Corporate social responsibility disclosure and firm value: a signaling theory perspective

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Received 23 February 2024
Revised 19 August 2024
28 November 2024
23 March 2025
Accepted 24 March 2025

Abstract

Purpose – This study investigates the impact of corporate social responsibility (CSR) disclosure on firm value and the moderating roles of largely under-examined contextual factors such as mandatory disclosure policy, industry profile and local institutional environment.

Design/methodology/approach – Panel data techniques are used to investigate the association between CSR disclosure and firm value as well as the roles of such intervening factors.

Findings – The study finds that CSR disclosure is positively related to firm value, indicating the financial benefit of CSR disclosure. Moreover, the positive relationship is more pronounced in the post-mandatory CSRD period, non-high-profile industries and more favorable institutional environment.

Practical implications – The study provides corporate managers with more insight into the beneficial effects of CSR disclosure and the contingency factors influencing the CSR disclosure–firm value relationship.

Originality/value – This study advances the extant knowledge of contingent effects on the market valuation of CSR reporting from a signaling theory perspective. Developing a theory to explain the relationship between CSR disclosure and firm value, this study adds arguments and empirical evidence to demonstrate that the effectiveness of CSR disclosure as a signal depends on the signaler, the receiver and the signaling environment.

Keywords Corporate social responsibility, Firm value, High-profile industry, Institutional environment, Mandatory CSR disclosure

Paper type Research paper

1. Introduction

Recent years have seen a proliferation of CSR disclosure with 98% of the largest firms across the globe disclosing CSR information in 2022, up from 91% in 2019 (IFAC, 2024). This growing popularity is due to the increasing stakeholder scrutiny of the social and environmental impacts of firms' operations. CSR disclosure could provide relevant information to stakeholders to evaluate firms' CSR activities. Particularly, CSR-related information is increasingly used by investors in their investment decision-making process (Liang and Cao, 2024); therefore, the value relevance of CSR disclosure has drawn an increasing interest of scholars over the past few years. Nonetheless, prior studies examining the relationship between CSR disclosure and firm value have produced inconsistent findings. For instance, while some studies report the value enhancing effect of CSR disclosure (Xu *et al.*, 2020; Khan *et al.*, 2021), other studies find that the relationship is negative or insignificant

JEL Classification — G30, G32, G34, M14

The author is grateful to the Editor (Associate Professor Hung Nguyen) and anonymous reviewers for their constructive comments on the manuscript. She would also like to thank the participants at the 35th Asian Finance Association Annual Conference for their comments. The author acknowledges the financial support from Foreign Trade University (Grant No. NTCS 2021-28). Any remaining errors are her own.

(Fahad and Busru, 2021; Wasiuzzaman *et al.*, 2023). Thus, whether CSR disclosure is financially beneficial or detrimental to firms still remains an open empirical question.

From a theoretical perspective, the divergent findings of the CSR disclosure–firm value relationship can be explained by different theories. According to signaling theory (Akerlof, 1970) and stakeholder theory (Freeman, 1984), CSR disclosure is positively associated with firm value because disclosing credible CSR information can reduce information asymmetry between a firm and its stakeholder, and improve the firm's internal governance, thereby lowering the rate of returns required by investors and enhancing the expected future cash flows. However, agency theory (Jensen and Meckling, 1976) suggests the value-destroying effect of CSR disclosure due to severe information asymmetry and the erosion of firm reputation, which are consequences of opportunistic use of CSR disclosure by corporate managers to pursue their personal interests and/or advance their own personal agendas (Lee, 2017). In addition, legitimacy theory (Cho and Patten, 2007) indicates that CSR disclosure may not be value relevant. This is because CSR disclosure may not reveal valuable information but simply is used as a strategic response to social and political pressures. This study is implemented to understand which of these theoretical predictions dominates in a new yet under-explored research context.

To shed more light on this topic, taking the signaling theory perspective, this study investigates how the CSR disclosure–firm value relationship is conditional on important yet understudied contextual variables such as the mandate of CSR disclosure, industry membership and local business environment. Empirically, this study uses unique, hand-collected CSR disclosure data on a sample of Vietnamese listed firms from 2010 to 2020.

