Mandatory CSR disclosure, institutional ownership and firm value: Evidence from China

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Abstract
This study aims to contribute to the relevant accounting, corporate governance, and corporate social responsibility (CSR) literature by examining the value relevance of mandatory CSR disclosures in China. Using a difference-in-differences (DID) research design and a sample based on propensity score matching (PSM) over the period from 2003 to 2020, our findings suggest that mandatory CSR disclosures are negatively associated with firm’s values. We also find that firms with a high level of institutional ownership and leverage experience a relatively lower drop in firms’ values as a result of the mandatory CSR disclosures. These findings remain robust to alternative sampling design, use of market to book value as an alternative measure of firms’ market-based performance, and a parallel test to validate our DID analysis. Our findings have useful implications for managers, regulators, policy makers and other stakeholders.

KeyWords
CSR, DID, disclosure, firm performance, PSM

1 | INTRODUCTION

Environmental, social, governance (ESG) and corporate sustainability disclosure and firms’ performance has attracted much attention, especially in the past few decades from various stakeholders such as, investors, customers, regulators and the general public (see e.g., Adhikari, 2016; Hsu & Chen, 2020; La Rosa et al., 2018; Manchiraju & Rajgopal, 2017; Shahab et al., 2020). Firms’ focus on green initiatives and engagement with activities to improve environmental performance are aimed at not only ensuring compliance with regulatory requirements and laws but also finding ways to serving shareholders’ interests and meeting other stakeholders’ expectations (Lin, 2010).

There have been several initiatives by regulators and standard setters in different jurisdictions to develop and introduce quality sustainability standards to provide useful information to investors and other stakeholders on firms’ ESG efforts. For instance, in the backdrop of the United Kingdom hosted 26th, United Nations Climate Change Conference of the parties (COP26) in Glasgow on 31 October to 13 November, the International Financial Reporting Standards (IFRS) Foundation trustees announced the formation of the International Sustainability Standards Board (ISSB) with a view to bringing globally comparable sustainability reports to the financial markets (3rd November 2021).1 Similarly, the Securities Exchange Commission (SEC), proposed two new, disclosure requirement proposals for investment funds that incorporate ESG factors.2 In the emerging markets context, in China, Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE), released a notice in
December 2008, requiring a subset of firms to publish corporate social responsibility (CSR) reports together with their annual reports (see e.g., Christensen et al., 2021; Ioannou & Serafeim, 2017). 3

Theoretically, there are two opposing views with regards to firms’ environmental, social and governance efforts, their related disclosure and impact on firms’ performance. On the one hand, according to stakeholders’ theory (Freeman, 1984), firms’ investment in CSR may be useful for businesses that can potentially mitigate agency problems, reduce information asymmetry, and improve performance by signalling earnings quality and portraying firms’ good corporate citizenship (Kim et al., 2012; Wang et al., 2018). On the other hand, in line with agency theory perspective (Jensen & Meckling, 1976), managers typically have increased motivation to participate in environmental and sustainability initiatives in order to pursue their private benefits, such as personal reputation and entrenchment (Barnea & Rubin, 2010; Cespa & Cestone, 2007; Friedman, 1970). Similarly, discretionary spending on CSR activities can also increase CSR firms’ costs, resulting in lower firm performance (Barnett & Salomon, 2012).

Despite the increased interest and the strategic role of CSR in potentially influencing firm performance, empirical evidence on the link between CSR and firm performance has largely been mixed and inconclusive with studies reporting positive (e.g., Albuquerque et al., 2019), negative (e.g., Buchanan et al., 2018) or no association (e.g., McWilliams & Siegel, 2000) with firm performance. Unlike prior studies that mostly examine valuation effects of voluntary CSR disclosures, this study investigates whether and how mandatory CSR disclosure impacts corporate value in a relatively unique Chinese context, where CSR disclosure is mandatory for certain subset of firms. 4 Consistent with the resource-based theory (Barney, 1991; Branco & Rodrigues, 2006), CSR can be regarded as a valuable strategic resource that differentiates CSR firms from non-CSR firms, enabling CSR firms to gain competitive advantage over their counterparts and thus positively influencing performance (e.g., Flammer, 2015; Hart, 1995; Kapstein, 2001; Russo & Fouts, 1997). However, given the discretionary nature of the CSR spending, firms’ CSR activities can also be viewed as waste of resources that do not necessarily result in improved firms’ performance (Barney & Rubin, 2010).

In addition, compliance costs of mandatory CSR disclosures may outweigh the incremental benefits of catering to the needs of stakeholders, thus negatively affecting firms’ performance. We therefore argue that mandatory CSR disclosures can have two opposing influences on firms’ values, a value-enhancing effect and a value-reducing effect. Evaluating the impact of mandatory CSR disclosure regulation in a unique Chinese context is therefore an empirical question with useful theoretical and empirical implications.

More specifically, using a propensity score matching (PSM) sample of A-share listed firms on the SHSE and SZSE, this study employs a difference-in-differences (DID) research design to examine the value relevance of mandatory CSR disclosure in China. In December 2008, the SHSE and SZSE released a notice requiring a subset of firms to publish their CSR reports. We therefore consider 2003–2008 as the pre-mandatory CSR disclosure period, and the 2009–2020 as the post-mandatory CSR disclosure period. We begin our sample period in 2003 because data for one of our variables of interest, the institutional ownership, only became available from 2003 onwards. We classify firms that are required to disclose CSR reports as treatment firms. We then identify control firms by using the radius matching method to ensure control firms are comparable to the treatment firms. Our findings suggest that mandatory CSR disclosures are negatively associated with firms’ market-based performance.

