How Does Corporate Social Responsibility Affect Asymmetric Information: Evidence from Korean Retail Industry

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Abstract

Purpose – This paper examines how corporate social responsibility of the Korean retail industry affects the degree of asymmetric information. Recent theories predict that a firm's active engagement in socially responsible activities lowers the degree of asymmetric information of the firm.

Research design, data, and methodology – This paper uses the sum of environmental and social scores (ES), published by the Korean Corporate Governance Service in order to proxy the degree of socially responsible management practices of Korean retail firms. This paper uses the ordinary least square method to investigate the above predictions. The publicly traded Korea retail firms listed in the Korean Exchange are analyzed from 2011 to 2016. To measure the degree of asymmetric information, this paper adopts the analyst dispersion and price impact measures.

Results – This paper shows that the ES score has significantly positive relationships with these two measures of information asymmetry. The environmental score seems to increase the analyst dispersion measure and the social score appears to raise the price impact measure mores significantly.

Conclusions – The results do not support the prior theory expecting a negative relationship between corporate social responsibility and the degree of asymmetric information. Environmental and social scores are found to affect the measures of information asymmetry differently.

Keywords: Corporate Social Responsibility, Asymmetric information, Retail Industry.

JEL Classification: G30, G32.

1. Introduction

A corporation's socially responsible activity (hereafter, CSR) has become one of major goals of management recently. Accordingly, it has been widely discussed in literature how a corporation's socially responsibility affects a wide range of corporate policies. The CSR practice is particularly more important in the retail industry where firms directly confront the needs of individual consumers who are more susceptible to the advertising agendas and brand images of retail companies.

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This paper addresses how a firm's CSR practices affect the degree of asymmetric information in the Korean retail industry. To be specific, we test the empirical hypothesis of Cui, Jo, and Na (2018) by using the sample of Korean retail firms. They argue that CSR activity lowers the degree of asymmetric information because their practices of CSR are closely associated with building reputations. They also confirm negative CSR-asymmetric information relationships by adopting the sample of U.S. firms.

To do so, we employ the sample of retail firms traded in the Korean financial market. The sample period of our examination is from 2011 to 2016. To represent a firm's engagement in CSR practices, we use the sum of environmental and social score (hereafter ES-score) published by the Korean Corporate Governance Service. We also construct two widely used measures of information asymmetry, the Amihud (2002) measure of price impact, and the analyst dispersion of earnings forecasts. The ordinary

least square method is used to estimate our empirical models.

In our main analysis, we provide evidence contradicting the prediction of Cui et al. (2018). Unlike their predictions founded on the reputation building theory, we find a retail firm's CSR practice rather increases the degree of asymmetric information for both measures of information asymmetry. To be specific, the coefficients on the ES scores are shown to be all positively significant after controlling for firm level covariates.

This finding might be closely related with the characteristics of retail firms. Retail firms actively engage in advertising and their positioning is already closely associated with the socio-economic status of customers. Due to this tight connection with customers, a retail firm's CSR engagement only marginally or insignificantly affect the degree of asymmetric information.

We further examine the role of environmental and social score separately in the determination of asymmetric information. Interestingly, we find that the environmental score is more closely related to the variation of analyst dispersion measure and that the social score is more tightly associated with price impact measure. However, the examination still does not show any negative relationship between the degree of CSR practice and asymmetric information.

Our analysis based on the environmental/social scores confirms again that the empirical hypothesis of Cui et al. (2018) does not apply well for the Korea retail industry. Furthermore, these findings also suggest that potentially distinctive roles of social and environmental practices in shaping the viewpoint of analysts and investors. This finding is noteworthy because a firm generally engages in environmental and social practices simultaneously as a significantly large correlation between these two scores suggests.

Our work contributes to the literature in a variety of ways. Most of all, we find empirical evidence arguing against the role of CSR practices in reducing asymmetric information. This result is not well aligned with empirical evidence from the entire sample of Korean firms as well as from the U.S. financial markets. The tight customer relationship of Korean retail firms probably explains such a puzzling result.

Our work also clarifies potentially distinctive roles of a firm's environmental and social activities in influencing analysts and investors. Our empirical evidence shows that a firm's environmental and social practices may affect the stakeholders of the firm differently. A firm's environmental and social activities are generally practiced together and accordingly, the distinctive implications of these two practices are largely unexamined in the literature.

