

Do Government Say-on-Pay Policies Distort Managers' Engagement in Corporate Social Responsibility? Quasi-Experimental Evidence from China

Abstract

Against the backdrop of a series of regulations issued by the Chinese Government in an effort to rein in top executives' compensation in state-owned enterprises, this study investigates whether the exogenous shock resulting from restricting top executives' pay levels modifies their incentives to conduct socially responsible activities. Our analyses, using a baseline regression and a difference-in-difference (DiD) approach, both reveal that the pay restriction on top executives imposed by the government adversely affects the CSR performance. The results hold after we conduct tests to alleviate the concerns about possible self-selection bias and reverse causality between the pay restriction and CSR. In addition, we reveal that the negative effect of the pay restriction on CSR is alleviated in regions with a high level of social capital, suggesting that the social expectation of firms serves as an influential factor in managers' CSR decisions. Meanwhile, managerial shareholding mitigates the negative effect of the pay restriction on CSR performance because of an alignment of interests between managers and other stakeholders.

Keywords: Quasi-experiment; Government Say-on-Pay Policies; CSR Performance; Social Capital; China

1. Introduction

China issued a set of regulations to limit top executives' compensation in state-owned enterprises (SOEs hereafter), which has sparked research interest in examining the real economic impact of the policy. Although insightful evidence is provided on the detrimental effect of the policy on firms' financial performance (Jiang and Zhang, 2017) and managers' risk-taking incentives (Su et al., 2020), it is unknown whether it also affects firms' corporate social responsibility performance (CSR performance hereafter).

The level and structure of executive compensation and its association with firm CSR performance is a well-studied topic, but the findings are inconclusive. Some scholars document a positive (negative) relationship between long-term (short-term) executive pay and CSR (e.g. Deckop et al., 2006), whereas others find mixed results (e.g. McGuire et al., 2003). The inconclusive evidence raises a concern about reverse causality between executive compensation and social performance. Specifically, some studies report that the optimal compensation structure provides incentives for CEOs to act morally and improve a firm's social performance (Mahoney and Thorne, 2005, 2006; McGuire et al., 2003), while others find that superior CSR performance is a determinant of CEOs' compensation (Berrone and Gomez-Mejia, 2009; Cai et al., 2011; Jian and Lee, 2015). To overcome the problem, we identify the Chinese Government's pay-on-say policy imposed on SOEs as an exogenous shock and follow a difference-in-difference (DiD) research design in addition to conducting regression analysis and endogeneity tests. The regulations imposed by the government on one group of firms, SOEs, but not others resembles a quasi-experiment setting, allowing us to offer evidence on whether a pay restriction imposed by a government agent rather than a market force or shareholders is a determinant of CSR performance.

Besides the DiD research design, we employ conventional regression analysis to test the effect of the level of the pay restriction on CSR. To this end, we operationalize the

regulatory restriction on executive compensation in three ways following pay restriction studies (Jiang and Zhang, 2017; Su et al., 2020). First, we measure the difference between the industry-year average pay gap of non-SOEs and that of SOEs, setting the non-SOEs' pay gap as the benchmark. The pay gap is the difference between the top executives and the normal employees. A large value of non-SOEs' top executives' pay gap relative to that of SOEs indicates constrained pay of top executives in the SOEs. The second measure is the ratio of the average cash compensation of the top three executives to the average salary of all the employees in an SOE. The third measure gauges the difference between the average cash compensation of the top three executives and that of the other executives in an SOE. For easy exposition, the last two measures are multiplied by -1 so that the higher the values are, the greater the constraint on top executives' compensation is.

We draw a sample from listed SOEs and non-SOEs on both the Shanghai and the Shenzhen Stock Exchange. Our regression analyses of SOEs' sample observations and difference-in-difference (DiD) tests of the propensity score matched sample between the treatment sample group of SOEs and the control sample group of non-SOEs provide corroborative and consistent evidence that the pay restriction on top executives of SOEs adversely affects the CSR performance. The multivariate regression analysis reveals that the negative effect of the pay restriction on CSR is economically significant with 1 standard deviation of increase in the pay restriction bringing about a 4–8 per cent decrease in social performance around its mean. Furthermore, the results reveal that the negative effect is attenuated in the high social capital regions where firms' headquarters operate and in firms with a high level of managerial shareholding. Collectively, the findings provide insights into the social consequence of the pay restriction imposed by the government on corporate executives and suggest that, when managerial incentives to conduct CSR are distorted, social capital and managerial ownership offset the negative impact. We conduct further sensitivity

tests to alleviate further the concerns about endogeneity that may exist with our regression analyses using the SOE sample observations. The results conform to the main findings.