Further, we examine how institutional ownership and leverage moderate the effect of mandated CSR disclosures on firms’ values. Institutional investors play an important role in monitoring management and limiting opportunistic managerial behaviour (Shleifer & Vishny, 1986). We argue that high institutional ownership may potentially reduce agency problems and mitigate any negative effect of mandatory CSR disclosure on firms’ values. Our findings indicate that institutional investors play a positive role in reducing the negative influence of compulsory CSR disclosures on firms’ values. Moreover, firms’ managers with adequate cash flows tend to invest more to increase the possibility of investing in negative net present value projects (e.g., Brown et al., 2006). As a result, firms with excessive cash flows may be incentivised to spend more on CSR to gain private benefits, that in turn, is likely to reduce firms’ values. However, high leverage could limit overinvestment due to managers facing restrictions and covenants on cash flows. Our empirical results indicate that high leverage firms have lower firm value reductions compared to low leverage firms, suggesting that leverage limits overinvestment.

We carry out further tests of robustness of our results. The interpretation of our main findings, however, remain unaltered. First, given the 2008 coincides with the financial crises period, for instance, we re-run regressions separately on samples that exclude year 2008 only, years 2007 and 2008, years 2008 and 2009, and years 2007, 2008 and 2009, respectively. Results for our main variables of interests, however, remain largely unaltered. Second, we employ an alternative, propensity score-matching (PSM)
design to generate control firms’ sample. Third, we use market to book values as alternative measure of firms’ market-based performance. Finally, we carry out a parallel test to validate our DID analysis.

This study contributes to relevant literature in several ways. First, unlike prior studies that mostly examine voluntary CSR disclosure in developed economies, this study focuses on exploring the value relevance of mandatory CSR disclosure in China. Our research context and set up is relatively unique as we focus on an emerging market where CSR disclosure became mandatory for certain subset of firms. Second, the existing literature failed to account for potential endogeneity concerns that may potentially cast some doubts on the interpretation of results in prior studies (Cui et al., 2018; Harjoto & Jo, 2011). Mandatory CSR disclosure in China could be viewed as a quasi-natural experiment, mitigating potential endogeneity issues and isolating the effects of CSR disclosures on firms’ values.

Our study builds on Chen et al. (2018) who find that mandatory CSR disclosure lowers firms’ accounting-based measure of performance as captured by return on assets (ROA) and return on equity (ROE). However, different from Chen et al. (2018) who study 2006–2011 period, the current study uses a more recent and relatively longer sample period and a more robust market-based measure of firms’ performance to overcome some of the inherent limitations of the accounting-based performance measures that are prone to manipulations and do not capture future opportunities (see e.g., Bharadwaj et al., 1999). Another recent paper by Wang et al. (2018) explores the impact of mandatory CSR reporting on earnings management and report that mandatory CSR firms decrease information asymmetry by improving the quality of financial information disclosure. Our study adds to this stream of literature by empirically testing whether the supposedly reduced information asymmetry and improved quality of information translates into increase in firms’ values.

Similarly, our study responds to some of the recent calls for the use of market-based proxies to capture firms’ performance in exploring the value relevance of CSR disclosures in different jurisdictions (see e.g., Gerged et al., 2021). Our study also relates to Manchiraju and Rajgopal (2017) who provide some preliminary evidence on the 2% compulsory CSR spending regulation in India. While Manchiraju and Rajgopal (2017) examine the immediate market reaction to the mandatory CSR spending by a sample of Indian firms, our study has a different focus in exploring the association between mandatory CSR disclosure and firms’ performance as captured by Tobin’s Q, in a Chinese market context. Finally, the current study also highlights the increased agency costs caused by mandatory CSR disclosure, and further imply that higher institutional ownership and debt level weakens the negative association between CSR and firms’ market-based performance.

The remainder of this paper is organised as follows. Section 2 discusses the institutional context, reviews the literature, and develops the research hypothesis. Section 3 describes the data sources and sample. Section 4 presents empirical findings and further robustness checks. Section 5 provides the conclusions and directions for future research.

2 | LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

There has been a steady growth in the Chinese economy over the past few decades, resulting in an increased interest in CSR and related legislation to encourage wider disclosure of CSR activities. While there was no direct reference to CSR in the 1994 company law, the National People’s Congress passed a new company law, which came into effect in 2006 specifically stating that companies must conform to social morality and business ethics and undertake social responsibility in the course of doing business. Similarly, the State-Owned Assets Supervision and Administration Commission of the State Council (SASAC) issued a guide in January 2008 on the implementation of social responsibility for state owned enterprises (see e.g., Lin, 2010). Further, SHSE and SZSE released a notice in December 2008, requiring a subset of firms to publish CSR reports. The SHSE mandates CSR reports from firms in its ‘Corporate Governance Index’ as well as from financial firms and firms with shares listed overseas and requires disclosure of aspects such as, efforts to improve social sustainability; efforts to improve environmental sustainability; and efforts to improve economic sustainability. The SZSE requires CSR reports from firms in its ‘Shenzhen 100 Index’. SZSE also issued the guidelines requiring relevant firms to disclose information related to the performance of employee protection, environment, product quality and community relationship; the performance insufficiency; improvement measures.