This paper proceeds as follows. In section 2, we review related literature. Section 3 describes data and our empirical strategy. Section 4 contains the main results. Section 5 concludes.

2. Literature Review

Cui et al. (2018) develop a testable hypothesis expecting a negative relationship between CSR and information asymmetry. Their hypothesis development is based on the reputation-building theory; For instance, Freeman (1984) argues that a firm may engage in CSR practices to enhance communications between its managers and stakeholders. Furthermore, Jo and Harjoto (2011) argue that a firm's engagement in CSR practices mitigates the potential conflicts of interests among its various stakeholders. Because a firm's management practices toward socially responsible activities indicate better communications between insiders and outsiders, an active CSR activity implies a lower degree of asymmetric information.

This work is also associated with a growing literature investigating how CSR practices affect corporate policies in the Korean market. Most studies have focused on the relationship between CSR practices and a firm's performances in terms of operating profits and stock prices. For instance, Choi, Kwak and Choe (2010) document that CSR activities influence financial performance positively by adopting the stakeholder-weighted CSR index. Han et al. (2016) examine potentially nonlinear relationships between CSR practices and financial performances on disclosure score. Kim and Wee (2011) and Jang and Choi (2010) use he index published by the Korea Economic Justice Institute to investigate CSR-financial performance relationships.

Our work is most closely related to recent studies investigating the effect of CSR practice on the degree of asymmetric information in the Korean financial market. In fact, recent studies confirm that the measures of asymmetric information are negatively related to the degree of CSR practices in the Korean market. These studies also find that these negative relationships are particularly more significant for non-chaebol affiliates.

Finally, this study is also a branch of studies that emphasize the firm/industry level heterogeneity in shaping the relationship between CSR practices and corporate policies. For example, Lin, Chan, and Dang (2015) highlight that each firm confront heterogenous CSR requirements according to the characteristics of firms. Miralles-Quiró, Miralles-Quiró, and Valente Gonçlves (2018) show that the valuation effect of CSR is more substantial for environmentally sensitive industries.

3. Data and Empirical Models

3.1. Data Description and Empirical Model

This study uses two different data sets for our estimation. The first one is related to the CSR practices of a corporation. The Korean Corporate Governance Service

evaluates a firm's engagement in environmental, social and governance practices mostly for the firms traded in the Korean Exchange. We select the environmental and social scores provided by the Korean Corporate Governance Service. Then we construct the sum of these two scores as ES score in line with the approach of Cui et al. (2018).

To be specific, a firm's environmental performance is closely related to managerial activities that concern with green marketing, emission of pollutants, and the production of environmentally friendly goods. The social score is tightly associated with a corporation's performance about business ethics, sustainable growth and labor related issues. These two scores are representative measures that evaluate a corporation's engagement in socially responsible activities.

The next data source is related to collecting a firm's financial information. We construct two representative variables that proxy the degree of information asymmetry. The first one is the dispersion of analysts' earnings forecasts (DAF), which captures differences in investors' expectations about future earnings per share. We define the analyst dispersion measure as the annual average of the monthly forecast dispersions for the earnings per share standardized by the absolute value of the average earnings forecast. A greater forecast dispersion implies a more significant degree of information asymmetry. This measure is also widely used in testing the forecasting dispersion anomaly, which argues the tendency of stocks with large analyst forecast dispersion to generate lower future return. The other measure is the price impact measure (PI) of Amihud (2002). The price impact measure refers to the ratio of the absolute value of daily return and trading volume of the day. The measure represents the daily price variation from the change in one dollar of trading volume. Thus, a higher value of the price impact measure indicates a lower degree of liquidity, and accordingly a more severe degree of information asymmetry.

This paper introduces various firm characteristic variables to deal with omitted variable bias problems. RD is the ratio of R&D expenditure to total assets. A substantial R&D expenditure implies the significance of intangible assets which raises the degree of asymmetric information. CAPX is a firm's capital expenditure normalized by its total sales, which emphasizes the significance of fixed assets in lowering information asymmetry. FCF is the amount of free cash flow, which is defined as operating cash flow less dividend payments of common and preferred stocks, normalized by total assets. As the amount of free cash flow increases, a manager can easily divert a firm's resources and accordingly it has positive association with information asymmetry. ADV represents a firm's advertising expenses standardized by its total sales and also reflects an association with considerable information asymmetry. SIZE is the logarithm of asset size. As the size of firm grows, the degree of information diminishes. AGE refers to the time period after a firm's initial public offering and it also

decreases the level of information asymmetry.