This study makes several contributions to the literature. First, the extant compensation literature predominantly focuses on the issues of compensation received by the CEO alone, while our study extends to a group of top executives as a team because the top management team provides stronger explanatory power in organizational outcomes (Hambrick, 2007; Oh et al., 2016). Second, the study contributes to the emerging debate on whether the pay disparity negatively contributes to a company's long-term performance and whether the pay gap should be regulated (Garner and Kim, 2010). By studying the pay regulations imposed on top executives in China, this study provides evidence that restricting the pay disparity has a significant and negative influence on social performance, highlighting that government intervention in executive pay may distort managerial incentives. Studies so far find that government say-on-pay policies are associated with reduced corporate financial performance (Jiang and Zhang, 2017) and risk taking (Su et al., 2020). Our findings of the demotivating effect of the pay restriction on CSR performance enrich this government say-on-pay literature from a social responsibility perspective and have implications particularly for governments in controlled or semi-controlled economies.

Furthermore, by further exploring whether the relationship between pay restrictions and corporate social performance is contingent on social capital, our research reveals that a pay restriction has a less profound negative impact on CSR performance in a society with high social capital. The results indicate that, when government intervention in corporate pay decisions induces unwanted consequences, high social capital weakens the distortion because of people's inherent belief in conducting socially responsible deeds regardless of the financial rewards. This finding underlines the interaction between social order and government intervention.

The remainder of this paper is organized as follows. Section 2 discusses the relevant literature and describes the background of executive compensation as well as the restrictions imposed by recent regulations, followed by the development of the hypotheses. Section 3 describes the research variables and methodology. Section 4 presents the empirical results. Section 5 concludes the paper.

2. Literature review and hypothesis development

2.1 Literature survey

The current study focuses on regulatory intervention imposed by government say-on-pay policies and thus is distinguished from the extant literature on shareholders' say-on-pay regime. Shareholders' say-on-pay policy allows shareholders to vote on the maximum amount of total compensation to be received by executives, directors and auditors at annual general meetings. Under this regime, the board of directors is required to pay explicit attention to the design of compensation plans with respect to scenarios that may lead to large payouts to executives (Dittmann et al., 2011). Studies on shareholders' say-on-pay policies are proliferating.¹ While some suggest an increase in the monitoring function of shareholders on executive pay (e.g., Balsam et al., 2016; Cai and Walkling, 2011),² others present opposite evidence (e.g., Knutt, 2005; Murphy, 1995).³ It is also reported that the shareholders' say-on-pay policy creates value for companies with inefficient executive compensation but can destroy

¹ Ferri and Göx (2018) provide a comprehensive literature review on shareholders' say-on-pay policies, discussing the origins of and country-specific differences in the policies.

² Balsam et al. (2016) investigate the impact of say-on-pay policies on the 2010 executive compensation in the US, finding that affected firms reduced compensation and made it more performance based in advance of the initial 2011 vote. Cai and Walkling (2009) find a positive market reaction to the say-on-pay requirement for firms with high excess compensation and low pay–performance sensitivity in the US. Using UK data, Carter and Zamora (2009) find that shareholders tend to disapprove of excessive compensation, weak pay–performance bonuses and greater dilution in equity pay.

³ Murphy (1995) criticizes the 1992 proxy reforms as a populist outcome. Knutt (2005) shows that government regulation of executive compensation has not decreased excess executive compensation and suggests better corporate governance systems as a solution to executive compensation problems. Garner and Kim (2010) investigate regulation in South Korea, where shareholders have to vote on the maximum amount of compensation that managers can receive.

value for firms with labour-sponsored proposals, because labour-sponsored proposals are motivated by activists and aim to target large firms rather than those with excessive CEO pay, poor governance or poor performance (Cai and Walkling, 2011). Taken together, the wisdom of the literature on shareholders' say-on-pay policies suggests caution in intervening in executive pay because of the potential for abusive use of the regime. Although shareholders' say-on-pay policies occupy a rich literature, studies on the government say-on-pay policy are literally non-existent and thus this is an under-researched area.