However, despite the consistent move towards a market-oriented system in China, the Chinese capital markets are not matured enough at the present time. As a consequence, audited annual statements are among the key priorities for listed firms for disclosing relevant information to investors and other stakeholders. In addition, CSR-related information is only considered essential for certain sectors and not all firms are required to disclose this information.

Although, the extant literature in this area explores the relationship between CSR and firms’ financial
performance however, existing empirical evidence is mixed and inclusive (Carini et al., 2017; Griffin & Mahon, 1997; Harjoto & Jo, 2011; Margolis et al., 2009; Timbate & Park, 2018). For instance, employing a sample of US firms, Harjoto and Jo (2011), conclude that CSR involvement is positively related to firm value. In contrast, McGuinness et al. (2017), report a negative association between CSR performance and lagged ROE. Similarly, Carini et al. (2017), find a positive relationship between CSR firms and financial performance, while Timbate and Park (2018), indicate an insignificant relationship between CSR performance and stock return. As a consequence, no consensus has emerged thus far whether CSR enhances or damages firm value.

One stream of literature postulates that firms’ investment and their disclosure of CSR mitigates agency costs as a result of improved relationship with stakeholders and reduced information asymmetry (e.g., Jones, 1995). Similarly, Cornell and Shapiro (1987), suggest that firm value is determined by the prices of both explicit and implicit claims. If firms fail to meet implicit claims, stakeholders may transform these implicit claims into explicit contracts, which are more costly. Furthermore, Harjoto and Laksmana (2018) indicate that investment in CSR may result in restraining managers to take on excessive risks. Moreover, Li et al. (2016) show that increased CEO power results in decreased CSR activities and enhances firm value.

More recently, Liu and Tian (2021) indicate that mandatory CSR disclosure reduces investment inefficiency due to increased monitoring by stakeholders. In addition, evidence in the extant literature also suggest that CSR disclosures serve to provide useful non-financial information that increases transparency and reduces information asymmetry (e.g., Cui et al., 2018; Dhaliwal et al., 2012; Ioannou & Serafeim, 2017; Jo & Kim, 2007; Kim et al., 2012). Fosu et al. (2016), for example, argue that firms with asymmetric information, face higher costs of capital, that in turn, negatively affects firms’ value. Similarly, Wang et al. (2018) provide some Chinese evidence suggesting that mandatory CSR disclosure policy leads to improved information flow among stakeholders that results in less earnings management. Therefore, evidence from the relevant literature suggest that CSR disclosure improves information environment by providing more information to stakeholders, resulting in limiting agency problems and increasing firm value.

Prior studies have also shown that CSR helps firms access more resources (e.g., Waddock & Graves, 1997), create intangibles by building useful networks with key stakeholders such as, customers, employees and suppliers, that are likely to positively affect shareholders’ wealth (Gardberg & Fombrun, 2006; Hillman & Keim, 2001). CSR engagement could also attract and retain high-quality employees (Turban & Greening, 1997, 2000), enhance brand image and reputation (Schneitz & Epstein, 2005; Servaes & Tamayo, 2013), increase job satisfaction and boost productivity (Edmans, 2012). Moreover, Ioannou and Serafeim (2015) show that CSR activities lead to more favourable analyst recommendations, while Cheng et al. (2014) find that improved CSR performance results in reduced financial constraints. As a consequence, firms’ CSR activities are believed to not only build an improved positive image for these firms but also help attract potential investors who value their environmental, social and governance initiatives positively, resulting in increased access to funds, reduced cost of capital and therefore positively affecting firms’ values.

However, there is another stream of literature that documents a negative relationship between CSR and firm value and posit that managers devote resources to CSR at the expense of reducing shareholders’ wealth (e.g., Friedman, 1970). Brown et al. (2006) find a positive association between board size and corporate cash donations, suggesting that corporate giving represents an agency cost whereby managers tend to give more money to charities that further their own interests and reputation. Likewise, Jensen (2001), critiques stakeholder theory by arguing that compared to a single objective of maximising shareholders’ wealth, pursuing multiple objectives may result in managerial confusion, conflict, and inefficiency. Similarly, it is not clear as to how to trade-off the demands of different stakeholders. For example, customers expect high-quality products and service, while employees require better working conditions, and committees push for more charities (Jensen, 2001). Moreover, Hemingway and Maclagan (2004) use Enron as a case example to show how firms may use CSR disclosure to portray a positive image that could help them cover up for their misbehaviour, as evident from Enron’s case, who were actively involved in CSR initiatives before the accounting scandal.

Similarly, there are theoretical arguments and empirical evidence suggesting that over investment in CSR activities may also result in reducing firms’ value (e.g., Buchanan et al., 2018). Barnea and Rubin (2010), for instance, find that with the increase of insider ownership, the CSR rating decreases, suggesting that CSR spending negatively affects firm value. In relation to CEO power and CSR, Jiraporn and Chintrakarn (2013) indicate that powerful CEOs would spend more in CSR activities, and argue that such spending gives support to the agency view point that managers could benefit from increased CSR spendings. Similarly, Hermalin and Weisbach (2012) posit that manager compensations are higher in firms with greater disclosure, implying that additional information disclosure may create agency problems and...
reduce firm value. They also argue that greater disclosure leads to greater monitoring, and under the pressure of increased monitoring, and in an attempt to prove their abilities, management tends to engage in activities that negatively affects value.

