

$$REPLAG_{it} = \beta_0 + \beta_1 CSMR_{it} + \beta_2 ROA_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 R\&D_{it} + \\ \beta_6 CAPEX_{it} + \beta_7 MSH_{it} + \beta_8 MTB_{it} + \sum \beta_m YEAR + \sum \beta_n IND + \varepsilon \tag{5}$$

$$PREL_{it} = \beta_0 + \beta_1 CSMR_{it} + \beta_2 ROA_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 R\&D_{it} + \\ \beta_6 CAPEX_{it} + \beta_7 MSH_{it} + \beta_8 MTB_{it} + \sum \beta_m YEAR + \sum \beta_n IND + \varepsilon \tag{6}$$

where $EVOL\_Y$ represents the earnings volatility, which is measured in terms of the standard deviation of net income for the previous five years scaled by the average total assets. Similarly, we construct another earnings volatility measure, $EVOL\_Q$, which is based on the standard deviation of quarterly earnings for the most recent eight quarters. In Equation (5), we use $REPLAG$, the reporting lag from the end of the fiscal year to the earnings announcement date, as a disclosure quality measure in terms of timeliness. As another dependent variable representing the disclosure quality, we introduce $PREL$, a dummy variable indicative of preliminary earnings announcement into the logit regression form as shown in Equation (6).

　　　The additional test results are summarized as follows: First, Panel A of Table 5 shows the results of regressing the earnings volatility on the CSM variable. In Model 1 using $EVOL\_Y$ as the dependent variable, the coefficient estimate on $CSMR$ is positive (coef. = 0.017) and statistically significant at the 1% level. For further information, the value of standardized regression coefficient is 0.061, which means that the variation of $CSMR$ by one standard deviation is connected to the change of dependent variable, $EVOL\_Y$ by its standard deviation of 0.061. The test using the quarterly earnings volatility, $EVOL\_Q$, returns a qualitatively similar result as indicated by the significantly positive coefficient on $CSMR$ (coef. = 0.004). This result indicates that earnings volatility, one of the key aspects of earnings quality, increases with CSM performance. Thus, it is unlikely that the improvement in earnings informativeness for CSM firms is attributable to the enhancement of earnings quality itself.

　　　Rather, Panels B and C of Table 5 present that the CSM is associated with increasing the quality of corporate disclosure practice. As in Panel B of Table 5, the coefficient on $CSMR$ for the dependent variable, $REPLAG$, is negative (coef. = −5.609) and statistically significant at the 1% level. That is, firms with CSM reporting tend to accelerate their earnings announcements. Panel C of Table 5 shows that the coefficient on $CSMR$, in the logit regression with $PREL$ as the dependent variable, is statistically positive at the 1% level (coef. = 1.565). This result means that CSM firms are more active in delivering their financial information through preliminary earnings announcements than other firms. In conclusion, CSM firms are likely to provide their earnings news on a more frequent and timelier basis, which should enhance the quality of corporate disclosures. Taken together, it is likely that the increase in information content of earnings announcements for CSM firms is closely associated with the enhanced corporate disclosure practice of those firms, rather than to the earnings quality itself.

Table 5. Sensitivity analysis.

