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Corporate Social Responsibility and the Value of Cash Holdings: Evidence from the Korean Stock Market

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Abstract: This study examines the impact of a company's performance in terms of corporate social responsibility (CSR) on investors' perceptions of corporate cash holdings in South Korea. The study postulates that, in emerging markets, such as South Korea, companies' CSR activities are often implemented strategically by the management. In emerging economies, companies' cash holdings are not subject to strict regulation of external capital providers. Hence, companies raise cash easily and manage cash holdings at their discretion, often resulting in agency problems between the management and shareholders. The study's results reveal that capital market investors negatively perceive the cash holdings of companies actively engaged in CSR. Investors do not expect the cash held by such companies to increase their corporate value. In other words, companies may use internal funds rather than debt for financing CSR activities.

Keywords: corporate social responsibility; cash holdings; company value; emerging market



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1. Introduction

Corporate social responsibility (CSR) refers to corporate practices that contribute ethically, socially, and environmentally to society while pursuing economic profits. Since the International Organization for Standardization (ISO) officially published its ISO 26000 standards on CSR in November 2010, there has been rising interest in CSR worldwide. In South Korea, the Korea Economic Justice Institute (KEJI), an affiliate of the Citizens' Coalition for Economic Justice, began publishing the KEJI index in 1991. The index evaluates CSR activities carried out by publicly listed companies in South Korea, announcing the top 200 companies in terms of CSR performance.

CSR activities, as a means of medium- and long-term investment, provide a wide range of benefits, such as the enhancement of corporate image and reputation [1,2]. In addition, companies may mitigate business risk factors by strengthening sustainability through the fulfillment of social responsibility and reducing the uncertainty of future cash flows, ultimately lowering capital costs and increasing firm value [3–5]. However, CSR activities usually imply long-term investment, incur expenditure, and are not directly related to corporate profitability. Some scholars argue that companies investing in CSR may incur costs that exceed the benefits of CSR activities, thereby undermining their corporate value or business performance [6,7]. Overall, previous studies exploring the relationship between CSR activities and firm value have generated inconsistent results.

This study investigates how investors evaluate the cash holdings of companies actively engaged in CSR in the Korean business context, where management may exert influence over the entire company even with a low level of ownership. Shareholders usually exercise control over a company to the extent that they invest in it and hold its shares. In other words, the shareholder who has invested the most becomes the controlling shareholder, effectively controlling the company. However, in Korea, it is common for the chair of a large-scale chaebol conglomerate to exercise effective control across the companies in the

chaebol group with a minimal ownership stake. This phenomenon occurs because the manager who acts as controlling shareholder controls the companies in the chaebol group through shares that he/she directly owns as well as shares owned by affiliated persons, such as the manager's family members, senior executives, and non-profit corporations, or shares owned by affiliated companies.

This study addresses whether companies use internal funds or debt to fund their CSR activities. If management maintains effective control over the company despite a low level of share ownership, the operations of the company's internal control systems may be hindered. As a result, managers may pursue their own interests [8]. In particular, cash is an asset that managers can easily utilize at their discretion without much control or interference from external suppliers of capital. Agency problems may arise between the management and shareholders as the former may strategically utilize corporate cash holdings for CSR activities to pursue their private interests [9].

Dittmar and Mahrt-Smith [10] argue that capital market investors place low value on the cash holdings of companies characterized by high agency costs. Therefore, this study aims to analyze whether capital market investors evaluate the cash holdings of companies actively engaged in CSR at a lower value in Korea.

The model proposed by Faulkender and Wang [11] is referenced to analyze the cash holdings evaluated by market investors. The size-adjusted abnormal return (SAR) is used as the dependent variable, and the interaction term between the change in cash holdings and whether the company is an excellent CSR company is used as the variable of interest.

The remainder of this article is organized as follows. Section 2 discusses the previous literature and the study's research hypotheses. Section 3 presents the research and the data. Section 4 describes the results of the analysis, and Section 5 concludes.