In the Chinese context there is some evidence that report a negative relationship between mandatory CSR disclosure and financial performance. For instance, Chen et al. (2018) reveal that firms’ turnover, profitability, and investments decreased, while operating expenses increased after the introduction of mandatory disclosure requirements in China. Similarly, Ni and Zhang (2019) find an inverse relationship between mandatory CSR disclosure and dividend pay-out, resulting in reduction in shareholders’ wealth. Makosa et al. (2020) find that investments decreased following the introduction of the mandate, suggesting that CSR engagement comes at the expense of stakeholders’ interests.

To summarise, the relevant literature from the value-enhancing perspective suggests that CSR engagement reduces information asymmetry and agency costs, increases productivity, and attracts more investors and resources. Mandatory CSR disclosure is therefore expected to be positively associated with firms’ value. In contrast, from a reducing value perspective, CSR activities consume valuable firm resources, reduce firm investments, and put increased pressure on firms. Further, the cost of compliance with mandatory CSR disclosures may outweigh the benefits accruing to other stakeholders. Therefore, mandatory CSR disclosure is likely to negatively influence firms’ market-based performance. The negative association between mandatory CSR disclosures and firms’ performance could be due to further aggravation of the agency problems and increased agency costs (e.g., Buchanan et al., 2018). Whether mandatory CSR disclosures are positively or negatively associated with firms’ performance is therefore an empirical question. We therefore posit the following research hypothesis:

H1. Mandatory CSR disclosures are positively (negatively) associated with firms’ market-based performance in the post-mandatory period.

Further, we explore whether institutional ownership moderate the association between mandatory CSR disclosures and firm value (e.g., Shleifer & Vishny, 1986). There are two competing views with regards to the monitoring role of institutional investors. On the one hand, consistent with the efficient monitoring hypothesis, as institutional investors are more experienced, they are likely to be better equipped to efficiently monitor firms’ management (e.g., Cella, 2020; Demiralp et al., 2011; Ho et al., 2020; Lee & Park, 2009; McConnell & Servaes, 1990). Chen et al. (2007), for instance, argue that monitoring cost decreases with institutional ownership, and show that independent long-term institutions with large holdings engaged in monitoring activities to create firm value rather than trading for short term gain. On the other hand, the conflict of interest and the strategic alliance hypotheses posit that institutional investors may have other economic ties or strategic alliances within the firm that may lead to a lack of efficiency on the part of institutional investors in overseeing management actions (Burns et al., 2010; Pound, 1988). While the efficient monitoring hypothesis predicts a positive association between institutional investors and firms’ performance, the latter two hypotheses predict a negative relationship. We therefore predict and test the following research hypothesis:

H2. Firms with high institutional ownership are likely to experience lower decreases in their values in the post-mandatory CSR disclosure period.

Next, we argue that managers may engage in CSR activities to enhance their personal reputation and gain private benefits by overinvesting when firms have sufficient free cash flow (e.g., Brown et al., 2006). In contrast, debt reduces the availability of free cash flow to managers, thereby lowering the agency costs of free cash flows (Jensen, 1986). Moreover, the inclusion of covenants in debts contracts also serves to limit managers’ ability to invest (e.g., D’Mello & Miranda, 2010). As a consequence, managers in firms with high leverage are less likely to invest more in CSR activities due to restrictions imposed by debt covenants and lack of free cash flows at their disposal to pursue private benefits. We therefore posit the following:

H3. Firms with high leverage are likely to experience less reduction in their values in the post-mandatory CSR disclosure period.

3 | RESEARCH METHODOLOGY AND DATA

This study employs a DID research design to explore the changes in firm value among treatment firms and control firms during the sample period. We follow PSM to construct control firms and ensure that control firms are comparable to treatment firms in the sample. Using pre-mandatory data period (2003–2008), we estimate a logit regression model to predict the likelihood of being a treatment firm in the pre-mandatory period. The logit
regression model includes a number of variables found relevant in the prior literature (e.g., Chen et al., 2018; Wang et al., 2018): analyst coverage (ANYT), market value (MV), firm size (SIZE), stock return (RET), stock turnover (TURN), and ROE. Panel A of Table 1 represents the summary of these variables. Table 2 demonstrates that ANYT, RET, and ROE are favourably associated with the probability of a treatment firm, while TURN is adversely related.

The DID technique isolates the influence of required CSR disclosure on firm value by comparing changes in firm value among treatment and control firms following the CSR disclosure mandate, thus reducing potential endogeneity concerns. The following regression model is used to estimate the effect:

$$TQ = a_0 + a_1(\text{Post}) + a_2(\text{Treatment}) + a_3(\text{Treatment} \times \text{Post}) + a_4(\text{Control}) + \varepsilon$$  \hspace{1cm} (1)

where Tobin’s Q (TQ) is a measure of firm value. Post is a dummy variable that equals one if the period is the post-mandatory period (2009–2020) and zero if the period is the pre-mandatory period (2003–2008). The coefficient of Post represents the changes in firm value for non-mandated reporting firms. Treatment is a dummy variable indicating whether a firm is required to disclose CSR.

Since the SHSE and SZSE adjust the list of firms that are required to disclose CSR each year, to ensure that all treatment firms have the same post-mandatory period, only firms that were included in 2008 and have never been excluded after 2008 are chosen to be treatment firms. The coefficient of Treatment indicates the differences in firm value between mandated reporting firms and non-mandated reporting firms before the mandate. Treatment \times Post is the interaction term for the variable of interest. The coefficient of the interaction term reflects the changes in firm value following the mandate for mandated reporting firms relative to the changes for non-mandated reporting firms. A negative coefficient on \(a_3\) indicates that mandatory CSR disclosure decreases Tobin’s Q after the mandate, thus implying a value-reducing effect. A positive coefficient on \(a_3\) indicates that mandatory CSR disclosure increases Tobin’s Q after the mandate, thus implying a value-enhancing effect.