The empirical in our empirical examination can be described as the following equation (1):

$$Asymmetry_t = \alpha + \beta ES_{t-1} + \gamma Contorls_t + \epsilon_t \qquad (1)$$

where the dependent variable, Asymmetry, is the degree of asymmetric information measure, analyst forecast dispersion or price impact measure of Amihud (2002). The prior period ES score is our main variable of interest. The adoption of prior period variable potentially mitigates biases from endogenous relationships. The set of control variables includes R&D expenditure, capital expenditure, free cash flow, advertising expense, and firm size proxy variables as described above.

The sample of retail firms listed in the stock market division of Korea Exchange because the coverage of ES score is limited to these firms. The sample period is chosen from 2011 to 2016. Every variable is winsorized at the 1% level. For the estimation of our model, we use the ordinary least square (OLS) method in line with a number of prior studies.

3.2. Summary Statistics

Table 1: Summary Statistics

STATS	Mean	p25	p50	p75	SD
DAF	0.12	0.06	0.11	0.17	0.08
PI	0.01	0.00	0.00	0.01	0.02
ES-score	231.28	152.00	218.60	291.40	107.80
E-score	106.44	48.00	102.80	140.30	62.83
S-score	124.84	80.00	118.00	150.00	53.54
RD	0.00	0.00	0.00	0.00	0.00
CAPX	0.05	0.01	0.02	0.07	0.06
FCF	0.01	-0.02	0.00	0.03	0.07
SALESG	1.13	1.01	1.07	1.19	0.24
ADV	0.02	0.00	0.00	0.02	0.05
AGE	31.94	15.00	34.00	44.00	17.32
SIZE	21.45	20.55	21.37	22.45	1.38

Table 1 provides the descriptive statistics of our variables of interests. The dispersion of analyst forecasts, the price impact measure of Amihud (2002), the ES score, the environmental score, and the social score are the main variables of interests. The table also includes the summary statistics for the set of firm characteristic variables illustrated above. The table calculates the mean, first quartile, median, third quartile, and the standard deviation for each variable.

Table 1 documents that the social score explains more about the total ES score compared to the environmental score on average. For instance, the mean of social score is 124.8, which is significantly larger than that of the environmental score, 106.44. Considering the fact that the

mean value of ES score is 231.28, the social score explains a significantly large part of the ES score. Yet, the standard deviation shows quite different patterns. The standard deviation of the environmental score is greater than that of the social score. This large standard deviation indicates a substantial explanatory power of the environmental score on the distribution of asymmetric information in spite of its smaller mean value.

Table 1 also points out that almost all of the firm characteristic variables show slightly right skewed distributions. The mean value of these characteristics variables are generally greater than the corresponding median values. One exception is the AGE variable that shows a higher median value compared to its mean. This implies a relatively large proportion of young firms in the sample.

Table 2 estimates the pair-wise correlation coefficients among our variables of interests. These correlation coefficients are calculated for the information asymmetry measures, the proxy variables for CSR practices, and other control variables as well.

Table 2: Correlation Coefficients

No.	Variable	1	2	3	4	5	6
1	DAF	1.00					
2	PI	-0.01	1.00				
3	ES-score	0.18	-0.13	1.00			
4	E-score	0.20	-0.11	0.94	1.00		
5	S-score	0.12	-0.14	0.91	0.71	1.00	
6	RD	-0.06	0.08	-0.00	0.02	-0.03	1.00
7	CAPX	-0.25	-0.08	0.22	0.20	0.22	-0.04
8	FCF	0.04	0.35	-0.13	-0.12	-0.11	0.02
9	SALESG	-0.03	-0.09	-0.01	-0.01	-0.02	0.21
10	ADV	-0.16	-0.00	-0.13	-0.16	-0.07	-0.06
11	AGE	0.18	-0.00	0.30	0.27	0.29	0.09
12	SIZE	0.11	-0.48	0.65	0.54	0.66	-0.28
No.	Variable	8	9	10	11	12	13
1	DAF						
2	PI						
3	ES-score						
4	E-score						
5	S-score						
6	RD						
7	CAPX	1.00					
8	FCF	-0.30	1.00				
9	SALESG	-0.03	0.00	1.00			
10	ADV	0.00	0.28	-0.08	1.00		
11	AGE	-0.10	-0.12	0.07	-0.23	1.00	
12	SIZE	0.20	-0.17	0.06	-0.08	0.17	1.00