Prior studies on the relationship between corporate executive pay and social performance focus exclusively on the amount and type of CEO pay (Hart et al., 2015) and provide evidence that CEO pay is either the determinant of CSR or the consequence of CSR, raising severe concerns about reverse causality. On one hand, executive compensation has a bearing on corporate social performance. It is reported that CEO compensation serves as an important mechanism to promote the implementation of a firm's social objectives (McGuire et al., 2003). Deckop et al. (2006) document a negative (positive) relationship between CEO short-term pay (long-term pay) and CSR in US firms. Similar findings are reported by Kane (2002) and Mahoney and Thorne (2005) using Canadian data. Another related study by McGuire et al. (2003), using CSR strengths and weaknesses, reports that CEOs' salary and stock options are positively related to CSR weakness using the KLD database.⁴ Similarly, Mahoney and Thorne (2006) report a significant positive relationship between CEOs' salary and CSR weakness, bonuses and CSR strengths, stock options and total CSR, and stock options and CSR strengths in Canadian firms. Fabrizi et al. (2014) find a negative effect of CEOs' equity incentives and annual bonus on CSR. Hence, the literature shows mixed findings. The contradiction may be due to studies' focus on individual CEOs' pay and the lack of attention

⁴ CSR strengths refer to a more pro-active position in which a firm exceeds the usual expectations, and CSR weaknesses represent socially risky strategies or those that do not meet the usual norms or expectations (McGuire et al., 2003).

to the pay difference among top executives. Siegel and Hambrick (2005) contend that executives are motivated not just by the amount or type of their own compensation but also by the degree of pay disparity.

With reference to firms' financial performance, prior research studies the pay disparity among the top management team and finds a positive relationship between pay disparity and *financial performance*, providing evidence corroborating the tournament theory (e.g., Banker et al., 2016). Hart et al. (2015) investigate how the structure of the executive pay disparity affects corporate social performance. From a stakeholder perspective, the authors argue that a small pay disparity between CEOs and non-CEOs aligns managers' interest with a broader group of stakeholders as it encourages egalitarianism, trust and cooperation, resulting in higher levels of corporate social performance. In contrast, a large pay disparity between non-CEO executives cultivates individualistic and self-centred behaviours, resulting in low levels of corporate social performance. Although the authors conduct a few tests to alleviate the concern about endogeneity, the potential self-selection bias is unaddressed.

On the other hand, previous studies show that greater CEO compensation is a consequence of superior corporate social performance, suggesting that CSR is the determinant of CEO compensation. Berrone and Gomez-Mejia (2009) report that good environmental performance increases CEO pay in polluting industries in a study using US data. Contrary to the inference drawn above, other studies suggest that socially responsible firms are more prudent in rewarding their executives. This is because investment in social and environmental activities does not produce an immediate pay-off. Rekker et al. (2014) document a negative relationship between CEO total compensation and socially responsible firms; however, this relationship weakens when the firm's CEO is female. More recently, Jian and Lee (2015) find that CEO total compensation is negatively associated with CSR investment but positively associated with the optimal level of CSR. A similar finding is echoed by Cai et al. (2011),

which finds that a lag of CSR adversely affects both the total CEO compensation and the cash compensation.

Therefore, the above findings indicate a concern regarding reverse causality between CEO compensation and CSR. That is, it is unclear whether CEO compensation serves as inducement for corporate moral and social engagements or whether it is merely an outcome of superior financial and social performance. This question is intriguing and thus motivates our investigation. Similar to the inquiry into the pay gap as a determinant, we investigate the impact of executive pay disparity imposed by government regulation on CSR. However, our study differs from the prior literature, particularly Hart et al. (2015), in two important ways. First, we examine the effect on corporate social performance of a pay restriction imposed by a government on executive compensation. This exogenous setting allows us to draw causal inference on the effect of the pay gap on firm social performance by conducting an identification test using the DiD approach because the levels of the pay gap are not a result of firms' self-selection but a consequence of mandatory regulation. Using China's unique regulation to cap executive pay in SOEs as a quasi-experiment, our investigation intends to untangle the relationships between executive compensation and CSR, which are plagued by reverse causality. We also conduct robustness tests to deal with the concerns about endogeneity between the pay gap and CSR due to potential reverse causality, self-selection and omitted variable problems. More importantly, we argue the opposite to Hart et al.'s (2015) argument that a small pay gap is conducive to corporate social performance.

2.2 Executive pay in China, the government say-on-pay policy and hypothesis development

Most countries have relied on either market mechanisms or shareholders' say-on-pay schemes to control excessive executive compensation. In contrast, our study focuses on the regulatory intervention imposed by a government say-on-pay policy and thus distinguishes

itself from the extant literature on shareholders' say-on-pay regime. China has taken a drastic approach to restrict top executives' monetary gain due to the government's ideology of promoting equal pay and maintaining a harmonious society. Starting in 2004, the Chinese Government issued a series of regulations to rein in executive compensation in all SOEs but left compensation received by non-SOE executives unregulated.