Consistent with prior literature (e.g., Buchanan et al., 2018; Chen et al., 2018; Harjoto & Jo, 2011; Liu & Tian, 2021), we also control for firm characteristics and governance features, including firm size (SIZE), growth...
Large firms are believed to have relatively lower risk as compared to small firms and are therefore able to access more resources and attract more investors. Nonetheless, large firms may be more mature with relatively limited growth opportunities, resulting in a negative association between firm size and Tobin’s Q. Similarly, high growth indicates greater growth opportunities in the future, and high ROA indicates higher profitability, both of which are likely to improve investor confidence and firm value.

With regards to leverage, it is cheaper for managers to invest in projects using debt resulting in higher returns for shareholders. However, a high debt ratio may also induce high risk. Therefore, the expected sign for leverage is unclear. In the same vein, the level of cash holding may also have either positive and negative effects on firm value. On the one hand, adequate cash flow allows managers to invest in more projects with positive returns. On the other hand, but it may also allow managers to over invest in negative net present value projects. The expected sign of the coefficient on SOE is also uncertain. SOE’s in China, for instance, typically receive government assistance and have easier access to resources. At the same time, SOEs are also required to perform political responsibilities and experience greater overinvestment and agency difficulties (Fan et al., 2007; Firth et al., 2012).

It has been argued that governance mechanisms could also affect firm value where large board size and more independent directors on board could help in limiting the agency problem (Fama & Jensen, 1983). However, boards may also have an incentive to act in their own self-interest (e.g., Agrawal & Knoeber, 1996; Hermelin & Weisbach, 2012). Therefore, the effect of board independence on firm value is inconclusive. CEO duality is expected to be negatively associated with firm value due to more powers confined in the same person, resulting in more agency problems. Likewise, while high ownership concentration may reduce conflicts of interest (Jensen & Meckling, 1976), it may also exacerbate conflicts between large and minority shareholders. Consequently, the expected coefficient sign is uncertain.

The base sample consists of A-share firms listed on the SHSE and SZSE during the sample period from 2003 to 2020 including 1,689 treatment and 20,295 control firm-year observations. Relevant financial and corporate governance data are obtained from the CSMAR database. We identify the list of mandatory CSR disclosure firms from notices issued on the SHSE, SZSE, and iFinD websites. Our sample period begins from 2003 as data for one of the variables of interest, institutional ownership, is only available from that year onwards. Since the mandate was issued at the end of 2008, data period from 2003 to 2008 is regarded as the pre-mandatory period, while the data period from 2009 to 2020 is regarded as the post-mandatory period. The initial sample consisted of 13 categories of industries including agriculture, mining, manufacturing, utilities, construction, transportation, information technology, wholesale and retail, real estate, services, communication, finance, and others. Firms in the financial industry and firms cross-listed on foreign stock markets are excluded as they are subject to different regulations. All continuous variables are winsorised at the top and bottom 1%. Using the radius matching approach and a caliper of 0.05 standard error of the propensity score, each treatment firm is matched to a control firm. Treatment firms are those that have committed to mandated CSR disclosure, while control firms are those that have not. The final sample contains 13,085 firm-year observations, which include 1,677 treatment and 11,408 control observations.

We divide the PSM sample into high and low institutional ownership firms based on the mean value of institutional ownership and run separate regressions on the two sub-samples to test our second hypothesis, H2. Similarly, we divide the PSM sample into two sub-samples based on the mean leverage value and estimate separate regressions for each sub-sample in order to test of third hypothesis, H3.

## 4 Results and Discussion

Table 3 presents descriptive statistics of the full sample. The average Tobin’s Q is 2.075. The average percentage of institutional ownership is 40.87%, indicating that there is significant variation in institutional ownership across firms. Further, leverage (LEV) has a mean of 0.441, while the maximum value exceeds 1, suggesting that some of the sample firms face higher levels of debt. For the treatment firms, the average Tobin’s Q is 1.713, which is lower than that of the full sample average. Mean values of 53.68% for institutional ownership and leverage value of 0.486 are higher than the full sample average.

The control firms sample exhibit a higher average Tobin’s Q values compared to full and the treatment firms’ samples. The average institutional ownership, and leverage levels are lower for the control firms’ sample as compared with both full and treatment firms’ sample...
The average firm size of treatment firms is higher than that of control firms. Table 4 exhibits the descriptive statistics of the PSM sample. The average value of Tobin’s Q for the treatment firms’ sample is lower than that of control firms’ sample. Compared to the full sample average, control firms have a higher average leverage level than that of the treatment firms’ sample. However, the mean value of leverage in the two groups is relatively closer after matching. The average institutional ownership and firm size of treatment firms are still higher than control firms. However, the differences in these two variables between the groups decrease in the PSM sample. Therefore, after the matching procedure, treatment firms and control firms are more comparable.

Pearson correlation coefficients among firm factors are shown in Table 5. The treatment firm dummy variable is negatively associated with Tobin’s Q, providing an early indication of the relationship between these two variables. In addition, firm leverage and institutional ownership are inversely related to Tobin’s Q.