2. Literature Review and Hypothesis Development

Companies need cash holdings to conduct essential activities, such as business operations and investment. Given that a company's cash holdings may have a positive or negative impact on its corporate value, it is important to maintain an optimal level of cash holdings from the perspective of a company's capital structure. Companies that lack necessary cash reserves incur transactional costs as they must resort to external capital or asset disposal. Companies should also maintain cash reserves to respond to unexpected risks. In other words, companies should hold a certain level of cash to increase investment opportunities for value creation and minimize financial loss [12,13].

Cash is the most liquid asset. Hence, managers may use cash to pursue their interests, eventually impinging on corporate value [14,15]. Jensen [16] argues that managers strive to build cash reserves to strengthen their discretion and pursue personal interests. Harford [17] and Bates [18] report that companies with high cash holdings are more likely to pursue mergers and acquisitions aggressively, often causing future business performance to deteriorate. In addition, Dittmar, Mahrt-Smith, and Servaes [19] and Chen [12] explain that a company's excess cash holdings allow its managers to overinvest, reducing corporate value.

However, the value of corporate cash holdings may not reflect the perception of investors in the capital market. In other words, capital market investors assess the value of corporate cash holdings based on how the company uses its cash assets [10,20,21]. According to previous studies, the value of corporate cash holdings varies depending on agency costs and information asymmetry. In companies characterized by high information asymmetry, managers are more likely to use cash assets for personal gain at the expense of shareholders' interests. Therefore, investors place a lower value on the cash holdings of such companies [9].

This study analyzes how investors perceive the value of cash reserves held by companies actively engaged in CSR. As mentioned before, CSR activities may enhance corporate image and reputation [1,2] and mitigate risk factors by reducing the uncertainty of future cash flows, ultimately lowering capital costs and increasing firm value [3–5].

Some studies focus on the possible agency problems induced by managers misusing cash assets through CSR activities [22]. CSR activities typically require high initial costs and likely damage shareholder interests because, as agency theory suggests, managers may overinvest to pursue self-interest. In other words, managers may invest indiscriminately to signal their strong sense of ethics and commitment to win-win growth in the executive labor market. In particular, it is difficult to realize the business achievements derived from CSR activities in the short term, and there is no clear standard against which to measure the performance of CSR strategies. Hence, it is difficult to generalize the claim that CSR activities have an unconditional positive impact on corporate value. Therefore, investors may not accept the strengthening of a company's CSR activities unconditionally.

As an emerging economy, the Korean market is unique in that managers exercise strong control over companies and make crucial corporate decisions despite a low level of share ownership. Previous studies have pointed out that shareholder rights protection in East Asian countries is weaker than in the Anglo-American region. In Anglo-American countries, stock ownership is widely distributed, and shareholders are well protected by legal and institutional frameworks. In contrast, in East Asian countries, including Korea, abuse by managers, who are also controlling shareholders, often damages corporate value more than shareholder–manager agency problems [23].

This study examines how investors evaluate the value of cash held by companies actively engaged in CSR in the Korean market, where chaebol leaders' agency problems are prominent. Investment in CSR is usually made through cash reserves (e.g., donations) instead of borrowing. As highly liquid cash assets are likely to be utilized in the event of an agency problem, capital market investors react negatively to cash holdings in companies actively engaged in CSR and tend to place a low value on them. Hence, we propose the following:

Research Hypothesis: Investors place a lower value on cash reserves held by companies actively engaged in CSR than those held by their non-active counterparts.

3. Materials and Methods

3.1. Level of CSR Activities

This study utilizes the KEJI index to measure the level of CSR activities. The KEJI index evaluates CSR activities of publicly listed Korean companies and comprises the top 200 companies in terms of CSR performance. The KEJI index evaluation criteria and methods are similar to the KLD Social Index in the United States and the FTSE4Good Index in Europe.

