Article

Do Peer Firms Affect Firm Corporate Social Responsibility?

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Abstract: Peer-firm strategies are a critical factor for corporate finance, and corporate social responsibility (CSR) is the main trend for evaluating the behavior of firms. On the basis of the connection between peer strategy and CSR, this paper explores the CSR strategies employed by a sample of Chinese firms during the 2008–2015 period. Our two main empirical findings are as follows. First, the CSR strategies of firms have a positive effect on their CSR behavior. Second, when there is the CSR gap between firms and peer firms, firms will feel the pressure from stakeholders and the public and improve the level of CSR performance. Our paper enriches empirical research on the CSR behavior of Chinese firms.

Keywords: peer effect; corporate social responsibility; firm behavior

1. Introduction

The current studies on Corporate Social Responsibility (CSR) focus on how finance factors affect CSR performance, while neglecting the behavior of peer firms. The recent literature has discovered that peer effects can explain firm behaviors that are difficult explain by traditional theory [1]. In corporate behavior, the research on peer effect focuses on financing, for example, capital structure [2]. In the literature about behavior, financial or economic, or reputational concerns [3], herding [4], and learning [5] are explained as the reason for the peer effect. Meanwhile, specialist industries, such as the chemical and petroleum industries tend towards greater CSR performance, because firms in these industries hope to avoid boycotting by stakeholders such as environmentalists. Brock (1993) employed models to analyze how peer effects in the financial market influence asset-price fluctuations and market size [6]. The high costs of information collection are one of the reasons that induce peer effects, in which low-quality or low-efficiency firms are prompted to imitate high-quality or high-efficiency peers in order to reduce their information collection and identification costs [4]. Therefore, firms are more affected by peers belonging to the same industry.

CSR is viewed as a signal of firms' quality by shareholders, creditors and credit agencies. CSR can mitigate the information asymmetry between firms and stakeholders. Under traditional corporate governance, financial statements are the most important measure for communicating with outsiders; however, it is difficult for stakeholders to obtain the available information for their own benefit. CSR statements supplement the information with regard to stakeholders in order to improve firms' transparency. Gong et al. (2016) suggest that firms with CSR are able to enjoy a relatively low interest rate when they issue bonds [7]. Yang et al. (2017) also find that CSR statements can lower information asymmetry between firms and creditors, so that firms with CSR can maintain higher leverage, and lower the speed of leverage adjustment when their leverage is above the target leverage [8]. Gong and Ho (2016) indicate that CSR behavior can provide additional information for evaluating equity,

in order to enhance the efficiency of stock prices in China [9]; meanwhile, Ho et al. (2015) also find firms with high (low) information ratings incline to low (high) debt financing and leverage [10]. In the currently available literature, CSR behavior is of benefit to a firm's transparency; thus, firms with good CSR behavior enjoy lower information asymmetry with stakeholders.

CSR behavior transmits important quality information to stakeholders. However, fulfilling CSR incurs costs, resulting in differences between firms in terms of their motivation for and intention to implement CSR practices. In the process of fulfilling CSR, a firm must regularly issue financial statements and other reports containing comprehensive corporate information pertaining to interest groups such as creditors, employees, suppliers, customers, and the community. Consequently, information about the firm becomes more transparent; this can have two effects: First, it can reduce the firm's frictional resistance in the external market, or enhance its internal operational efficiency. For this effect to occur, the firm must issue CSR reports and fulfill CSR responsibilities to its stakeholders. Second, CSR reports can enhance corporate information transparency, and thus reduce the motivation of low-quality firms to actively publish corporate information. However, when evaluating firm quality, the market typically distinguishes high-quality firms from low-quality firms according to their CSR performance or the information they disclose to the public. This can motivate firms—particularly low-quality firms—to imitate high-quality peers in order to receive more favorable recognition from the market. Thus, enhancing the CSR performance of peer firms can further motivate low-quality firms to enhance their own CSR performance.

The present study also found that peer effects can motivate listed firms in China to implement CSR. First, we investigated whether, through enhancing their CSR performance levels, peer firms encourage other firms to conform and raise their own CSR standards. Our results indicate that CSR performance levels correlate positively between peer firms, suggesting that peer effects do motivate other firms to raise their CSR involvement. Second, we examined whether pressure to implement CSR actually affects the extent to which it is implemented. Differences in CSR performance levels between firms are utilized to measure the degree of CSR pressure. If CSR is indeed crucial for communicating quality information to stakeholders, differences in CSR performance between firms may draw their attention, thus pressuring firms to fulfill CSR obligations to employees and suppliers. The results of this empirical study reveal that substantial differences in CSR performance between firms can increase the motivations for CSR performance, suggesting that decisions to determine CSR performance levels are affected by peer effects.