Table 6, column 1 reports the estimation model results for the PSM sample. The coefficient on Post is significantly positive, indicating that the control firms experience changes in their firm value after the mandate. The coefficient on Treatment is also positive, showing that before the mandate, treatment firms have higher Tobin’s Q. The coefficient on the variable of interest, Treatment × Post is negative and significant at the 1% level, suggesting that mandatory CSR disclosure is negatively associated with firms’ values. These results also have economic implications. Compared to non-mandated reporting period firms, firms that are mandated to report CSR experience a 13.74% decrease in firms’ values in the post-mandatory period. Table 6, column 2 reports the results of the fixed effect model. Since the fixed effect model controls for firm and year effects, Post and Treatment are omitted. The coefficient on the interaction
term, Treatment $\times$ Post is still statistically significant and negative. These results are also economically meaningful, indicating that firms’ values of mandated reporting firms decreased 9.9% relative to non-mandated reporting firms subsequent to the mandate.

The results also show that firm size (SIZE), state ownership (SOE), and the largest shareholdings (TOPSH) are negatively associated with firms’ values, while leverage (LEV), ROA, cash holding (CASH), board size (BOARD), and board independence (IND) are positively associated with Tobin’s $Q$.

The above empirical results suggest that the mandatory CSR disclosure exacerbates agency problems. We therefore predicted that firms with high institutional ownership are likely to experience lower decreases in firms’ values in the post-mandatory CSR disclosure period. Table 7, columns 1 and 2 indicate that the coefficients on Treatment $\times$ Post are negative and significant for both high and low institutional ownership firms’ sub-samples. Consistent with H2, however, for firms with high institutional ownership, the coefficient on the interaction term is higher than that for firms with low institutional ownership. These findings imply that institutional investors partly mitigate the negative effects of mandatory CSR disclosure on firms’ values.

Similarly, Table 7, columns 3 and 4 indicate that the coefficients on Treatment $\times$ Post are negative and significant for both high and low leverage firms’ sub-samples, suggesting that firms’ values decrease in the post-mandatory CSR disclosure period for both high and low leverage firms. Consistent with H3, however, for high leverage firms, the absolute value of the coefficient on the interaction term is lower than that of low leverage firms, showing that firms’ values in high leverage firms decrease less after the mandate.
TABLE 5  Correlation matrix.

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<td>0.1298*</td>
<td>-0.1097*</td>
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<tr>
<td>(6) IND</td>
<td>0.1469*</td>
<td>-0.0460*</td>
<td>-0.0595*</td>
<td>0.0487*</td>
<td>-0.5237*</td>
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<tr>
<td>(7) INST</td>
<td>-0.2097*</td>
<td>0.1639*</td>
<td>0.0154</td>
<td>-0.1309*</td>
<td>0.0991*</td>
<td>-0.0269*</td>
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<tr>
<td>(8) ROA</td>
<td>0.0317*</td>
<td>0.1745*</td>
<td>-0.2917*</td>
<td>-0.0394*</td>
<td>0.0856*</td>
<td>-0.0584*</td>
<td>0.1385*</td>
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<tr>
<td>(9) ROE</td>
<td>-0.0234*</td>
<td>0.1404*</td>
<td>-0.2299*</td>
<td>-0.0335*</td>
<td>0.0768*</td>
<td>-0.0524*</td>
<td>0.1124*</td>
<td>0.8392*</td>
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<tr>
<td>(10) GROW</td>
<td>0.0126</td>
<td>-0.0020</td>
<td>0.0416*</td>
<td>0.0045</td>
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<td>0.0917*</td>
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<tr>
<td>(11) TURN</td>
<td>0.2055*</td>
<td>-0.1578*</td>
<td>-0.0010</td>
<td>0.0326*</td>
<td>-0.0879*</td>
<td>0.0233*</td>
<td>-0.2079*</td>
<td>-0.0872*</td>
<td>-0.0697*</td>
<td>0.0157</td>
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<tr>
<td>(12) TOP</td>
<td>-0.1936*</td>
<td>0.1818*</td>
<td>0.0353*</td>
<td>-0.1177*</td>
<td>0.0382</td>
<td>0.00330</td>
<td>0.6964*</td>
<td>0.1604*</td>
<td>0.1352*</td>
<td>0.0520*</td>
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<tr>
<td>(13) SOE</td>
<td>-0.0292*</td>
<td>0.1326*</td>
<td>0.0926*</td>
<td>-0.1914*</td>
<td>0.2380*</td>
<td>-0.1222*</td>
<td>0.2392*</td>
<td>0.0206</td>
<td>0.0331*</td>
<td>-0.0336*</td>
<td>-0.0646*</td>
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<tr>
<td>(14) RET</td>
<td>0.2447*</td>
<td>-0.2053</td>
<td>0.0080</td>
<td>-0.00710</td>
<td>0.00100</td>
<td>0.00230</td>
<td>-0.0265*</td>
<td>0.1144*</td>
<td>0.1022*</td>
<td>0.0738*</td>
<td>0.4914*</td>
<td>-0.00340</td>
<td>-0.00190</td>
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<tr>
<td>(15) CASH</td>
<td>0.1762*</td>
<td>-0.0473*</td>
<td>-0.3415</td>
<td>0.0156</td>
<td>-0.00680</td>
<td>0.000600</td>
<td>0.0435*</td>
<td>0.2385*</td>
<td>0.1801*</td>
<td>0.0247*</td>
<td>-0.0235*</td>
<td>0.0222</td>
<td>0.00420</td>
<td>0.0337*</td>
<td>1</td>
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<tr>
<td>(16) MV</td>
<td>-0.0717*</td>
<td>0.3533*</td>
<td>0.2069*</td>
<td>-0.0578*</td>
<td>0.2705*</td>
<td>-0.0838*</td>
<td>0.1495*</td>
<td>0.2083*</td>
<td>0.1895*</td>
<td>0.0384*</td>
<td>-0.1830*</td>
<td>0.1665*</td>
<td>0.1286*</td>
<td>0.0386*</td>
<td>-0.0426*</td>
<td>1</td>
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<td></td>
</tr>
<tr>
<td>(17) ANYT</td>
<td>-0.0433*</td>
<td>0.3462*</td>
<td>-0.0187</td>
<td>-0.0436*</td>
<td>0.2675*</td>
<td>-0.1327*</td>
<td>0.1191*</td>
<td>0.3621*</td>
<td>0.2921*</td>
<td>0.0525*</td>
<td>-0.1402*</td>
<td>0.1418*</td>
<td>0.0441*</td>
<td>0.0342*</td>
<td>0.0844*</td>
<td>0.5794*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>(18) SIZE</td>
<td>-0.4357*</td>
<td>0.3384*</td>
<td>0.2863*</td>
<td>-0.0896*</td>
<td>0.3178*</td>
<td>-0.1259*</td>
<td>0.2318*</td>
<td>0.1607*</td>
<td>0.1714*</td>
<td>0.0316*</td>
<td>-0.2730*</td>
<td>0.2345*</td>
<td>0.1957*</td>
<td>-0.0892*</td>
<td>-0.1101*</td>
<td>0.9173*</td>
<td>0.5144*</td>
<td>1</td>
</tr>
</tbody>
</table>