3.2. Ordinary Least Squares

We extend the model developed by Faulkender and Wang [11] as follows:

$$SAR = \beta_0 + \beta_1 \Delta CASH + \beta_2 \Delta CASH \times DCSR + \beta_3 DCSR + \beta_4 \Delta E + \beta_5 \Delta NA + \beta_6 \Delta RD + \beta_7 \Delta INT + \beta_8 \Delta DIV + \beta_9 CASH_{t-1} + \beta_{10} LEV + \beta_{11} MSH + \beta_{12} FSH + Industry - Year Fixed Effect + \epsilon \quad (1)$$

To measure the size-adjusted abnormal return, the dependent variable in Equation (1), we create a portfolio based on the market value of the sample firms for every year and use the median of the portfolio return as the expected return to estimate an abnormal return. Given that Korean businesses are required to disclose annual earnings within 3 months of the fiscal year-end, the annual return is calculated over a period of 12 months, starting in April and ending in March of the following year. In the above equation, *DCSR*, the variable of interest, is a dummy variable that equals 1 if a firm is listed on the KEJI index, and 0 otherwise.

As suggested by our Research Hypothesis, if market investors negatively value the cash held by companies actively engaging in CSR, the coefficient on $\Delta CASH \times DCSR$ should be significant and negative. Faulkender and Wang [11] developed a valuation model

for measuring the value of corporate cash holdings that includes profitability, investment activities, and financing decisions as control variables [10,24,25].

Similarly, the control variables included in our model are profitability, investing activities, and financing decisions, identified in the previous literature as significant factors impacting the value of cash holdings [10,24,25]. The change in earnings before corporate tax (ΔE) of the current year compared to the previous year is used as a proxy for corporate profitability, and the changes in total assets excluding cash (ΔNA) and R&D expenditure (ΔRD) are used as proxies for investment activities. The change in interest expense (ΔINT), the change in dividends (ΔDIV), the previous years' cash level (CASH), and the leverage ratio (LEV) are employed as proxies for financing decisions. In addition, to control for the effect of governance structure, the share ratios of the majority shareholders (MSH) and foreign investors (FSH) are included in this model.

3.3. Sample Selection

The empirical analysis is carried out using a set of non-financial Korean listed companies for the period 2011–2018. Companies that do not conclude their fiscal years on December 31, with impaired capital, and for which there are no data on the size-adjusted average return and financial performance are excluded from the analysis. We extract financial data from KIS-value, a Korean electronic database similar to COMPUSTAT in the United States. To reduce the impact of extreme observations, we winsorize the continuous variables at the top and bottom 1% of their distribution. The final sample consists of 4060 firm-year observations. We identify CSR companies included in the list of top 200 best corporate citizens elaborated by the KEJI index. Of the initial 4060 firm-year observations, 1205 are published in the KEJI 200 index as companies actively engaged in CSR activities and, hence, are included in the analysis.

3.4. Descriptive Statistics

Basic statistics of the full sample are analyzed in Table 1. The mean (median) of SAR, the dependent variable, is -0.005 (-0.052). The mean of the change in cash holdings ($\Delta CASH$) is -0.001 , indicating a 0.1% decrease from the previous year. More than 29% of observations are listed in the KEJI index as firms engaged in CSR activities; the mean DCSR is 0.297. The descriptive statistics of the control variables are as follows. The means (medians) of the changes in earnings before corporate tax (ΔE), total assets excluding cash (ΔNA), R&D expenditure (ΔRD), interest expense (ΔINT), and dividends (ΔDIV) are -0.008 (-0.002), 0.031 (0.021), 0.000 (0.000), -0.001 (0.000), and 0.000 (0.000), respectively. The means (medians) of the leverage ratio (LEV), MSH ownership—a measure of governance structure—and FSH ownership are 0.400 (0.401), 0.429 (0.435), and 0.096 (0.041), respectively, confirming that the ownership share of the majority shareholders is nearly 42% in the sample companies.