Panel A: The Results of Regressing the Quality of Corporate Disclosure Practice						
Variables	**EVOL_Y**			**EVOL_Q**		
	Estimate	**t-Stat (Firm-cl.)**		**Estimate**	**t-Stat (Firm-cl.)**	
Intercept	0.254	13.62	***	0.073	13.12	***
CSMR	0.017	3.77	***	0.004	2.36	**
ROA	−0.149	−10.31	***	−0.069	−12.86	***
SIZE	−0.011	−10.80	***	−0.003	−9.93	***
LEV	0.010	1.51		0.002	1.10	
R&D	−0.006	−0.23		0.019	2.00	**
CAPEX	−0.019	−3.63	***	−0.003	−1.26	
MSH	−0.032	−4.51	***	−0.010	−4.20	***
MTB	0.008	8.97	***	0.003	8.43	***
Fixed Effect	Year, Industry			Year, Industry		
AdjustedR2	0.26			0.234		
N(Observations)	8615			8429		
Panel B: The Results of Regressing the Quality of Corporate Disclosure Practice						
Variables	**REPLAG**					
	Estimate		**t-Stat (Firm-cl.)**			
Intercept	61.277		21.01	***		
CSMR	−5.069		−5.25	***		
ROA	−7.842		−5.49	***		
SIZE	−1.479		−9.79	***		
LEV	5.323		6.41	***		
R&D	−5.869		−1.27			
CAPEX	0.796		1.02			
MSH	0.788		0.76			
MTB	−0.248		−2.57	**		
Fixed Effect	Year, Industry					
AdjustedR2	0.154					
N(Observations)	8722					
Panel C: The Results of Regressing the Quality of Corporate Disclosure Practice (Logit Regression)						
Variables	**PREL**					
	Estimate		**p-Value**			
Intercept	0.850		0.225			
CSMR	1.565		<0.0001	***		
ROA	−0.173		0.734			
SIZE	0.021		0.571			
LEV	1.347		<0.0001	***		
R&D	3.561		0.016	**		
CAPEX	−0.059		0.802			
MSH	−1.021		0.000	***		
MTB	−0.033		0.278			
Fixed Effect	Year, Industry					
Likelihood	259.81					
N(Observations)	8722					

(1) Please see Table 1 for variable definitions; (2) *, **, *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

6. Conclusions

The paradigm of business management has recently been shifting from the simple maximization of shareholders' wealth to sustainable business development under which firms can create value that is shared by all stakeholders. CSM pursues the creation of a sound business ecosystem where firms can achieve sustainable growth in coordination with economic, environmental, and societal interests. Under the growing interest in CSM or social responsibility of firms, an increasing number of firms have published CSM reports in order to measure the non-financial performance of the CSM activities and

report it to the interested stakeholders. The primary objective of this study is to test whether the CSM activities targeted at the welfare of the outside stakeholders ultimately result in the market benefits of CSM for shareholders. In this respect, this study examines whether firms with CSM reporting have advantages in improving their long-term firm value and the capital market response to earnings disclosure, using the sample of Korean firms.

The test results show that firms issuing CSM reports have significantly higher Tobin's Q than the other firms, even after controlling for the firm characteristics that can potentially influence the firm value. The positive relationship between CSM and firm value is also found in an alternative regression setting that uses the annual excessive stock returns as the dependent variable. Further, both the abnormal trading volume and the stock return volatility around earnings announcements for firms with CSM reporting are substantially higher than those for non-CSM firms, which means that investors react more strongly to the earnings news from the CSM firms. Our additional analysis shows that CSM firms tend to announce earnings news on a timelier basis and are more likely to provide preliminary earnings announcements than non-CSM firms, whereas the CSM firms' earnings quality itself as represented by earnings volatility is relatively lower.

Conclusively, this study shows that CSM activities also contribute to improving corporate performance from the perspective of shareholders' value. In addition, this study shed light on the previously unexplored area regarding the association between CSM and the firm's information environment by demonstrating that CSM reporting coincides with an improvement to the earnings disclosure practice, which leads to an enhanced market response to the earnings announcements from CSM firms. In sum, our findings provide consistent empirical evidence that should encourage more firms across the global to adopt CSM. One caveat is that our findings on the effect of CSM on stock market performance might be affected by the potential endogeneity between firm's choice on CSM and firm value. Nevertheless, as in our additional test, CSM has no positive association with the earnings quality which is known to be positively correlated to firm value. This suggests that sample firms with an indicator of higher market value do not necessarily choose CSM, which implies that the endogeneity issue may not be prevalent in the empirical tests in this study.

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