The pertinent regulations set an upper limit on the executive compensation of SOEs with reference to the average salary of employees. Specifically, in 2004, China issued the first legislation, entitled *Executive Compensation Rules and Guidelines for Government-Controlled SOEs* (SASAC, 2004; 2004 regulation hereafter). The 2004 regulation stipulates a formula to determine the maximum compensation of the three top executives, namely the CEO, the deputy CEO and the CFO, using a mathematical function. A top executive's compensation is contingent on the average salary of the normal employees of the same firm.⁵ The policy was further updated in *Guiding Opinion on Further Regulating Executive Compensation for Government-Controlled SOEs* (SASAC, MOF, MHRSS and ODCPC, 2009) to include executives' superannuation and insurance in the broad concept of executive compensation. Once again, in 2014, China tightened the policy by capping top executives' compensation at about seven to eight times the average salary of employees. Furthermore, the amendments state that (1) the base salary of a top executive is no more than two times the average salary of employees; (2) a top executive's bonus is no more than two times the executive's own base salary; and (3) a top executive's share-based incentives, despite being rarely used by SOEs, are no more than 30 per cent of his/her total compensation per year within the tenure (Politburo of the Chinese Communist Party, 2014). Although the pay restriction policies were issued from 2004 onwards, the recent regulation in 2014 was the most strictly enforced. The

⁵ The formula in the 2004 regulation takes into account not only the total assets, main operating revenues, net assets and net profit of the SOE concerned but also the average employee salaries of all the SOEs in the country, in the same region and in the same industry (Jiang and Zhang, 2017).

implementation of the 2014 policy was accompanied by timely penalties for any breach of the policies or inactions of firms. Like many policies in China, when there is a lack of enforcement, compliance is questionable. Therefore, the 2014 policy provides an ideal setting for conducting identification tests on the regulatory effect.

Our development of hypotheses is based on tournament theory. It uses pyramid compensation structures to motivate and reward individuals who outperform their fellow competitors (Lazear and Rosen, 1981). Hence, the greater the pay gap, the more effort executives will make. A smaller pay disparity may not incentivize the management enough to participate in the managerial tournament and to stipulate their efforts to win the top executive job. Tournament incentives elicit superior firm performance and discourage managerial shirking (Lin et al., 2013). Plentiful empirical evidence supports tournament theory (e.g., Henderson and Fredrickson, 2001; Kale et al., 2009) and documents the positive effect of a large compensation gap on firms' economic performance, including evidence from China (Banker et al., 2016; Hu et al., 2013).

Tournament theory also suggests that larger pay disparity can attract talented managers who in turn contribute to the quality of management, which is positively related to the corporate social performance (Waddock and Graves, 1997). Wiggernhorn et al. (2016) find that powerful CEOs, as measured by high pay disparity, positively affect the quality of employee relations. Trevor and Wazeter (2006) report that under-paid executives make decisions in favour of boosting the immediate revenue and against investing in CSR because the latter incurs expenses and requires long-term payoffs.

In addition, SOEs' executives in China face multiple objectives, including improving the economic performance and maintaining the social stability. Their performance is evaluated not only through the firm's profitability but also through its social performance (Du et al., 2012; Li et al., 2013). SOEs' executives receive performance-based bonuses based on their economic

and social performance, which is evaluated each year and determined by the State-Owned Assets Supervision and Administration Commission of China (SASAC) (Du et al., 2012). The SASAC uses explicit policy guidelines for its evaluation of SOEs' executives, which include non-financial measures such as environment- and safety-related criteria (Li et al., 2013).⁶ Therefore, those performance-based bonuses provide direct incentives for SOEs' executives to enhance the CSR performance. Empirically, Ali et al. (2020) show that CEOs' pay difference from other executives motivates Chinese CEOs to be more socially responsible, resulting in better CSR performance, and this effect is more pronounced in SOEs than it is in non-SOEs. In line with the literature, we posit that restricting top executives' financial incentives damages their motivation to engage in CSR.

Nevertheless, it is also likely that executives may shift from profit-driven activities to socially responsible activities when their compensation is restricted. This may happen when top executives no longer receive incremental financial rewards for their economic performance and thus they choose to carry out more socially responsible activities. If this is the case, the pay restriction will encourage top executives to engage in CSR, enhancing SOEs' CSR performance.

Given the SASAC's guidelines on performance-based bonuses in relation to economic and social performance and Ali et al.'s (2020) empirical finding on the significantly positive effect of CEO pay disparity on CSR performance, particularly in SOEs, we argue that a reduced pay disparity as a result of a pay restriction may adversely affect corporate social performance; therefore, the first hypothesis is as follows:

H1. Ceteris paribus, a restriction on executive pay is negatively associated with CSR performance in SOEs.

⁶ The detailed guidelines used by the SASAC can be found at http://www.sasac.gov.cn/gzjg/tjyj/xjyj/tjyj_xjyj_0001_fj01.htm.