In Table 2, companies actively engaged in CSR and not are categorized into two groups, and a t-test is conducted to determine whether there is a significant difference between the mean and median variables of these two groups. The mean and the median of SAR are significantly greater in firms active in CSR than their inactive counterparts, while the values of $\Delta CASH$ are not significantly different between the two groups. The mean and median of CASH show substantial differences between the two groups at a 1% significance level. Overall, Table 2 shows that the companies in the KEJI index have a higher level of cash holdings than their inactive counterparts due to their active CSR engagement.

Table 1. Descriptive statistics (Full sample).

Variables	Mean	Q1	Median	Q3	Std. Dev.
DCSR	0.297	0.000	0.000	1.000	0.457
SCSR2	0.265	0.000	0.000	1.000	0.441
SCSR3	0.233	0.000	0.000	0.000	0.423
SCSR4	0.206	0.000	0.000	0.000	0.404
NCSR	0.133	0.000	0.000	0.000	0.340
BCSR	0.133	0.000	0.000	0.000	0.339
SAR	−0.005	−0.244	−0.052	0.173	0.387
ΔCASH	−0.001	−0.016	0.000	0.015	0.050
ΔE	−0.008	−0.029	−0.002	0.021	0.087
ΔNA	0.031	−0.031	0.021	0.084	0.162
ΔRD	0.000	0.000	0.000	0.000	0.004
ΔINT	−0.001	−0.002	0.000	0.001	0.007
ΔDIV	0.000	0.000	0.000	0.001	0.006
CASH	0.053	0.011	0.034	0.075	0.058
LEV	0.400	0.232	0.401	0.555	0.206
MSH	0.429	0.313	0.435	0.541	0.167
FSH	0.096	0.012	0.041	0.135	0.126

The variables are defined in Appendix A.

Table 2. Descriptive statistics (CSR versus non-CSR firms).

Variables	CSR		Non-CSR		Differences	
	Mean	Median	Mean	Median	Mean	Median
SAR	0.038	−0.001	−0.025	−0.070	0.063 ***	0.068 ***
ΔCASH	0.000	0.000	−0.002	0.000	0.002	0.000
ΔE	0.000	0.001	−0.011	−0.003	0.011 ***	0.004 ***
ΔNA	0.055	0.040	0.021	0.011	0.034 ***	0.028 ***
ΔRD	0.001	0.000	0.000	0.000	0.001 ***	0.000 ***
ΔINT	−0.001	0.000	−0.001	0.000	0.000	0.000
ΔDIV	0.001	0.000	0.000	0.000	0.001 ***	0.000 ***
CASH	0.060	0.041	0.051	0.031	0.009 ***	0.010 ***
LEV	0.363	0.351	0.416	0.421	−0.053 ***	−0.070 ***
MSH	0.422	0.426	0.432	0.445	−0.011 *	−0.019 ***
FSH	0.118	0.065	0.087	0.033	0.031 ***	0.032 ***

The variables are defined in Appendix A. *** and * indicate significance at the 1% and 10% levels, respectively, in a two-sided test.

4. Results

Table 3 presents the results of the correlation analysis on focal variables. ΔCASH and CASH have a significant and positive correlation with SAR, an indicator of corporate value, showing that increased cash level and cash holdings enhance corporate value. DCSR also shows a significant and positive correlation with SAR, confirming that a company's CSR activities have a positive impact on corporate value.

Table 3. Correlation between variables.

	SAR	DCSR	ΔCASH	ΔE	ΔNA	ΔRD	ΔINT	ΔDIV	CASH	LEV	MSH	FSH
SAR	1.000											
DCSR	0.063 ***	1.000										
ΔCASH	0.091 ***	0.019	1.000									
ΔE	0.155 ***	0.060 ***	0.333 ***	1.000								
ΔNA	0.129 ***	0.095 ***	0.126 ***	0.357 ***	1.000							
ΔRD	0.027*	0.099 ***	0.251 ***	0.256 ***	0.286 ***	1.000						
ΔINT	0.013	0.023	0.330 ***	0.318 ***	0.462 ***	0.411 ***	1.000					
ΔDIV	0.037 **	0.067 ***	0.243 ***	0.254 ***	0.250 ***	0.292 ***	0.388 ***	1.000				
CASH	0.040 **	0.071 ***	−0.160 ***	0.061 ***	0.196 ***	0.103 ***	0.113 ***	0.136 ***	1.000			
LEV	−0.029 *	−0.118 ***	0.148 ***	0.148 ***	0.087 ***	0.126 ***	0.221 ***	0.105 ***	−0.189 ***	1.000		
MSH	0.000	−0.029 *	0.125 ***	0.159 ***	0.158 ***	0.120 ***	0.282 ***	0.207 ***	−0.027 *	−0.014	1.000	
FSH	0.035 **	0.113 ***	0.049 ***	0.068 ***	0.093 ***	0.106 ***	0.104 ***	0.140 ***	0.114 ***	−0.138 ***	−0.097 ***	1.000