This study contributes to the extant literature in several ways. First, it advances the extant knowledge of contingent effects on the market valuation of CSR reporting from a signaling theory perspective. Findings from this study support the argument that the effectiveness of CSR disclosure as a signal depends on the signaler, the receiver and the signaling environment. As a result, investors are likely to respond more favorably to CSR disclosure in the post-mandate years, CSR disclosure from firms operating in non-high-profile industries and in regions with better institutional environments. Second, as Ali *et al.* (2024) and Prakash and Hawaldar (2024) demonstrate that financial outcomes of CSR disclosure significantly differ across countries and call for new context-specific research on this theme, this study responds to their call and thus enriches the extant literature by offering fresh empirical evidence from Vietnam, where little is known about CSR disclosure and its consequences despite increasing international attention to the market. Although Linh *et al.* (2022) and Canh *et al.* (2022) examine financial outcomes of CSR disclosure, their findings are inconsistent with each other, and none of them explore the contextual factors influencing this relationship. This study helps reconcile the mixed results by showing that the relationship between CSR disclosure and firm value is context dependent.

2. Literaturer review and hypothesis development

2.1 CSR disclosure and firm value

CSR disclosure can be understood as the provision of information about the social and environmental impacts of a firm's economic activities to particular interest groups within society and to society at large. A large amount of empirical studies have been conducted to understand whether CSR disclosure influences firm value, which is extensively proxied by Tobin's Q in prior research (Cremers and Ferrell, 2014). Tobin's Q is a ratio of the market value of the firm to the replacement cost of the firm's assets (Chung and Pruitt, 1994). The numerator of Tobin's Q is the sum of the market value of equity and the book value of liabilities. The denominator is measured by the book value of the firm's assets. Accordingly, Tobin's Q not only measures firm value but also reflects investors' judgements on how effectively a firm employs its scarce resources to create its value.

Using a sample of listed Chinese firms between 2008 and 2015, Xu *et al.* (2020) show that firm value increases when a firm issues CSR reports. Focusing on one specific aspect of CSR disclosure, that is, green disclosure, Khan *et al.* (2021) examined its valuation effect in listed banks in Bangladesh from 2008 to 2014. They conclude that green disclosure enhances firm value of banks. A similar finding is documented in Italy when Rossi and Harjoto (2020) show that CSR disclosure is positively related to firm value. However, Kahloul *et al.* (2022) examined the financial effects of CSR reporting in French listed firms during the period 2008–2015 and showed an insignificant relationship between CSR reporting and firm value. In addition, Fahad and Busru (2021) employed a sample of Indian listed firms between 2007 and 2016 to explore the valuation implications of CSR disclosure. They found that CSR disclosure negatively impacts firm value. Employing international data of energy firms from 2009 to 2016 in their analysis, Wasiuzzaman *et al.* (2023) show that such disclosure causes a negative impact on corporate profitability.

Given these mixed findings, this study attempts to examine how and when CSR disclosure matters for firm value. In doing so, it relies on signaling and stakeholder theories to argue that CSR disclosure improves firm value by increasing the market value of equity, which is a component in the calculation of Tobin's Q. Prior research commonly uses a discounted cash flow model with the expected future cash flows in the numerator and the required rate of returns in the denominator to estimate the market value of equity (Francis *et al.*, 2000). Hence, this study maintains that CSR disclosure directly affects a firm's equity valuation by driving the numerator up and the denominator down.

2.2 Hypothesis development

First, stakeholder theory maintains that CSR disclosure reflects a firm's commitment to accountability and transparency for its stakeholder benefits. CSR-disclosing firms are incentivized to foster internal corporate governance to better serve their stakeholders' interests (Kim *et al.*, 2017). Effective internal governance mechanisms can mitigate agency problems between firms' managers and stakeholders, enable firms to strengthen stakeholder relations and encourage stakeholder engagement (Acharya *et al.*, 2011), which are important to boost firms' projected future cash flows (the numerator channel) due to enhanced productivity and improved profits (Tsang *et al.*, 2024).

Second, based on signaling theory, CSR disclosure may reduce the returns required by investors (the denominator channel) to hold stocks of CSR-disclosing firms (Dhaliwal *et al.*, 2011). In capital markets, information asymmetry between a firm and investors potentially raises the cost of capital (Easley and O'hara, 2004) because investors will require a higher rate of returns to compensate for a greater informational uncertainty borne by them. CSR disclosure, as noted by Su *et al.* (2016), may be a signal conveying information about a firm's unobservable attributes to its investors, and as such, it would reduce the information asymmetry between the firm's managers and its outside investors, and lower the required returns. The above arguments lead to the first hypothesis as follows:

H1. CSR disclosure is positively related to firm value.

Signaling theory also suggests that the effectiveness of a signal in reducing information asymmetry between a signaler and a receiver depends upon the signaler's behavior, the receiver's interpretation of the signal and the signaling environment (Connelly *et al.*, 2011). Therefore, this study proceeds to argue for the moderating role of the CSR reporting mandate, industrial background and institutional environment, given that these three factors potentially affect the signaler's and the receiver's behavior as well as the signaling environment.