Social capital, pay restrictions and CSR

Social capital refers to social networks, that is, connections among individuals, the norms of reciprocity and trustworthiness that develop within a group and provide the impetus to pursue the shared objectives of all the members belonging to the group (Putnam, 2000). Social capital serves as a mechanism that connects individuals to others with similar values and beliefs and is viewed as an enabler of collective action and cooperation, resulting in a positive outcome, for example economic growth and environmental stewardship (Lins et al., 2017). Social capital relates to various important aspects of business ethics, such as transparency, goodwill and good citizenship (Spence et al., 2003).

Over the past decades, social capital has been incorporated into studies from a sociological perspective (e.g. Putnam and Feldstein, 2002) to economics and finance (e.g. Glaeser et al., 2000; Guiso et al., 2008; Lins et al., 2017). A handful of more recent studies invokes the concept of social capital as an alternative way to understand the motivation to engage in CSR. Using US data, Cahan et al. (2017) find that social norms motivate norm-constrained institutional investors, defined as pensions, universities and religious, charitable and not-for-profit institutions, to invest more in a firm with better CSR performance. Jha and Chen (2015) document a positive relationship between social capital and CSR in the United States, and this positive relationship is more pronounced in firms from a high social capital region. In a high social capital region, a strong relationship with specific stakeholders built out of trust, cooperation, reciprocity, reputation and legitimacy sufficiently licenses firms to operate. Reciprocally, firms exhibit higher CSR as stakeholders in these regions expect them to be socially responsible. In this respect, social capital can affect the behaviours of firms, and strongly internalized norms lead to corporate donations to charity, volunteering and collective well-being (Guiso et al., 2004). Based on the above arguments, we expect that the negative

effect of pay restrictions on CSR is mitigated in firms in a high social capital region, as stated in the following hypothesis:

H2. The negative effect of a pay restriction on CSR is mitigated in firms that operate in regions with a high level of social capital in comparison with their counterparts from low social capital regions.

Managerial ownership, pay restrictions and CSR

An interesting research inquiry concerns whether managerial shareholding mitigates the negative effect of a pay restriction on the managerial undertaking of CSR. Managerial shareholding can align managers' personal monetary interest with that of the rest of the shareholders and can often induce managers to take actions to improve shareholders' wealth (Jensen and Meckling, 1976). Since socially responsible actions increase firm values (Orlitzky et al., 2003), share ownership might induce managers to engage in CSR. This argument is well supported by empirical studies. For instance, Johnson and Greening (1999) find a positive relationship between managerial ownership and social performance in terms of environment and product quality. More directly, Su et al. (2020) reveal that the negative effect of the pay restriction on executives imposed by the Chinese Government on managers' risk-taking incentives is mitigated by managerial shareholding after controlling for other risk-taking incentives. Hence, we expect the adverse effect of a pay restriction on CSR to be attenuated if managers have a high level of shareholding, which leads to the third hypothesis:

H3. The negative effect of a pay restriction on CSR is mitigated in firms with a high level of managerial shareholding more than in their counterparts with a low level of managerial shareholding.

3. Research design

3.1 Variables

Pay restriction (*RES*) is measured in three ways, following Su et al. (2020). First, we adopt a measure that benchmarks the pay gap of SOEs against the average of similar non-SOEs in the same industry and year. Because the Chinese Government focuses on the ratio of top executives' compensation to normal employees' pay, we define the pay gap as the ratio of the average compensation of the top three executives to that of normal employees. As the government only restricts the executive pay in SOEs, their pay gap tends to be smaller than that of their non-SOE equivalents and a bigger difference indicates a larger restriction on an SOE's executive compensation. This measure (*RES1*) is calculated using the following formula:

$$RES1_{i,j,t} = AveragePayGap_Non_SOE_{j,t} - PayGap_{i,j,t}$$

where *AveragePayGap_Non_SOE_{j,t}* is the average pay gap calculated for industry *j* in year *t* using non-SOEs. *PayGap* is the ratio of the average compensation of the top three executives to the average salary of normal employees, and it is calculated for each SOE sample observation.

We also use two relative constructs to measure pay restriction. *RES2* is the ratio of the average compensation of the top three executives to that of normal employees, which, unlike the level of compensation, measures the pay gap directly. Similar measures are used in the existing literature (e.g., Banker et al., 2016). *RES3* is the natural logarithm of the difference between the average compensation of the top three executives and that of other executives excluding the top three executives. This measure proxies for the discrepancy in pay between top-level and low-level executives. The values of the last two measures are then multiplied by -1 so that greater *RES2* and *RES3* indicate that a firm's top executives' compensation is subject to greater restriction.