The variables are defined in Appendix A. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively, in a two-sided test.

The changes in earnings before corporate tax (ΔE), total assets excluding cash (ΔNA), R&D expenditure (ΔRD), and dividends (ΔDIV) are significantly and positively correlated with SAR. In addition, LEV is significantly and negatively correlated with SAR, meaning that the more debt a firm incurs, the more likely its value will drop. As the correlation analysis is not sufficient to ensure the validity of hypothesis testing, we also perform a multivariate regression analysis. The variance inflation factor among the independent variables in the proposed regression is less than the threshold value of 1, indicating that multicollinearity is not a severe concern in this model.

Model (1) in Table 4 is a regression analysis conducted to test how investors consider the value of cash holdings in companies actively engaged in CSR. The variable of interest ($\Delta CASH \times DCSR$) represents the interaction between the change in cash holdings, $\Delta CASH$, and whether a company is included in the KEJI index, DCSR; it reflects the difference in the value of cash holdings between companies actively engaged in CSR and those that are not. The coefficient on $\Delta CASH$ is significant and positive at the 1% significance level, confirming that an increase in corporate cash holdings is positively perceived in the capital market. The coefficient on $\Delta CASH \times DCSR$ is significant and negative at the 5% significance level. This result indicates that the value of cash holdings in companies actively engaged in CSR is lower than that of their inactive counterparts; thus, our research hypothesis is supported.

Table 4. CSR and the value of cash holdings.

Variable	Dependent Variable: SAR			
	Model (1)	Model (2)	Model (3)	Model (4)
Intercept	−0.040 (−1.06)	−0.056 (−1.58)	−0.057 (−1.59)	−0.039 (−1.05)
$\Delta CASH$	1.105 (6.19) ***	1.070 (5.03) ***	1.052 (6.10) ***	1.027 (6.03) ***
$\Delta CASH \times DCSR$	−0.670 (−2.34) **			
DCSR	0.030 (1.97) *			
$\Delta CASH \times SCSR2$		−0.631 (−2.17) **		
SCSR2		0.026 (1.65) *		
$\Delta CASH \times SCSR3$			−0.653 (−2.12) **	
SCSR3			0.031 (1.85) *	
$\Delta CASH \times SCSR4$				−0.606 (−1.85) *
SCSR4				0.032 (1.81) *
ΔE	0.699 (7.52) ***	0.708 (7.66) ***	0.705 (7.63) ***	0.699 (7.52) ***
ΔNA	0.315 (6.47) ***	0.308 (6.51) ***	0.307 (6.48) ***	0.318 (6.53) ***
ΔRD	−1.660 (−0.82)	−1.630 (−0.80)	−1.626 (−0.80)	−1.611 (−0.79)
ΔINT	−2.397 (−1.52) **	−2.342 (−1.52)	−2.334 (−1.50)	−2.423 (−1.54)
ΔDID	1.658 (1.24)	1.518 (1.14)	1.449 (1.09)	1.635 (1.23)
$CASH_{t-1}$	0.261 (2.06) **	0.266 (2.11) **	0.261 (2.07) **	0.261 (2.06) **
LEV	−0.026 (−0.72)	−0.029 (−0.80)	−0.028 (−0.78)	−0.025 (−0.69)
MSH	0.019 (0.44)	0.017 (0.38)	0.019 (0.42)	0.023 (0.51)
FSH	0.056 (0.99)	0.045 (0.78)	0.043 (1.76)	0.053 (0.95)
ID	Included	Included	Included	Included
YR	Included	Included	Included	Included
AdjR ²	0.06	0.06	0.06	0.06
F-value	8.61 ***	10.74 ***	10.76 ***	8.52 ***
N	4060	4060	4060	4060

The variables are defined in Appendix A. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively, in a two-sided test.