The remainder of this paper is organized as follows. Sections 2 and 3 presents the data, variables. Section 4 shows empirical models employed in this study. In Section 5, the results of an empirical analysis are given. Finally, research conclusions and future implications are offered in Section 6.

2. Data

Sample data are collected from 1983 listed firms in 17 industries (these industries are classified according to the updated primary industry classification standards proposed by the China Securities Regulatory Commission) for the 2008–2015 period. Firms are listed on the Shanghai and Shenzhen stock markets, and the data are in the form of panel data. All data are collected from a CSR data subset and other relevant subsets from the China Stock Market and Accounting Research (CSMAR) Database. To enhance the robustness of the results, the following procedures are performed. Firms are excluded if they are financial institutions (according to the China Securities Regulatory Commission, financial institutions can be classified as banking and nonbanking financial institutions, such as banks, securities, insurance and trust), if they experienced major corporate restructuring or changes in primary business services within the study period, if they were classified as special treatment (ST) companies within the study period (because these firms differ substantially from regular firms), or if they had been listed for less than 1 year within the study period (because newly listed firms may have unconventional financial structures or behaviors for their initial public offerings, such as unusual leverage levels and

high cash holdings). Finally, the sample data are treated with the winsorization method at the 1st and 99th percentiles to reduce the effects of outliers on the robustness of the empirical results.

3. Variables

3.1. Firm CSR Performance Level (CSR)

Data from the CSMAR CSR data set are used to measure the CSR performance levels of the sampled firms. The CSR disclosure index employed by Ernst (1976) is referenced to evaluate the sample firms' performance in 12 CSR items, each of which is assigned a value of 1 if the performance status is published, otherwise 0 (an unpublished CSR item is considered unfulfilled). In addition, an equal weight method is adopted to measure the CSR performance status of the firms, for which the total values assigned to each sample firm are divided by 12.

3.2. Peer CSR Performance Level (CSR$_{Peer}$)

The model for measuring the capital structure of peer firms employed by Leary and Roberts (2014) is used to define the CSR performance level of peer firms; this is calculated as the arithmetic mean of the CSR performance levels of all listed firms in the same industry except for the firm under investigation:

$$CSR_{\text{Peer}i} = \overline{\sum_{j=1}^{n} CSR_{j-i}}$$

where $CSR_{\text{Peer}i}$ denotes the CSR performance level of the peers of firm i, j represent the number of firms in an industry (ranging from 1 to n), and $j - i$ denotes all firms in the industry except for firm i. Higher values of $CSR_{\text{Peer}i}$ suggest higher CSR performance levels among the peer firms.

3.3. CSR Pressure Index (CSR$_{Gap}$)

When the level of CSR performance of a firm differs from that of its peer firms, market authorities may consider this firm to be of lower quality because it does not consider the responsibilities of its stakeholders, resulting in operational friction such as higher financing, human resource, or customer communication costs. Thus, when a firm has a drastically lower CSR performance level than its peers, this can generate considerable pressure from stakeholders and the public. The CSR performance gap (CSR_{Gap}), which indicates the difference between a firm's CSR performance level (CSR) and that of its peer firms (CSR_{Peer}), is adopted as the CSR pressure index for a firm:

$$CSR_{\text{Gap}i} = CSR_i - CSR_{\text{Peer}i}$$

where $CSR_{\text{Gap}i}$ denotes the CSR pressure index for firm i.

4. Empirical Method

The model employed by Leary and Roberts (2014) is adopted to develop the following two measurement models to verify the current research hypotheses:

$$CSR_i = \alpha_0 + \alpha_1 CSR_{\text{Peer}i} + \theta \times Z_i + \gamma_t + \varphi_i + \varepsilon_i \tag{1}$$

$$CSR_i = \beta_0 + \beta_1 CSR_{\text{Gap}i} + \theta \times Z_i + \gamma_t + \varphi_i + \varepsilon_i \tag{2}$$

where CSR_i denotes the CSR performance level of firm i; $CSR_{\text{Peer}i}$ is the CSR performance level of the peer firms of firm i; $CSR_{\text{Gap}i}$ denotes the CSR pressure index for firm i; Z_i represents a series of control variables, namely size (*Size*), book leverage level (*Booklever*), growth potential (*MtkBook*), profit capability (*Profit*), size of the board of directors (*Boardsize*), and the proportion of shares held by the top ten shareholders (*Top10share*); γ_t denotes time-fixed effects; and φ_i is the individual effects of firm i.