Recently, an increasing number of economies have implemented mandatory CSR disclosure regulation (Krueger *et al.*, 2024). For example, in the European Union (EU), the Directive 2014/95/EU requires listed, large EU firms to disclose their non-financial information beginning from fiscal year 2017 onward (Fiechter *et al.*, 2022). The Indian Companies Act Section 135 has obliged Indian central public sector enterprises to provide CSR reporting since 2013 (Taneja *et al.*, 2022). In China, the Shanghai and Shenzhen Stock Exchanges have mandated a subset of listed Chinese firms to disclose CSR information since

2008 (Wang *et al.*, 2018). Drawing on signaling theory, this study expects that the positive relationship between CSR disclosure and firm value will become stronger following the mandatory adoption of CSR reporting. This is because the CSR disclosure mandate could positively influence both the signaler and the receiver's behavior in a manner that mitigates the information asymmetry between them to a greater extent relative to voluntary CSR disclosure. Specifically, the primary objective of a CSR reporting mandate is to improve information transparency by increasing disclosure quantity and disclosure quality (Christensen *et al.*, 2021). Consistently, Liu and Tian (2021) show that CSR-disclosing firms (as signalers) tend to increase the volume and quality of CSR information upon the adoption of mandatory CSR disclosure because non-compliance can result in negative consequences. Turning to investors (as receivers), mandated CSR disclosure can better facilitate investors' interpretation of CSR reports given that CSR information should be presented in accordance with the reporting regulations. Compared to voluntary CSR disclosure, mandatory CSR disclosure can reduce information asymmetry to a greater extent due to better provision of information and interpretation of information with more accuracy, thereby leading to a greater reduction in the required rate of returns. Thus, the following hypothesis is proposed:

H2. The positive relationship between CSR disclosure and firm value is more pronounced in the post-mandate period than in the pre-mandate period.

Prior research (Patten, 2002) indicates that industry profile is a significant factor to consider when analyzing CSR consequences. This study argues that signalers' industrial backgrounds can affect investors' perceptions of disclosure credibility, and as such, the value relevance of CSR disclosure is hypothesized to be contingent on CSR-disclosing firms' industry attributes. Following the extant literature (Chan *et al.*, 2014), this study classifies the sampled firms into two groups: high-profile vs non-high-profile industries. High-profile industries refer to those with consumer visibility, a high degree of political risk or concentrated intense competition.

Many researchers assert that there is a significant variation in CSR disclosure across industries (Gamerschlag *et al.*, 2011), and that firms operating in high-profile industries have a higher propensity to disclose CSR information to manage their CSR image as well as maintain their legitimacy (Chan *et al.*, 2014), while such disclosure may be decoupled from actual CSR performance. Du (2015) holds that controversial firms such as tobacco and metal smelting firms appear to be more promoting their eco-friendly images than reporting meaningful information about their social and environmental footprint. CSR disclosure may be perceived as having low credibility if firms belong to high-profile industries (Patten, 2002), thereby weakening the effect of CSR reporting in reducing information asymmetry. As information asymmetry following CSR disclosure is expected to be still higher in firms operating in high-profile industries, the required rate of returns by investors to invest in these firms should be higher relative to non-high-profile firms. This leads to the next prediction as follows:

H3. The positive relationship between CSR disclosure and firm value is more pronounced in non-high-profile industries than in high-profile industries.

Under signaling theory, both the signaler's and the receiver's behavior can be affected by the signaling environment. Institutional quality is a relevant feature of the signaling environment, which has the potential to impact the strength of CSR disclosure as a signal and the extent of information asymmetry between CSR-disclosing firms and outside investors.

In this study, the value enhancement of CSR disclosure is expected to be greater in regions with stronger local institutions due to lower information asymmetry associated with a better institutional environment (Berglöf and Pajuste, 2005). On the signaler's side, Cahan *et al.* (2016) suggest that the quantity and quality of CSR disclosure should be higher in order to mitigate litigation risk if the disclosing firm operates in a stronger institutional environment, rendering CSR reporting more informative. On the receiver's side, CSR disclosure in institutionally strong regions is less likely to be perceived as a form of window dressing, thereby reducing information asymmetry (Lin *et al.*, 2017). The resultant reduction in information asymmetry may lower the rate of returns that investors would require to invest in the disclosing firms and thus increase firm value. Based on the above arguments, the last hypothesis is stated as follows:

H4. The positive relationship between CSR disclosure and firm value is more pronounced for firms operating in a more favorable institutional environment.