CSR performance (*CSR*) is measured using the overall rating of a firm's CSR activities as depicted in its CSR report and annual report. The rating is extracted from the Hexun CSR database. Hexun, founded in 1996, is a former subsidiary of the former China Securities Market

Research and Design Centre and has provided CSR ratings for Chinese public firms since 2010. It extracts CSR data from both the CSR report and the annual report, which is more comprehensive and helps to address sample selection bias (Tang et al., 2019). Hexun evaluates CSR according to five dimensions – (i) shareholder; (ii) employee; (iii) supplier, customer and consumer; (iv) environmental; and (v) social responsibility – with sub-dimensions involving around 50 measures. A composite CSR score is computed as the weighted average of five dimensions' scores, with weights of 30%, 15%, 15%, 20% and 20%, respectively, and a maximum score of 100.⁷ Hexun CSR data are adopted by prominent researchers in the field (e.g., Zhao and Xiao, 2019).

Social capital is measured at the provincial level according to the results of the China General Social Survey (CGSS), conducted jointly by HKUST's Survey Research Center and the Sociology Department of the People's University of China. The CGSS is the first nationwide, comprehensive and continuous academic survey project. The survey investigates the changing relationships between the social structure and the quality of life in urban and rural China. The survey researchers collect quantitative data about measures of the social structure, its stability and its change; the quality of life, objective and subjective; and the underlying mechanisms linking the social structure and quality of life of people in China. In particular, the 2003 and 2010⁸ CGSS measures the degree to which individuals trust strangers, and the survey results are widely adopted by studies on social capital (e.g., Cao et al., 2016; Wu et al., 2014). The 2003 CGSS covers 28 provinces, and the question asked was "In general, do you trust strangers? (1) Very much not; (2) not; (3) neutral; (4) yes; (5) very much yes." The 2010 CGSS

⁷ Based on the evaluation criteria of Hexun, a firm could obtain a negative score if its CSR concern points are greater than its CSR strength points.

⁸ The CGSS survey was also conducted in 2005, 2006 and 2008. The 2006 and 2008 CGSS did not include survey questions related to trust to strangers. The 2005 CGSS asked the question "in normal social interaction/communication which does not involve monetary benefits, do you think you can trust quite a few people or not?" This question is very different from the questions asked in the 2003 and 2010 CGSSs. Therefore, our study does not use the CGSS data from 2005, 2006 and 2008.

covers 31 provinces, and the question asked was “Generally speaking, do you agree that, in this society, most of the people are trustworthy? Five options include (1) completely do not agree; (2) somewhat do not agree; (3) neutral; (4) somewhat agree; (5) completely agree.” Each of the responses (1) to (5) is assigned scores of one to five, respectively, and the social trust score for each province is calculated using the weighted average score of the province, where the weights are the number of responses. A higher score represents a higher level of social trust/capital. This study adopts the average score of the 2003 and 2010 scores for each province to measure the social capital level of the region (*TRUST*).

3.2 Model specifications

To examine the relationship between executive pay restriction and CSR, we use the following baseline regression:

$$CSR = \alpha + \beta_1 RES + \beta_2 SIZE + \beta_3 ROA + \beta_4 LEV + \beta_5 AGE + \beta_6 SHARE1 + \beta_7 DUAL + \beta_8 IND + \beta_9 BOARD + \beta_{10} IC + \varepsilon \dots \dots \dots (1)$$

where *CSR* stands for CSR performance and *RES* is executive pay restriction, both of which are defined in the last section. Firm-year observations are used for regression analysis, while subscripts are omitted for simplicity. We also control for a set of common variables following previous research (e.g. Barnea and Rubin, 2010; Olitzky, 2001). Larger firms are found to engage in more and better social performance initiatives due to their greater visibility (Chen and Metcalf, 1980). We measure the firm size (*SIZE*) as the natural logarithm of the total assets. Leverage gauges the influence of creditor power in the existing literature and has an ambiguous relationship with CSR performance. Firm performance (*ROA*) is measured as the ratio of earnings before interest and taxes to total assets. Waddock and Graves (1997) find that firms’ financial performance is positively associated with their social performance and argue that more profitable firms enjoy more organizational slack and are thus more likely to invest in CSR

activities. In addition, it is argued that creditors will support CSR engagement to guard against irresponsible risk taking (Roberts, 1992). Alternatively, creditors may discourage over-investment in CSR by insiders (Barnea and Rubin, 2010). Leverage (*LEV*) is the ratio of total liabilities to total assets. Firm age is found to be positively related to CSR performance in previous studies (e.g. Roberts, 1992). The argument is that older firms' reputation and involvement in CSR activities are more entrenched, thus raising stakeholders' expectations of further engagement in CSR activities. We control for firm age by *AGE*, measured as the natural logarithm of the number of years since a firm's inception.