Table 2 presents a number of noticeable findings. First of all, the dispersion measure of analyst forecast and the price impact measure of Amihud (2002) show a weakly negative correlation at –0.01, This low correlation indicates these two asymmetric information measures capture different aspects of information asymmetry. Furthermore, the dispersion of analyst forecasts show even significantly positive correlations with the measures of CSR practices. For example, the dispersion measure has a positive correlation of 0.18 with the ES score and 0.20 with the environmental score. These positive correlations are not well aligned with the hypothesis of Cui et al. (2018). Finally, we observe a relatively strong correlation structure between the social and environmental scores. The correlation coefficient of 0.71 implies that a firm tends to engage in environmental and social management practices simultaneously as reported in a number of extant studies.

4. Main Empirical Analysis

4.1 ES-Score

Table 3: CSR and Asymmetric Information

	Analyst Dispersion		Price Impact	
ES-Score	0.014*	0.017**	-0.003	0.006**
	(1.84)	(2.13)	(-1.39)	(2.62)
R&D		-10.320		-4.139
		(-0.89)		(-1.42)
CAPX		-0.355***		0.033
		(-2.72)		(1.06)
Free Cash Flow		0.033		0.111***
		(0.27)		(3.85)
SALES Growth		-0.011		-0.003
		(-0.33)		(-0.35)
Advertisement		-0.199		-0.051
		(-1.23)		(-1.33)
Age		0.000		0.000
		(0.75)		(0.70)
Size		-0.020		-0.011***
		(-0.72)		(-5.98)
Intercept	0.093***	0.127***	0.018***	0.240***
	(4.96)	(2.83)	(3.40)	(6.45)
N	107	107	107	107
adj. R-sq	0.022	0.085	0.009	0.338

Table 3 presents the estimation result of the main empirical model. The sum of environmental and social score, ES-score is included as the benchmark CSR measure. The

first two columns examine the dispersion measure of analyst forecasts and the next two columns investigate the price impact measure of Amihud (2002) as the dependent variable. We initially consider a simple correlation between the ES-score and the degree of information asymmetry and take account of the effect of control variables next. The table includes the estimated coefficients from our model and corresponding t-statistics (in parenthesis). The total number of firm-year observations and the adjusted R2 are documented as well.

Table 3 shows a positive relationship between CSR performance and the degree of information asymmetry. For example, the coefficients on ES-score are all significantly positive when we use the analyst dispersion measure as the dependent variable. The coefficients are 0.014 and 0.017 respectively in the first and second empirical models. If we consider the price impact measure of Amihud (2002), the coefficient on the ES-score is significantly positive with the inclusion of control variables.

These results are not in line with the prediction of Cui et al. (2018). They predict a negative relationship between CSR performance and the degree of information asymmetry based on the reputation building theory of Freeman (1984). Yet, our estimated coefficients on CSR performances are significantly positive or statistically insignificant. None of these coefficients support the empirical hypothesis of Cui et al. (2018).

It is also noteworthy that these positive coefficients are not well aligned with negative coefficients reported in the Korean financial market. Especially for non-chaebol affiliates, it is well verified a negative relationship between CSR performance and the degree of information asymmetry. Our finding suggests that such a negative relationship does not apply well for the sector of Korean retail industry.

This finding might be closely related with the characteristic of the retail industry. Retail firms generally have well-established customer relationships. These firms actively engage in advertising and their positioning is already closely associated with the socio-economic status of customers. Due to such a well established link with customers, a retail firm's CSR performance only marginally relaxes its degree of asymmetric information. In other words, retail firms may not have to rely on CSR practices to reduce the degree of asymmetric information because they already have a variety of other effective channels to do so.

4.2. Environmental and Social Scores

Now, we separately analyze the effect of environmental and social scores on the degree of information asymmetry. If the prediction of Cui et al. (2018) holds, each CSR performance measure is expected to have negative relationships with the degree of information.

Table 4 provides the estimation results of our empirical model when we adopt the environmental score as the CSR

performance measure. In line with Table 3, the first two columns incorporates the dispersion measure of analyst forecasts and the next two columns includes the price impact measure of Amihud (2002) as the dependent variable. Table 4 reports a simple correlation between the environmental score and the degree of information asymmetry and the results accounting for the effect of control variables next. Table 4 reports the estimated coefficients from the equation (1) and corresponding t-statistics (in parenthesis). The number of firm-year observations and the adjusted R2 are included as well.