3. Research methodology

3.1 Research context

Since 1986, Vietnam has been implementing economic reforms and has gained remarkable economic achievements. From being one of the world's poorest countries, Vietnam is now classified as a middle-income economy, whose GDP per capita increased 3.6 times during the period 2002–2021 (WB, 2022a). Despite such economic progress, Vietnam has been faced with environmental degradation and social problems. For example, a recent report by the World Bank shows that Vietnam quadrupled its per capita emissions between 2000 and 2015 (WB, 2022b). In addition, the country was ranked the lowest among 180 countries in the Environmental Performance Index provided by Yale University (YCELP, 2024). Regarding social issues, food safety is a main concern for the public given that a series of food poisoning cases have been reported (Nguyen *et al.*, 2021). Another social issue that has been drawing considerable academic attention is gender discrimination. Women in Vietnam are still in an inferior position vis-à-vis men in terms of employment, development opportunities and social status. Such problems have resulted in great pressure from stakeholders on firms to demonstrate environmentally and socially responsible business practices. A 2022 KPMG survey showed that 80% of firms operating in Vietnam engage in certain CSR practices or plan to do so in the near future (KPMG, 2022). Furthermore, environmental and social sustainability had been mainstreamed in Vietnam's 2011–2020 Social and Economic Development Strategy (SEDS) and have been further integrated into the country's 2021–2030 SEDS. As a result, CSR disclosure has recently been emphasized in Vietnam. Effective from 1 January 2016, the Circular 155/2015/TT-BTC issued by the Ministry of Finance requires listed firms to report environmental and social impacts of their business operations. Although such a regulation plays an important role in increasing CSR reporting, empirical evidence on the financial implications of CSR disclosure is still rare in Vietnam.

3.2 Research sample

A sample of non-financial firms publicly listed on the Ho Chi Minh Stock Exchange (HOSE) during the period 2010–2020 is utilized to explore the relationship between CSR disclosure and firm value, considering the moderating roles of contextual factors mentioned above. The focus on listed firms stems from the fact that these firms are required to comply with the exchange's listing rules and can be considered as references for other firms in reporting CSR information. Moreover, the market capitalization of firms listed on HOSE was approximately USD 254.83 billion by the end of 2021, which is equivalent to 92.77% of the country's GDP in 2020 (MOF, 2022). The listing regulations of HOSE are stricter than those of the Hanoi Stock Exchange, based on Decree 60/2015/ND-CP, such as chapter capital of a firm, financial performance and information disclosure. Consequently, firms listed on HOSE may have more resources to invest in CSR initiatives and disclose more information about their CSR activities than other firms. The research sample excludes financial firms because of their unique accounting requirements, which are substantially different from those of non-financial firms.

Previous research on CSR disclosure has relied on Bloomberg (e.g. Fahad and Busru, 2021) to obtain CSR disclosure data. Nonetheless, this database does not cover Vietnamese firms' CSR information. Therefore, this study follows prior research (Siueia *et al.*, 2019) and applies content analysis to obtain information on CSR disclosure from corporate annual reports and sustainability reports. Financial statement data and trading data of firms are collected from the FiinPro database, which is widely employed in recent research (e.g. Nguyen and Nguyen, 2024). Data on provincial institutional environment is obtained from the Provincial Competitiveness Index (PCI) survey, which is funded by the United States Agency for International Development and administered by the Vietnam Chamber of Commerce and Industry (Malesky *et al.*, 2020). After merging these data sources and deleting missing values, the final sample includes 2,477 observations.

3.3 Measurement of variables

3.3.1 Firm value (Q). Following prior studies (Cremers and Ferrell, 2014), Tobin's Q is employed to measure firm value. This measure of firm value is forward-looking and less influenced by accounting practices and earnings manipulation than accounting-based measures of firm performance (Bennouri *et al.*, 2018). Previous research has also utilized Tobin's Q as a proxy for market valuation of Vietnamese firms (Kubo and Phan, 2019).

3.3.2 CSR disclosure (CSRD). This study follows previous CSR studies (Siueia *et al.*, 2019) and conducts content analysis of the annual reports of the sampled firms to measure CSR disclosure. Corporate annual reports are commonly viewed by different groups of users to be a main source of firms' CSR information, which has a high level of credibility (Chan *et al.*, 2014). Accordingly, the four categories of CSRD are taken into account to construct an overall CSRD score, including environment, human resources, products and consumers, and community involvement (see Supplementary Table 1).