***p < 0.01; **p < 0.05; *p < 0.1.
Robustness tests

We carry out several tests of robustness of the main results. First, compared to the PSM sample, there are more observations in the full sample. Table 8, column 1 reports the results of using the full sample. The coefficient on the variable of interest, Treatment/Post, is significantly negative, consistent with the main results reported earlier. The coefficient represents that mandated reporting firms experience a decrease of 9% in firm values compared to non-mandated reporting firms.

Second, the 2007–2008 financial crisis may have influenced some of the inferences we draw from our estimation results. We therefore re-estimate our model by excluding the year 2008. Table 8, column 2 presents the results of this estimation. The coefficient on Treatment/Post remains negative and significant at the 1% level.

Third, in addition to the radius matching method used earlier, we repeat our analysis by employing an alternative, nearest neighbourhood matching approach, to further test robustness of our results. Similarly, the pre-mandatory data period is used to find comparable firms. This procedure results in 8439 firm-year observations, in which 1677 are treatment firms and 6762 are control firms. Table 8, column 3 reports the results. Our results remain unaltered as the coefficient of the interaction term is still negative and statistically significant.

### Table 6
Regression results: PSM sample.

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post × Treatment</td>
<td>TQ</td>
<td>TQ</td>
</tr>
<tr>
<td>Post</td>
<td>−0.236*** (0.054)</td>
<td>−0.170** (0.075)</td>
</tr>
<tr>
<td>Treatment</td>
<td>1.743*** (0.084)</td>
<td>0.708*** (0.051)</td>
</tr>
<tr>
<td>SIZE</td>
<td>−0.707*** (0.018)</td>
<td>−0.924*** (0.050)</td>
</tr>
<tr>
<td>GROW</td>
<td>0.029 (0.023)</td>
<td>0.017 (0.018)</td>
</tr>
<tr>
<td>LEV</td>
<td>0.367*** (0.088)</td>
<td>0.425*** (0.162)</td>
</tr>
<tr>
<td>ROA</td>
<td>1.940*** (0.283)</td>
<td>1.860*** (0.308)</td>
</tr>
<tr>
<td>SOE</td>
<td>−0.180*** (0.024)</td>
<td>−0.155* (0.081)</td>
</tr>
<tr>
<td>CASH</td>
<td>1.129*** (0.137)</td>
<td>0.809*** (0.194)</td>
</tr>
<tr>
<td>BOARD</td>
<td>0.015*** (0.004)</td>
<td>−0.000 (0.009)</td>
</tr>
<tr>
<td>IND</td>
<td>2.630*** (0.324)</td>
<td>2.257** (0.522)</td>
</tr>
<tr>
<td>DUAL</td>
<td>0.045 (0.032)</td>
<td>−0.028 (0.044)</td>
</tr>
<tr>
<td>TOPSH</td>
<td>−0.266*** (0.068)</td>
<td>−0.284 (0.190)</td>
</tr>
<tr>
<td>Constant</td>
<td>15.414*** (0.358)</td>
<td>20.096*** (1.018)</td>
</tr>
</tbody>
</table>

**Note:** Robust standard errors in parentheses.

***p < 0.01; **p < 0.05; *p < 0.1.

### Table 7
Cross-sectional tests.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Institutional ownership</th>
<th>Leverage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low TQ</td>
<td>High TQ</td>
</tr>
<tr>
<td>Post × Treatment</td>
<td>−0.232* (0.124)</td>
<td>−0.199*** (0.054)</td>
</tr>
<tr>
<td>Post</td>
<td>1.566*** (0.166)</td>
<td>1.479*** (0.099)</td>
</tr>
<tr>
<td>Treatment</td>
<td>0.851*** (0.117)</td>
<td>0.408*** (0.051)</td>
</tr>
<tr>
<td>Controls</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry fixed effect</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year fixed effect</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Constant</td>
<td>20.807*** (0.555)</td>
<td>10.723*** (0.433)</td>
</tr>
<tr>
<td>Observations</td>
<td>6250</td>
<td>6835</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.538</td>
<td>0.413</td>
</tr>
</tbody>
</table>

**Note:** Robust standard errors in parentheses.

***p < 0.01; **p < 0.05; *p < 0.1.
Fourth, we use market-to-book ratio, measured as market value of assets divided by the book value of assets as an alternative measure of firm value (Bai et al., 2005). Regression results for this alternative proxy of firms’ performance are reported in Table 8, column 4. The results show that there is a significant, negative relationship between mandatory CSR disclosure and market-to-book ratio, suggesting that the mandate negatively influences firms’ values. Overall, the results of the robustness tests show that the main results are stable and validate that mandated reporting firms experience a reduction in firms’ values subsequent to the mandatory CSR disclosure shock.