Table 4: Environmental Score and Asymmetric Information

	Analyst Dispersion		Price Impact	
E-Score	0.026**	0.030**	-0.004	0.007*
	(2.08)	(2.27)	(-1.16)	(1.90)
R&D		-10.623		-3.439
		(-0.92)		(-1.17)
CAPX		-0.353***		0.038
		(-2.72)		(1.22)
Free Cash Flow		0.032		0.113***
		(0.26)		(3.86)
SALES Growth		-0.011		-0.004
		(-0.35)		(-0.50)
Advertisement		-0.184		-0.049
		(-1.14)		(-1.25)
Age		0.000		0.000
		(0.83)		(0.98)
Size		-0.016		-0.010***
		(-0.59)		(-5.68)
Intercept	0.097***	0.130***	0.016***	0.215***
	(6.21)	(2.94)	(3.57)	(6.13)
N	107	107	107	107
adj. R-sq	0.030	0.090	0.003	0.317

Table 4 documents positive relationships between the environmental score and the degree of information asymmetry, consistent to the result of Table 3. For instance, the coefficients on the environmental score turn out significantly positive in the case of the analyst dispersion measure. These coefficients are 0.026 and 0.030 respectively in the first and second columns. With the price impact measure, the environmental score has positively significant effects on the degree of asymmetric information in the regression model incorporating firm characteristic variables.

Table 4 confirms the robustness of our results in Table 3. Even though we employ a sub-category of ES-score, the findings in Table 3 remain unchanged and are still inconsistent to the prediction of Cui et al. (2018) built on the reputation building hypothesis of Freeman (1984). The estimates coefficients are significantly positive or statistically insignificant contradictory to the prediction of Cui et al.

(2018). These coefficients are not well aligned with the negative relationship between CSR performance and the degree of asymmetric information reported in the Korean financial market as well. Such a robust result also supports our argument emphasizing the industry specific characteristic of retail firms in shaping the positive relationships.

Next, we present the estimation results of our regression model when we use the social score as the CSR performance measure. Table 5 reports a simple correlation between the social score and the degree of information asymmetry and the results with effect of control variables next. The dispersion measure of analyst forecast and the price impact measure of Amihud (2002) are employed. The table reports the estimated coefficients, corresponding t-values, the number of observations and the adjusted R2 value.

Table 5: Social Score and Asymmetric Information

	Analyst Dispersion		Price Impact	
S-Score	0.019	0.025	-0.006	0.013***
	(1.26)	(1.52)	(-1.44)	(2.78)
R&D		-9.852		-4.095
		(-0.84)		(-1.41)
CAPX		-0.336**		0.033
		(-2.55)		(1.09)
Free Cash Flow		0.034		0.111***
		(0.28)		(3.86)
SALES Growth		-0.012		-0.003
		(-0.36)		(-0.32)
Advertisement		-0.221		-0.058
		(-1.35)		(-1.54)
Age		0.000		0.000
		(0.92)		(0.67)
Size		-0.017		-0.012***
		(-0.60)		(-6.06)
Intercept	0.101***	0.130***	0.019***	0.244***
	(4.97)	(2.87)	(3.32)	(6.54)
N	107	107	107	107
adj. R-sq	0.006	0.065	0.010	0.343

Table 5 reports a significant positive relationship between the social score and the degree of information asymmetry with the price impact measure of Amihud (2002). For instance, the coefficient on the social score is 0.013 and statistically significant when we control for the firm characteristic variables. Yet, all other coefficients turn out statistically insignificant unlike the results of Table 3 and Table 4.

The results of Table 5 do not support the prediction of Cui et al. (2018). Their reputation building argument predicts a negative relationship between social score and the degree of asymmetric information. Significantly positive or statistically insignificant coefficients on the social score reported in Table 5 are not in line with the predictions of Cui et al. (2018).

Table 5 also suggests a potentially distinctive role of the environmental score and social score in determining the degree of asymmetric information. Unlike the environmental score, the social score only positively affects the price impact measure of Amihud (2002). This difference is particularly interesting if we consider a strong correlation between the social and environmental score 0.71, reported in Table 2.