The results of regression Model (1) may be interpreted as follows: in general, CSR entails high initial costs and may be used by managers to pursue their personal interests. Agency theory suggests that managers leverage CSR activities to overinvest in pursuit of self-interest. In emerging markets, where shareholder rights protection is weaker than in Anglo-American regions, investors place a lower value on the cash reserves of companies with higher reserves of liquid assets. In this scenario, there is a higher chance that such resources will be used inefficiently, for instance, to pursue managers' interests.

To test the robustness of the results of Model (1), various additional variables are considered. Specifically, this study considers scenarios in which the companies have been ranked on the KEJI index twice (SCSR2), three times (SCSR3), and four times (SCSR4). According to the results of Models (2), (3), and (4), as shown in Table 4, even for companies that have been consistently ranked on the KEJI index, the coefficients on $\Delta\text{CASH} \times \text{SCSR2}$, $\Delta\text{CASH} \times \text{SCSR3}$, and $\Delta\text{CASH} \times \text{SCSR4}$ are negative at the 5%, 5%, and 10% significance levels, respectively, supporting the results of Model (1), in which a binary variable is used.

As the KEJI index includes the top 200 companies actively engaged in CSR every year, no companies in the study sample were not listed in the previous year but newly introduced in the current year (NCSR). In contrast, some companies were listed in the previous year but have been excluded from the index in the current year (BCSR). As these scenarios might function as a signal for market investors, this study examines how investors evaluate such companies' cash holdings.

The analysis results show that the coefficient on the variable of interest, $\Delta\text{CASH} \times \text{NCSR}$, is negative and significant at the 1% level. This result indicates that the value of cash holdings perceived by the market drops when a company actively engages in CSR activities and, thus, is newly added to the KEJI index. However, the coefficient on $\Delta\text{CASH} \times \text{BCSR}$ is not statistically significant. This result implies that the perceived value of cash holdings is not significantly reduced when a company is delisted from the index due to low levels of CSR activities.

The results in Table 5 show that investors assign a lower value to the cash holdings of companies actively engaged in CSR activities, in line with the results in Table 4.

Table 5. CSR and the value of cash holdings: Newly ranked CSR vs. broken CSR.

Variable	Dependent Variable: SAR	
	Model (1)	Model (2)
Intercept	−0.035 (−0.94)	−0.030 (−0.81)
ΔCASH	1.057 (6.47) ***	0.950 (5.72) ***
$\Delta\text{CASH} \times \text{NCSR}$	−1.234 (−2.97) ***	
NCSR	0.027 (1.96) **	
$\Delta\text{CASH} \times \text{BCSR}$		−0.312 (−0.78)
BCSR		−0.009 (−0.44)
ΔE	0.698 (7.50) ***	0.698 (7.49) ***
ΔNA	0.321 (6.62) ***	0.321 (6.61) ***
ΔRD	−1.321 (−0.65)	−1.349 (−0.66)
ΔINT	−2.529 (−1.61)	−2.463 (−1.56)
ΔDID	1.750 (1.10)	1.592 (1.19)
CASH _{t-1}	0.260 (2.06) **	0.267 (2.11) **
LEV	−0.031 (−0.84)	−0.034 (−0.93)
MSH	0.016 (0.34)	0.016 (0.34)
FSH	0.061 (1.08)	0.065 (1.15)
ID	Included	Included
YR	Included	Included
AdjR ²	0.06	0.06
F-value	8.68 ***	8.32 ***
N	4060	4060

The variables are defined in Appendix A. ***, ** indicate significance at the 1%, 5%, and 10% levels, respectively, in a two-sided test.