Finally, one of the key assumptions of DID is a parallel trend, which suggests that without the exogenous shock, the difference between the treatment group and control group should be constant. In order to test the validity of the DID design, we therefore carry out a parallel test and consider 2008 as the current year, and four timing variables are generated: Year \(-1\), Year \(+1\), and Year \(+2\) (see e.g., Ni & Zhang, 2019). Next, the four timing variables are analysed against the treatment firms by estimating the following model:

\[
TQ = \delta_0 + \delta_1 (Year - 1 \times Treatment) + \delta_2 (Current \times Treatment) + \delta_3 (Year + 1 \times Treatment) + \delta_4 (Year + 2 \times Treatment) + \epsilon
\]  

The results reported in Table 9 show that the coefficient on Year \(-1\) \times treatment firms is insignificant, and the coefficients on Year \(+1\) \times treatment firms and Year \(+2\) \times treatment firms are significantly negative. This indicates that there is no significant difference between treatment and control groups in the pre-mandatory period, while after the mandatory disclosure requirement, treatment firms and control firms are significantly different. This, therefore, supports the parallel trend assumption.

5 | CONCLUSIONS

This study examines whether and how mandatory CSR disclosure is associated with firms’ values in China during the period 2003–2020. Our findings suggest that compared to non-mandated period, firms experience a loss in firms’ values following the mandate. The findings of our paper are thus consistent with the views that mandatory environmental, social, governance and sustainability
disclosures impose more costs on firms than benefitting them in terms of shareholder value. We further find that institutional ownership and leverage may potentially reduce the negative influence of mandatory CSR disclosure on firms’ values, implying that increased monitoring could result in restraining managerial behaviour.

Our findings thus have policy implications for regulators, policymakers, managers, and other stakeholders. For instance, our empirical findings contribute to the literature debating voluntary versus mandatory CSR disclosures and inform any future deliberation with regards to CSR and sustainability disclosure regulations in other jurisdictions. The findings imply that the choice and the extent of CSR and sustainability disclosures are better left to the discretion of managers rather than making them mandatory as it may result in destroying shareholders’ value. We posit that managers who value their CSR activities may be more inclined to voluntarily disclose such information and use their CSR and sustainability related disclosures as a vehicle to improve communication with stakeholders by portraying transparency and thus building a positive image. Similarly, we further contend that voluntary CSR disclosures may allow firms with more flexibility to integrate their CSR disclosures with their existing financial reporting. We must caution however that as we do not examine social and welfare implications in our analysis, we cannot rule out potential positive implications of compulsory CSR disclosures.

Future studies could examine the impact of compulsory CSR disclosures across three key, environmental, social, and governance pillars separately to evaluate the impact of mandatory CSR disclosure across these key dimensions. This would in turn, indicate whether there are any positive social and welfare implications of compulsory CSR disclosures over and above the effects on shareholders’ wealth. Further, the recent COVID-19 pandemic has adversely affected economies worldwide and influenced both production and consumption, thus resulting in lower firms’ revenues and cash flows. Nonetheless, the general public expects firms to pump up their CSR activities during difficult economic periods to help out the struggling communities to cope with the adverse effects of the pandemic (e.g., Madsen & Rodgers, 2015). We thus argue that the mandatory CSR disclosure may exert more social and political pressure on firms to engage in CSR activities during the pandemic (e.g., Chen et al., 2018). It will be interesting to explore the moderating effects of COVID-19 on the mandatory CSR disclosure and performance relationship.

ACKNOWLEDGEMENTS
The authors would like to thank the editor and the two anonymous referees for their valuable comments and constructive feedback that have greatly improved quality of the paper.

CONFLICT OF INTEREST STATEMENT
The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT
The data that support the findings of this study are available from the corresponding author upon reasonable request.

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ENDNOTES
1 https://www.ifrs.org
2 SEC Proposes More Disclosure Requirements for ESG Funds-WSJ (ampproject.org), accessed date: 14 June 2022.
3 In particular, SHSE mandated sustainability reporting for firms included in the SHSE Corporate Governance Index, firms with overseas listed shares, and firms in the financial industry. SZSE mandated sustainability reporting for firms included in the Shenzhen 100 Index (Christensen et al., 2021; Ioannou & Serafeim, 2017).
4 While CSR disclosure is mostly voluntary in many jurisdictions, some countries have started to make CSR disclosure mandatory for certain sub-set of firms (e.g., Sweden, Denmark, India, China). Ioannou and Serafeim (2017), for instance, indicate that companies in China had very low levels of ESG reporting prior to mandatory disclosure regulations (see e.g., Ioannou & Serafeim, 2017 for a discussion of mandatory CSR reporting policies and their impact on firms’ behaviour).

REFERENCES