A two-way fixed-effects model is employed to control the influence of unobserved heterogeneity on the robustness of the regression results. To control the effects of individual firms φ_i on the variance, clustering is performed at the firm level to adjust the standard deviations (SDs) of the coefficients. In Model (1), α_1 is used to measure the influence of peer firms on a company's CSR performance. The present study hypothesized that the influence would be positive, suggesting that higher CSR performance levels in peer firms will motivate a firm to enhance its own CSR performance level. In Model (2), β_1 denotes the influence of the CSR pressure index. The present study hypothesized that the influence would be positive, implying that larger gaps in CSR performance level between a firm and its peer firms motivates the firm to actively fulfill its CSR.

5. Empirical Results and Analysis

5.1. Descriptive Statistics

To accurately measure the characteristics of the sample data, a descriptive statistical analysis is performed, yielding two findings. First, the mean CSR performance level of the sample is 0.1793 (SD = 0.3121), suggesting that, on average, the CSR performance levels among the sampled firms are relatively low and widely distributed. This result indicated that most of the sampled firms did not fulfill their CSR. This value served as the ideal reference for determining whether a firm undertakes its CSR activities. Second, the mean CSR performance level of peer firms is 0.1793 (SD = 0.0422). However, the range of this value is 0–0.3896, showing that the CSR performance levels of the peer firms is relatively low, with a highly concentrated distribution.

5.2. Empirical Results

Table 1 presents the empirical results of Model (1). Column 1 shows that the coefficient of CSR_{Peer} is 0.870 (t = 14.07), suggesting that firms increase their CSR performance level when peer firms raise their CSR performance levels. Column 2 shows a significantly positive correlation between *CSR* and CSR_{Peer} after a series of control variables are incorporated, indicating that the peer effect of CSR performance is robust. These results demonstrate that the CSR behaviors of peer firms have a positive influence on a firm's CSR behavior.

For studies aiming to measure peer effects, the reflection problem can affect the robustness of the empirical results. Thus, endogenous and exogenous effects must be distinguished to verify the robustness of the empirical results. According to Manski (2015), the mean values for peer firms can be lagged by one period to reduce endogeneity problems and thus isolate the exogenous effects [11]. Thus, from the perspective of robustness, one period-lagged CSR_{Peer} is used as a proxy variable for peer effects to verify the current research hypotheses. In Column 3, the coefficient of $CSRpeer_{t-1}$ is 0.952 (t = 13.83), which is similar with the result of Column 1. Also, Column 4 include the control variables of firms' characteristics, and the positive relation of firms' CSR performances on peers is still robust.

In the control variables, the coefficients of *Size* are significantly positive, indicating that larger firms have strong potential in doing CSR. The coefficients of *BookLever* are significantly negative, revealing that CSR firms are prone to risk aversion. In the literature, CSR firms, such as employee-oriented firms, are inclined to lower debts to control the risk of bankruptcy (Črnigoj and Mramor, 2015) [12]. The coefficients of *MktBook* are significantly positive, suggesting that high-growth firms are more likely to do CSR. The coefficients of *Boardsize* are significant and positive, revealing that firms with larger boards have better CSR performance. Bear et al. (2010) and Huse et al. (2009) also find that board diversity can improve firms' CSR performance. The coefficients of *Top10share* are significantly negative, indicating that equity concentration reduces CSR performance [13,14].

Table 2 reports the empirical results for how the pressure from peers' CSR performance affects firms' CSR behavior. The coefficients of *CSRgap* are 0.997 (t = 731.4), revealing that firms will increase their CSR performance when there is a CSR performance gap between the firm and its peers within the

industry. Meanwhile, Column 2 includes control variables, and the results are still significantly positive, suggesting that, under pressure of CSR performance from peers, firms are inclined increase their CSR behaviors. Furthermore, we replace *CSRgap* with *CSRgap*$_{t-1}$ in order to mitigate the endogenous problem, with the results being reported in Column 3 and Column 4. The results still support the conclusion that CSR pressure from peers encourages firms to increase their CSR performance.