A score of 1 is assigned for a CSRD item that is presented in the annual reports and 0 otherwise. This scoring approach is widely used in CSRD studies (Siueia *et al.*, 2019). The total scores of each firm are then added up, not weighted. The maximum score for environment (4 items), employees (6 items), products (4 items) and community involvement (6 items) is 4, 6, 4 and 6, respectively. The total maximum score (CSRD) a firm can gain in a particular year is 20.

3.3.3 Moderating variables. Three moderating factors are considered in this study. First, to examine the moderating role of the CSR disclosure mandate, the sample is partitioned into two sub-samples: one covers the pre-regulation years while another one covers the post-regulation years. Given that in 2015, the Ministry of Finance issued Circular 155/2015/TT-BTC, which mandates CSR disclosure by Vietnamese listed firms, the pre-regulation sub-period in this study is from 2010 to 2015, and the post-regulation one is from 2016 to 2020.

Second, to investigate the moderating role of firms' industry membership, the sample is split into two sub-samples based on the profile of the industry in which firms are operating in. Following Chan *et al.* (2014), high-profile firms are those operating in the material sector; otherwise, they are classified as non-high-profile firms.

Third, to assess the moderating role of the local institutional environment, the sample is also divided into two sub-samples based on the PCI score. Provinces with PCI scores higher than a nation-wide average level in each year are classified as the ones with more favorable institutional environment and vice versa.

3.3.4 Control variables. This study controls for a range of firm-specific characteristics to analyze the relationship between CSR disclosure and firm value, based on an extensive review of the relevant literature (Nguyen *et al.*, 2022). The control variables are firm size (SIZE), financial leverage (LEV), growth (GRO), profitability (ROA), firm risk (RISK) and firm age (AGE). The effect of size on firm value remains ambiguous in previous studies. While Elamer *et al.* (2024) suggest that larger firms are more valued by their investors, Tsang *et al.* (2024) hold that larger firms suffer from a reduction in firm value as they become more diversified. Likewise, there are opposing views on the role of financial leverage in affecting firm value. This is because leverage is likely to reduce the overinvestment problems, but it may also cause the underinvestment problems to become more severe (Fosu *et al.*, 2016). For firm age, Aouadi and Marsat (2018) argue that it can be either positively or negatively related to firm value. On the one hand, greater experience and slack resources possessed by older firms may enable them to enhance firm value. On the other hand, older firms tend to be less adaptable to changes, which in turn may impede these firms' ability to generate value. More profitable firms and growing firms are prone to have better valuations (Tsang *et al.*, 2024). Firms with more volatile stock performance may have to forgo potentially profitable projects due to limited access to finance, thereby reducing firm value (Nguyen *et al.*, 2022). Industry and year dummies are included to account for possible variations across industries and years. Detailed definitions of these variables are provided (see Supplementary Appendix 1).

3.4 Model specification

The following model is used to investigate the valuation impact of CSR disclosure in H1:

$$Q_{it} = \alpha_0 + \alpha_1 CSRD_{it} + \alpha_2 RISK_{it} + \alpha_3 SIZE_{it} + \alpha_4 LEV_{it} + \alpha_5 ROA_{it} + \alpha_6 GRO_{it} + \alpha_7 AGE_{it} + \alpha_8 Year\ Dummies + \alpha_9\ Industry\ Dummies + \epsilon_{it} \tag{1}$$

Where the variables are explained in Appendix 1. ϵ_{it} is the error term.

If α_1 is positive and statistically significant, H1 is supported. Otherwise, H1 is rejected.

To test hypotheses H2-H4, the research sample is divided into pairs of sub-groups based on the CSR disclosure mandate, industry profile and local institutional quality, respectively. Then model (1) is rerun for each pair of sub-groups and the resultant coefficients of CSRD across sub-groups are compared, following Zellner (1962). If the CSRD coefficients in each pair are statistically different, H2–H4 are supported. Otherwise, these hypotheses are rejected. This econometric technique is commonly used in recent studies in the field when conducting moderating analysis (Tsang *et al.*, 2021).

4. Results and discussion

4.1 Univariate analysis

The descriptive statistics of variables used in this study are reported in Table 2. The average Tobin's Q is 0.765, which is comparable to Kubo and Phan (2019). The average CSRD score is 10.5. Firm risk has a mean value of 0.408. The sample's average size is 14.23, and its average leverage ratio is 0.499. The average profitability (ROA) is 0.083. The mean values of firm growth and firm age are 0.145 and 15.186, respectively.

Pairwise correlations among variables of interest are presented (see Supplementary Table 3). CSRD is positively correlated to firm value (Q), which is in line with H1. The correlation coefficients of CSRD and control variables are well below the threshold value of 0.8 (Gujarati, 2003). Therefore, this research data are unlikely to face the problem of multicollinearity.