Table 6 shows the results of the robustness analysis performed using the Heckman method. To control for selection bias, Heckman [26] proposes a two-stage estimation procedure, commonly known as a treatment effect model, to be used when the dependent variable is observed for all observations in the data. In the first stage, a regression is modeled to obtain a positive outcome of the dependent variable, using a probit model. The estimated parameters are then used to calculate the inverse Mill's ratio, then included as an additional explanatory variable in the second stage [27]. To implement Heckman's

two-stage estimation, we need to identify the variables included in the first stage. If such variables are available, the estimation using the treatment effect model yields an unbiased estimate of the coefficient on DCSR. CSR engagement is affected by various factors, such as firm performance, financial constraints, growth opportunities, and industry [5,28–30]. In addition, we also consider the lagged value of DCSR ($DCSR_{t-1}$) to control for the time series of CSR activities [31].

Table 6. CSR and the value of cash holdings: Heckman’s test.

Variable	Dependent Variable: SAR		
	Model (1)	Model (2)	Model (3)
Intercept	−0.003 (−0.06)	0.027 (0.55)	0.063 (1.13)
ΔCASH	1.096 (6.13) ***	1.035 (6.32) ***	0.926 (5.57) ***
ΔCASH×DCSR	−0.678 (−2.37) **		
DCSR	0.025 (1.51)		
ΔCASH×NCSR		−1.228 (−2.96) ***	
NCSR		0.037 (1.77) *	
ΔCASH×BCSR			−0.312 (−0.77)
BCSR			−0.041 (−1.65) *
ΔE	0.694 (7.46) ***	0.684 (7.34) ***	0.673 (7.18) ***
ΔNA	0.312 (6.40) ***	0.314 (6.44) ***	0.311 (6.37) ***
ΔRD	−1.760 (−0.86)	−1.585 (−0.78)	−1.681 (−0.82)
ΔINT	−2.352 (−1.49)	−2.454 (−1.56)	−2.325 (−1.47)
ΔDID	1.637 (1.23)	1.636 (1.23)	1.387 (1.04)
CASH _{t-1}	0.258 (2.04) **	0.251 (1.98) *	0.258 (2.04) **
LEV	−0.013 (−0.32)	−0.003 (−0.08)	−0.001 (−0.03)
MSH	0.019 (0.41)	0.014 (0.30)	0.014 (0.30)
FSH	0.043 (0.74)	0.035 (0.59)	0.031 (0.53)
IMM	−0.023 (−1.02)	−0.042 (−1.88) *	−0.060 (−2.24) **
ID	Included	Included	Included
YR	Included	Included	Included
AdjR ²	0.06	0.06	0.06
F-value	8.36***	8.51***	8.22***
N	4 034	4034	4034

The variables are defined in Appendix A. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively, in a two-sided test.

As shown in Table 6, the analysis performed using the Heckman test reveals that the coefficients on ΔCASH×DCSR and ΔCASH×NCSR are negative at the 1% and 5% significance levels, respectively. In contrast, the coefficient on ΔCASH×BCSR is not significant.

5. Conclusions

As sustainable development has drawn attention as a major international issue due to the global financial crisis, environmental pollution and the depletion of natural resources, one of the key factors emphasized by companies is social responsibility. Most companies strategically implement CSR activities, and previous studies have analyzed the impact of these activities on corporate performance and corporate value [3–5]. However, in order to spread high-quality CSR activities, it is necessary to analyze how capital market investors evaluate companies with excellent CSR (i.e., from an investor’s point of view). This study focused on the fact that a company’s CSR activities are performed based on the company’s surplus funds and, thus, investigated how capital market investors perceive the value of cash held by companies actively engaged in CSR activities.