To clarify potentially different roles of the environmental and scores in shaping the degree of asymmetric information, Table 6 includes both of the scores as the proxy variables for CSR performances. In line with the previous tables. the first two columns introduces the dispersion measure of analyst forecasts and the last two columns consider the price impact measure of Amihud (2002) to represent asymmetric information. The regression models are initially analyzed without control variables and incorporate firm characteristic variables next. The table contains the estimated coefficients and corresponding t-statistics (in parenthesis). The number of observations and the adjusted R2 are included as well.

Table 6: Environmental/Social Score and Asymmetric Information

	Analyst Dispersion		Price Impact	
E-Score	0.030	0.030*	-0.001	0.003
	(1.66)	(1.66)	(-0.19)	(0.60)
S-Score	-0.006	0.002	-0.005	0.012**
	(-0.30)	(0.07)	(-0.87)	(2.08)
R&D		-10.607		-4.267
		(-0.92)		(-1.46)
CAPX		-0.354***		0.032
		(-2.70)		(1.04)
Free Cash Flow		0.032		0.110***
		(0.26)		(3.83)
SALES Growth		-0.011		-0.002
		(-0.35)		(-0.30)
Advertisement		-0.185		-0.055
		(-1.13)		(-1.44)
Age		0.000		0.000
		(0.80)		(0.62)
Size		-0.016		-0.012***
		(-0.58)		(-6.06)
Intercept	0.100***	0.130***	0.019***	0.247***
	(4.98)	(2.88)	(3.31)	(6.54)
N	107	107	107	107
adj. R-sq	0.022	0.081	0.001	0.339

Table 6 confirms potentially different roles of the environmental and social scores in determining the measures of asymmetric information. For instance, the environmental score has significantly positive relationships with the measure of analyst forecast dispersion but no significant relationship with the price impact measure of Amihud (2002). In contrast, the social score has significantly positive relationships only with the price impact measure of Amihud (2002).

The results of Table 6 still do not support the predictions of Cui et al. (2018). Even though we include both of the environmental and social scores as proxy variables for CSR performances, all of these coefficients are significantly positive of statistically insignificant. These estimation results are contradictory to the prediction of Cui et al. (2018) that expects negative coefficients on the CSR performance proxy variables.

Table 6 also suggests that analysts and investors may respond differently to the environmental and social practices of a corporation. This finding implies that analysts respond more sensitively to the change of a corporation's environmental policy than the change of its social practice. However, investors in the Korean financial market appear more sensitive to the change of a firm's social policy rather than its environmental policy. Analysts and investors may have different viewpoints when they evaluate corporate policies.

Table 6 supports our argument highlighting the industry specific characteristic of retail firms in shaping the positive relationships. Even if we consider the environmental and the social score separately, we are not able to obtain a negative relationship between CSR performance and the degree of asymmetric information. This result is a unique characteristic of retail industry in contrast to the negative relationships reported in the sample of entire Korean corporations.

5. Conclusions

This paper examined how CSR engagements affect the degree of asymmetric information in the Korean retail industry. Recent studies such as Cui et al. (2018) predict a negative CSR-asymmetric information relationship based on the reputation building theory of Freeman (1984). This paper tested this hypothesis for the publicly traded Korean corporations. We use the sum of environmental and social scores (ES-score) as the benchmark measure of CSR performance, which are provided by the Korean Corporate Governance Services. The measures of dispersions in analyst earnings forecast and price impact of Amihud (2002) are employed to proxy the degree of asymmetric information.

We adopt the ordinary least square least square to test the hypothesis. Our estimation results do not support the prediction of Cui et al. (2018). We find significantly positive or statistically insignificant relationships between CSR performances and the degree of information asymmetry in our examinations. These findings are robust whether we use the ES-score or the environmental/social score separately.

We argue that these results might be closely associated with the characteristics of retail industry. Retail firms actively engage in advertisement toward consumers and their

positioning is already connected with the socio-economic status of customers. Because of these well-established connections with customers, a retail firm's CSR engagement insignificantly reduces the degree of information asymmetry.

However, this paper did not directly test the above argument, which is beyond the scope of the paper. It is worthwhile testing the prediction of Cui et al. (2018) based on the sample of retail firms in different countries. Such an examination will verify whether the characteristics of retail firms indeed affect the relationships between CSR performance and the degree of information. We leave these topics for future research.

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