Table 2. Descriptive statistics

Variable	*N*	Mean	STD	Min	Max
Q	2,477	0.765	0.464	0.200	2.368
CSRD	2,477	10.582	3.572	2.000	19.000
RISK	2,477	0.408	0.113	0.202	0.659
SIZE	2,477	14.230	1.264	12.118	17.201
LEV	2,477	0.499	0.205	0.088	0.845
ROA	2,477	0.083	0.081	−0.041	0.313
GRO	2,477	0.145	0.440	−0.582	1.718
AGE	2,477	15.186	7.806	1.000	61.000

Source(s): Author's own work

Difference tests for means and medians of firm value between high and low CSRD subsamples are presented (see Supplementary Table 4). Firm value (Q) is shown to be significantly higher for firms with a higher CSRD score than for those with a lower CSRD score. Hence, H1 is preliminarily supported. However, the univariate test does not consider the intervening effects of other firm characteristics. Multivariate analysis is therefore implemented in the next section.

4.2 Multivariate analysis

Table 5 shows the results of regressing firm value on CSR disclosure and control variables, with heteroskedasticity robust standard errors clustered at the firm level (Petersen, 2009). Column 1 examines the relationship between CSRD and firm value and demonstrates a positive and significant coefficient of CSRD ($\alpha_1 = 0.0119$, $p < 0.01$). This indicates that a higher level of CSRD is associated with better firm value, consistent with signaling theory of CSR disclosure. Thus, H1 is supported. This result is in line with a number of previous empirical studies in foreign markets (Xu *et al.*, 2020; Khan *et al.*, 2021) and a related study by Linh *et al.* (2022) in Vietnam. Nonetheless, this finding contrasts sharply with the one by Canh *et al.* (2022), which is possibly due to the fact that the current study covers a more recent time after the adoption of mandatory CSR disclosure.

Columns 2–3 present regression results utilizing the data in pre-regulation and post-regulation sub-periods. Although both columns show positive and significant coefficients of the CSRD variable, the coefficient in Column 3 ($\alpha_1 = 0.0187$, $p < 0.01$) is greater and more statistically significant than the one in Column 2 ($\alpha_1 = 0.0044$, $p < 0.1$). Relying on Zellner (1962), this study also implements seemingly unrelated estimation (SUEST) by applying the Stata “suest” command to compare the CSRD coefficients across sub-period groups. The SUEST test reports that the difference in CSRD coefficient estimates is statistically significant ($\chi^2 = 4.16$, $p < 0.05$). This result implies that the value-enhancing effect of CSR disclosure is more pronounced after the issuance of mandatory CSR disclosure regulations, supporting the prediction of H2. This is also in line with previous evidence on the positive outcomes of mandatory CSR reporting (Krueger *et al.*, 2024).

Columns 4–5 test the moderating role of firms’ industry membership. While Column 4 shows a positive and significant coefficient of the CSRD variable ($\alpha1 = 0.0178$, $p < 0.01$), the value of this coefficient in Column 5 is not significant. The insignificant impact of CSR disclosure on firm value in high-profile firms aligns with the legitimacy theory and is supported by Kahloul *et al.* (2022). This result is consistent with H3 and suggests that the CSR disclosure–firm value relationship is moderated by industry profile.

The last two columns of Table 5 test whether the local institutional environment intervenes in the relationship between CSR disclosure and firm value. Column 6 presents regression results for a group of firms operating in a less favorable institutional environment, while Column 7 reports results for those operating in a more favorable institutional environment. Given that the coefficient estimates of CSRD in both columns are positive and statistically significant, the SUEST test is used again to determine whether such coefficients of CSRD are significantly different. The SUEST test result indicates that the CSRD coefficients are not statistically different between the two subgroups. Thus, hypothesis H4 is not supported.

4.3 Results of robustness tests

As can be seen from the CSRD measurement, there are four dimensions of CSRD used in the current study. They are environmental, employee, community and product disclosures. Valuation impacts of these components are tested by rerunning Model 1 and using each component as an independent variable. Generally speaking, the results (untabulated) are qualitatively consistent with the ones reported in Table 5. These findings provide further support for hypotheses H1, H2 and H3.