This study examined the impact of the level of CSR activities conducted by companies on the value of their cash holdings as perceived by investors in Korea, an emerging market. Although there is an increasing emphasis on CSR, emerging markets lack unified regulatory systems and responsible authorities overseeing CSR practices; thus, it is highly likely that a company’s CSR activities reflect the management’s strategic intentions. At the same time, as the cash reserves held by companies are not subject to the control of external

capital suppliers, management can use the cash holdings at their discretion, giving rise to an agency problem between the management and shareholders. Therefore, this study analyzed how investors, aware of these issues, evaluate the cash holdings of Korean companies actively engaged in CSR activities.

The significant and negative coefficient on $\Delta\text{CASH} \times \text{DCSR}$ indicates that investors place low value on the cash holdings of the top 200 companies reported by the KEJI index as actively engaged in CSR activities. This finding remains consistent when we extend the analysis from companies ranked consecutively (2–4 times) to those newly added to the index.

This result implies that capital market investors have a negative perception of the cash reserves held by companies actively engaged in CSR activities. In other words, investors do not believe that the cash held by these companies will effectively enhance their corporate value. To ensure the robustness of the study's results, we analyzed new entries in the index and companies delisted from the index. When companies are newly added to the index, investors evaluate their cash holdings at a lower value. However, there was no significant drop in the perceived value of cash holdings of companies being delisted from the index.

These findings suggest that companies actively engaged in CSR activities do not need to hold excess cash. In general, companies implement CSR activities using internal funds rather than debt. In this process, managers may allocate resources to pursue personal gain and reputation while justifying CSR efforts as a means for enhancing corporate image and sales. When excessive cash is used by managers to pursue self-interest or strengthen their positions, the corporate value drops, compromising shareholders' wealth. This study finds that in the case of the Korean market, where the agency problem of managers such as chaebol leaders has been highlighted, market investors underestimate the value of cash held by companies that actively engage in CSR. This result implies that investors in emerging countries are more aware that cash assets with high liquidity are likely to have agency problems, suggesting that a company's CSR activities are not always perceived positively in the capital market.

The subject of this study is the Korean market. However, emerging markets tend not to have robust CSR regulation and lack systematic establishment and implementation of oversight institutions, while shareholder rights protection is weaker than in Anglo-American regions, as previous studies have revealed. Therefore, caution is required when generalizing the results of this study.

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Appendix A. Variable Definitions

Variable	Definition
SAR	Size-adjusted abnormal returns from April t to March $t + 1$
ΔCASH	Cash and cash equivalents for term t - cash and cash equivalents for term $t-1$ /total assets for term $t-1$
DCSR	An indicator variable that takes a value of 1 if the company is ranked in the KEJI index in the current year, and 0 otherwise.
SCSR2	An indicator variable that takes a value of 1 if the company is ranked in the KEJI index for 2 consecutive years (including current year), and 0 otherwise.
SCSR3	An indicator variable that takes a value of 1 if the company is ranked in the KEJI index for 3 consecutive years (including current year), and 0 otherwise.
SCSR4	An indicator variable that takes a value of 1 if the company is ranked in the KEJI index for 4 consecutive years (including current year), and 0 otherwise.

Variable	Definition
NCSR	An indicator variable that takes a value of 1 if the company is not ranked in the KEJI index just prior to the current year, but is ranked in the current year, and 0 otherwise.
BCSR	An indicator variable that takes a value of 1 if the company is ranked in the KEJI index just prior to the current year but is not ranked in the current year, and 0 otherwise.
ΔE	Net income before tax for term t– net income before tax for term t-1/total assets for term t-1
ΔNA	Net assets excluding cash for term t– net assets excluding cash for term t-1/total assets for term t-1
ΔRD	R&D expense for term t– R&D expense for term t-1/total assets for term t-1
ΔINT	Interest expense for term t– interest expense for term t-1/total assets for term t-1
ΔDIV	Dividends for term t– dividends for term t-1/total assets for term t-1
CASH	Cash and cash equivalents for term t-1/total assets for term t-1
LEV	Total liabilities for term t/total assets for term t
MSH	Majority shareholder ownership
FSH	Foreign ownership

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