Furthermore, ownership concentration is believed to be negatively related to CSR performance in developed countries as a more dispersed ownership structure broadens the demand from investors, including those concerned with CSR activities (Ullmann, 1985). However, Li and Zhang (2010) find a positive relationship between ownership concentration and CSR performance in Chinese SOEs because high state ownership exerts pressure on firms to pursue social and political objectives that help to improve CSR. We control for ownership concentration with *SHARE1*, measured as the proportion of shares held by the largest shareholder. Adams et al. (2005) report that a powerful CEO may be able to pursue a CSR agenda with ease. Therefore, we control for CEO power with *DUAL*, measured using a dummy variable that equals one if the CEO of a firm also serves as the chairman of the board of directors. *IND* is the proportion of independent directors because of the positive effect of independent directors on CSR performance (Johnson and Greening, 1999). Since a larger board implies greater diversity in the background and expertise of board members, which helps to facilitate CSR engagement (Lau et al., 2016), we predict a positive relationship between board size and CSR performance. Board size (*BOARD*) is measured as the natural logarithm of the number of directors on the board. Industry and year dummies are used to control for the unobserved industry- and year-specific characteristics. Lastly, internal control strength (*IC*) is

also controlled for because strong internal control is reported to enhance firms' CSR (Adams, 2002; Pirvu et al., 2018). Internal control strength is measured using Dibo's internal control index, developed by the Shenzhen Dibo Internal Control Database based on the internal control integrated framework of the Committee of Sponsoring Organization (COSO).⁹ To run the regressions, we cluster the standard errors by firms to control for potential heteroskedasticity and autocorrelation problems and to provide robust standard error estimation with reliable t-statistics (Gow et al., 2010).

Then, we examine the mediating effect of social capital on the relationship between CSR performance and pay restriction as conjectured in H2. We first calculate the median of the social capital scores of all the provinces. A dummy variable, TRUST, takes the value of one if the province in which a firm resides has an above-the-median index score and zero otherwise. Then, we expand Equation (1) to include *Trust* and the interactive term, *Trust*RES*. A positive coefficient for *Trust*RES* would provide support for H2. To test H3, we use a similar approach by employing an interactive term between pay restriction and a dummy variable of managerial ownership (*MSH*RES*) in which firms with a high level of managerial ownership (*MSH*) take the value of one; otherwise, firms take the value of zero. Based on H3, we expect a positive coefficient for *MSH*RES*.

4. Empirical results

4.1 Sample and data descriptive statistics

All listed SOEs on both the Shanghai and the Shenzhen Stock Exchange are selected because the government pay-on-say policy is only applicable to SOEs. The sample period is from 2010 to 2018. We select 2010 as the first year of the sample period since this is the first

⁹ The Dibo database website is <http://irmd.dibcn.com:8082/irmd/common/login.jsp>; the "Internal Control Integrated Framework" developed by the Committee of Sponsoring Organization (COSO) intends to help businesses establish, assess and enhance their internal control. The framework consists of five components of internal control, namely the control environment, risk assessments, control activities, information and communications, and monitoring (Deloitte, 2017).

year for which the CSR data are available. After eliminating firm-year observations from the small and medium enterprises' listing boards, financial companies and companies with missing data to calculate the variables, we have 5641 SOE firm-year observations for analysis. Table 2, Panel A presents the descriptive analysis results. By construction, the variable *RES1* has a positive value, and the greater the value, the higher the restriction. *RES2* and *RES3* show negative values because all the raw values are multiplied by -1 for easy interpretation so that a higher value, that is, a less negative value, suggests a greater level of pay restriction. *RES2* has a mean value of -8.0465, suggesting that the average compensation of the top three executives is eight times the average salary of normal employees. Our raw data also include 3784 non-SOE observations, which we use during our analysis for computing the industry-year means of the pay gap in the non-SOEs. Using the 3784 observations, we also compute the basic statistics of the pay gaps in non-SOEs. They show that the mean of their pay gap ratio calculated per industry-year (*PayGap_Non_SOE*), that is, the average compensation of the top three executives to the average salary of normal employees, is 10.425, which is greater than 8.0465 – the average pay gap ratio of SOEs. The top shareholding (*SHARE1*) is roughly 39%. In addition, around 10% of boards have a dual chair and CEO (*DUAL*). The proportion of independent directors (*IND*) is around 37%.