Table 5. CSR–firm value relationship

Variables	(1) Full sample Q	(2) Pre-regulation Q	(3) Post-regulation Q	(4) No-high-profile Q	(5) High-profile Q	(6) Low-PCI Q	(7) High-PCI Q
CSRD	0.0119***	0.0044*	0.0187***	0.0178***	−0.0103	0.0119***	0.0174***
	(0.003)	(0.003)	(0.005)	(0.003)	(0.014)	(0.004)	(0.005)
RISK	−0.0909	0.0692	0.0492	0.0313	−0.7889	0.0154	−0.2494
	(0.123)	(0.118)	(0.194)	(0.123)	(0.551)	(0.165)	(0.172)
SIZE	0.0919***	0.0878***	0.1057***	0.1134***	−0.0030	0.0833***	0.1071***
	(0.015)	(0.013)	(0.023)	(0.016)	(0.028)	(0.020)	(0.027)
LEV	−0.1131*	−0.0437	−0.2106**	−0.1593**	0.2153	−0.0979	−0.2445**
	(0.066)	(0.069)	(0.093)	(0.079)	(0.191)	(0.087)	(0.120)
ROA	2.6224***	1.2745***	3.8950***	3.0822***	0.8825**	2.8109***	2.6045***
	(0.281)	(0.260)	(0.384)	(0.356)	(0.443)	(0.342)	(0.532)
GRO	−0.0006	−0.0006	−0.0030	−0.0013	0.0821	−0.0026	−0.0051
	(0.002)	(0.001)	(0.010)	(0.002)	(0.091)	(0.002)	(0.006)
AGE	−0.1425***	−0.0414*	−0.2500***	−0.1157***	−0.2586	−0.1154**	−0.0873
	(0.047)	(0.025)	(0.090)	(0.038)	(0.176)	(0.057)	(0.060)
Constant	−0.6661*	−0.7517***	−0.4438	−1.1056***	1.2819	−0.6653	−1.0227**
	(0.342)	(0.235)	(0.606)	(0.303)	(1.160)	(0.445)	(0.493)
N	2,477	1,070	1,407	2,026	451	1,691	786
R-squared	0.295	0.307	0.330	0.361	0.130	0.239	0.302
Year and industry controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note(s): *, ** and *** denote significance at the 1, 5 and 10% levels, respectively. Robust standard errors in parentheses
Source(s): Author's own work

Next, industry-adjusted Tobin's Q is utilized as a different proxy for firm value, following Jo and Harjoto (2011). These findings further confirm that CSRD is positively related to firm value (see Supplementary Table 6). Moreover, this positive association is more pronounced in the post-mandatory CSR disclosure period and in non-high-profile industries.

Lastly, prior literature suggests that endogeneity is a potential issue in studies on CSR disclosure (Khan *et al.*, 2021). To address a concern over the endogeneity, this study uses an instrumental variable approach (Wooldridge, 2010). Specifically, based on previous studies (Nguyen *et al.*, 2019), the CSRD industry average is employed as an appropriate instrument because it is known to satisfy both the relevance and exclusion requirements for an instrumental variable. Table 7 presents results using 2SLS regression, which are consistent with the findings reported above. Interestingly, this table provides evidence that the positive relationship between CSRD and firm value is more pronounced for firms located in provinces with a more favorable institutional environment, supporting hypothesis H4. This result also reinforces empirical evidence that the presence of proper institutions is important in boosting the financial benefits of CSR disclosure (Lin *et al.*, 2017).

5. Discussion and conclusion

Despite the accelerating interest in CSR disclosure from both scholars and corporate managers, the extant literature still remains controversial regarding the financial implications of CSR disclosure. In order to provide more insight into the inconclusive CSR disclosure–firm value relationship, this study examines the influence of CSR disclosure on firm value in the Vietnamese stock market. Moreover, it also investigates whether specific contextual factors such as mandatory CSR regulations, industry membership and local institutional environment moderate such relationships. The research findings show that CSR disclosure is positively related to firm value, suggesting that CSR disclosure published in firms' annual reports and stand-alone sustainability reports is informative for investors in evaluating firm value. Further analyses indicate that the role of CSR disclosure in enhancing firm value is stronger in the post mandatory CSR reporting, in non-high-profile industries and in locations with better institutional quality.

This study advances the extant theories related to CSR disclosure by relying on signaling theory to articulate the relationship between CSR disclosure and firm value and heterogeneity in value relevance of CSR disclosure. Previous studies on CSR disclosure are mainly based on agency theory to justify the negative association (Fahad and Busru, 2021) and stakeholder theory to explain the positive association between CSR disclosure and firm value (Khan *et al.*, 2021). The current study supplements this research strand by elaborating on the critical signaling role that CSR disclosure plays in reducing information asymmetry between disclosing firms and outsiders and thus lowering the required rate of returns and increasing firm value. More importantly, it extends signaling theory into this research stream by suggesting that application of signaling theory in CSR disclosure research should consider receivers' perceptions of CSR disclosure in determining the effectiveness of the signal in mitigating information asymmetry, besides attending to signalers' behavior.