Table 1. Regression results for the influence of peer firm CSR performance level on firm CSR performance level.

	(1)	(2)	(3)	(4)
CSRpeer	0.870 ***	0.585 ***		
	(14.07)	(9.50)		
CSRpeer$_{t-1}$			0.952 ***	0.667 ***
			(13.83)	(9.70)
Size		0.0768 ***		0.0822 ***
		(30.27)		(30.06)
BookLever		−0.103 ***		−0.134 ***
		(−6.06)		(−7.10)
MktBook		0.00328 **		0.00327 **
		(2.30)		(2.31)
Profit		−0.00211		−0.0315
		(−0.08)		(−1.21)
Boardsize		0.0427 ***		0.0482 ***
		(4.35)		(4.20)
Top10share		−0.0788 ***		−0.0686 ***
		(−4.27)		(−3.32)
Constant	0.475 ***	−1.201 ***	−0.104 ***	−1.814 ***
	(33.41)	(−21.63)	(−6.47)	(−32.45)
Individual effects	Controlled	Controlled	Controlled	Controlled
Time-fixed effects	Controlled	Controlled	Controlled	Controlled
Obs	11,297	11,297	9314	9314
Adjust-R^2	0.142	0.24	0.147	0.251

Notes: The values in parentheses are the *t* statistics. *, **, and *** significance at the 10%, 5%, and 1% levels, respectively.

Table 2. Regression results for the influence of the CSR pressure index on the firms' CSR performance levels.

	(1)	(2)	(3)	(4)
CSRgap	0.997 ***	0.990 ***		
	(731.40)	(666.92)		
CSRgap$_{t-1}$			0.831 ***	0.792 ***
			(111.85)	(94.93)
Size		0.00168 ***		0.0253 ***
		(2.95)		(12.87)
BookLever		0.0196 ***		−0.0254 **
		(5.85)		(−2.16)
MktBook		−0.00121 ***		−0.000168
		(−2.69)		(−0.34)
Profit		0.0250 ***		0.0235
		(2.88)		(1.28)
Boardsize		0.0147 ***		0.0250 ***
		(8.51)		(3.41)
Top10share		0.0234 ***		0.0231 *
		(7.95)		(1.85)
Constant	0.214 ***	0.127 ***	0.186 ***	−0.415 ***
	(101.63)	(10.01)	(39.80)	(−10.40)
Individual effects	Controlled	Controlled	Controlled	Controlled
Time-fixed effects	Controlled	Controlled	Controlled	Controlled
Obs	11,297	11,297	9314	9314
Adjust-R^2	0.981	0.982	0.692	0.704

Notes: The values of the *t* statistics are in parentheses. *, **, and *** indicate significance levels of 10, 5, and 1%, respectively.

Overall, same-period and one-period-lagged data are applied to the two measurement models. The results reveal that, regardless of whether the control variables are included in the model, firm CSR performance levels are positively influenced by the CSR behaviors of their peer firms. This suggests that increased (decreased) CSR performance levels among peer firms motivates firms to increase (restrain) their CSR performance level, supporting the proposed research hypotheses.

6. Conclusions

Companies listed on the Shanghai and Shenzhen stock markets in the 2008–2016 period that disclosed CSR reports are sampled to verify how peer effects influence CSR performance. The following two research hypotheses are verified: (1) The CSR performance of Chinese firms is positively affected by that of their peer firms, and (2) CSR pressure has a positive effect in motivating firms to improve their CSR performance. The empirical results support both hypotheses, suggesting that increased CSR performance levels among peer firms encourage firms to imitate their peers' CSR behaviors; increased CSR pressure drives firms to raise their CSR performance level. The present study abandoned traditional approaches to analyzing the influence of CSR on corporate value or financial behavior. Instead, peer effects were adopted to explore firm motivation in fulfilling CSR. The approach adopted in this study contributes to the literature by providing a novel empirical approach to investigating the CSR behaviors of firms in China. The findings may serve as reference for managerial- and supervisor-level leaders or corporate stakeholders in understanding the effects of CSR on corporate behavior, particularly the behaviors of industries or firms that typically refuse to undertake CSR.

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