These empirical findings have important practical implications. CSR disclosure deserves corporate strategic considerations as its potential contribution to value enhancement and firms' prosperity. To amplify the positive influence of CSR on firm value, corporate managers should well understand the positive moderating roles of specific contextual characteristics. This study urges managers to take a proactive approach in complying with CSR disclosure regulations in their efforts to resolve information asymmetry given the stronger financial payoff of doing so. Also, firms operating in non-high-profile industries and in regions with better local institutional quality are encouraged to take advantage of their industry legitimacy as well as enabling institutional conditions to magnify the positive outcome of CSR reporting. For investors who are uncertain about the valuation implications of CSR information, these findings inform them of the value-relevance of CSR disclosure. For policy makers, this study proves the importance of providing

Table 7. CSRD–firm value relationship using 2SLS

Variables	(1) Full sample Q	(2) Pre-regulation Q	(3) Post-regulation Q	(4) Non-high profile Q	(5) High-profile Q	(6) Low-PCI Q	(7) High-PCI Q
CSRD	0.1020**	0.0049	0.0475**	0.1109**	−0.0113	0.0186	0.0421**
	(0.043)	(0.009)	(0.023)	(0.046)	(0.012)	(0.024)	(0.019)
RISK	0.1911	0.0785	0.1501	0.3035*	−0.7936	0.0694	−0.2906
	(0.192)	(0.119)	(0.207)	(0.169)	(0.532)	(0.172)	(0.186)
SIZE	0.0396	0.0876***	0.0929***	0.0580**	−0.0025	0.0805***	0.0883***
	(0.024)	(0.016)	(0.026)	(0.030)	(0.028)	(0.023)	(0.029)
LEV	−0.0665	−0.0418	−0.2127**	−0.1350	0.2125	−0.0894	−0.1236
	(0.083)	(0.072)	(0.093)	(0.093)	(0.183)	(0.084)	(0.122)
ROA	2.4290***	1.2794***	3.7792***	2.9200***	0.8866**	2.6631***	2.4175***
	(0.311)	(0.263)	(0.398)	(0.401)	(0.441)	(0.338)	(0.503)
GRO	−0.0024	−0.0006	−0.0005	−0.0029	0.0821	−0.0005	−0.0006
	(0.002)	(0.001)	(0.010)	(0.002)	(0.089)	(0.002)	(0.005)
AGE	−0.1111**	−0.0412*	−0.2679***	−0.1077***	−0.2600	−0.1552**	−0.1117*
	(0.045)	(0.025)	(0.094)	(0.035)	(0.171)	(0.064)	(0.063)
Constant	−0.5961	−0.5731**	−0.0892	−1.0551***	2.1770	0.0609	−0.4509
	(0.508)	(0.227)	(0.668)	(0.374)	(1.477)	(0.565)	(0.470)
Adjusted *R*-squared	0.065	0.295	0.309	0.123	0.098	0.266	0.309
Year and industry controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note(s): *, ** and *** denote significance at the 1, 5 and 10% levels, respectively. Robust standard errors in parentheses
Source(s): Author's own work

regulations and guidance on CSR disclosure and improving the institutional environment. To increase effective enforcement of mandatory CSR disclosure, a fully compliant approach for CSR regulations may be considered to replace the currently applied approach known as the comply-or-explain basis. Also, the provision of standardized disclosure standards can better assist firms in preparing CSR reports with higher levels of credibility and comparability.

In spite of the above-mentioned significance, this study has several limitations that may serve as potential avenues for future studies. First, its findings are based on publicly listed Vietnamese firms. Due to notable variations in resource constraints and stakeholder scrutiny between publicly owned firms and privately held peers, the generalization of these results to the latter may not be guaranteed. Future research could investigate this topic focusing on a sample of privately held Vietnamese firms to validate the research findings. Second, although it determines that the CSR disclosure–firm value relationship is contingent on mandatory CSR regulations, industry membership and institutional environment, there may be other moderating factors which can exert influence on this association yet have been not explored in the current study. Future research could potentially seek to answer whether certain governance mechanisms and product market features can intervene in the consequences of CSR disclosure. Finally, while this study carefully controls for heteroskedasticity and endogeneity concerns, it does not rule out the possibility that other econometric problems can bias the reported results. Future research should employ other econometric techniques to further check the robustness of these empirical findings.

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Supplementary material

The supplementary material for this article can be found online.

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