[Table 2 about here]

Panel B of Table 2 reports the correlation matrix. *RES1*, *RES2* and *RES3* are highly correlated, as expected. *CSR* is negatively and significantly associated with all three RES measures, which is in accordance with our expectations. In addition, *CSR* is positively correlated with some firm characteristics, including firm size (*SIZE*), financial performance (*ROA*), largest shareholding (*SHARE1*), director independence (*IND*), board size (*BOARD*) and internal control strength (*IC*). In contrast, *CSR* is negatively correlated with leverage (*LEV*) and age (*AGE*).

4.2 Empirical results

4.2.1 Pay restriction and CSR – baseline analysis

Table 3 presents the baseline regression results of Equation (1), which tests the effect of pay restriction on CSR performance.¹⁰ With CSR performance as the dependent variable, columns (1)–(3) show the regression results of the three measures of executive compensation restriction (*RES1*, *RES2* and *RES3*) as the variable of interest. The relationship between pay restriction and CSR performance is consistently negative and statistically significant (coefficients -0.1948, -0.2191 and -3.2894; t-statistics -4.9089, -5.4070 and -9.6846, respectively). The results are meaningful in economic terms too. The CSR performance (*CSR*) has a mean of 29.8370, and the standard deviation of the first measure of pay restriction, *RES1*, is 6.2707. Using the coefficient for *RES1* reported in column (1), that is, -0.1948, we can calculate that a 1 standard deviation increase in *RES1* leads to approximately a 4 per cent ($[0.1948 \times 6.2707] / 29.8370$) decrease in CSR performance around its mean. The corresponding values for *RES2* and *RES3* are approximately 5 and 8 per cent, respectively. Thus, our results support H1.

[Table 3 about here]

The findings for the control variables are broadly in line with the expectations. In particular, the coefficients for firm size (*SIZE*), financial performance (*ROA*) and internal control strength (*IC*) are positive and significant, while leverage (*LEV*) and firm age (*AGE*) are negatively related to CSR performance. Other control variables are insignificantly associated with CSR performance.

¹⁰ Before conducting the baseline model analysis, we first regress CSR on top executives' pay or the CEO's pay to test whether their compensation is indeed positively related to CSR – the underlying assumption used for our proposition. We find strong evidence that the compensation received by top executives or the CEO alone in Chinese SOEs is positively associated with CSR – a finding that is consistent with this proposition and the prior literature in other countries (e.g., McGuire et al., 2003). We acknowledge the suggestion made by the anonymous reviewer.

4.2.2 Is the effect of the pay restriction on CSR driven by regulation?

The pay restriction imposed on SOEs but not on non-SOEs is akin to a natural experiment, providing a setting in which to draw definitive inference about the causal effect of pay restrictions. Hence, we conduct difference-in-difference (DiD) tests using the treatment sample – SOEs and the control sample consisting of non-SOEs. Since the pay restriction is only applicable to SOEs and not to non-SOEs, the DiD tests can determine whether the change in CSR is associated with only SOEs in the post-regulation period in comparison with non-SOEs. Nevertheless, selecting SOEs and non-SOEs as the treatment and control samples is not without drawbacks because these two types of firms may have innate differences in firm characteristics. To overcome this problem, we perform propensity score matching (PSM) to match SOEs with non-SOEs to eliminate the differences in firm characteristics. Then, we conduct DiD tests with the matched sample observations. The results are reported in Table 4.

[Table 4 about here]

Panel A of Table 4 shows the PSM matching between the treatment and the control sample. To ensure effective matching, we employ nearest neighbour (NN) matching with replacement using a small caliper (Shipman et al., 2017) because a tight caliper leads to greatly reduced bias and closer matches (Lunt, 2014). The pre- and post-matching comparisons show that the differences in firm characteristics between the SOE and the non-SOE samples are effectively eliminated post-matching, showing insignificant t-statistics for the set of control variables post-matching. Then, we conduct multivariate DiD analyses using the 4522 matched treatment and control sample observations. The DiD test estimates the effect of the pay restriction policies (the treatment) on the subjects' CSR activities. To this end, we test the difference between the SOEs and the non-SOEs in their CSR levels from the pre-treatment period to the post-treatment period. We select 2014 as the cut-off regulation year because the 2014 government say-on-pay policy is well enforced and complied with by SOEs. The 2014

policy was enacted and publicly announced on 29 August 2014 but took effect on 1 January 2015. Therefore, we conduct the difference-in-difference test identifying the pre-treatment period as 2010–2014 and the post-treatment period as 2015–2018.¹¹

The DiD analysis results, as presented in Table 4, Panel B, show consistently negative coefficients for *SOE*Post* for the estimation without controlling for firm characteristics, industry and year fixed effects (column 1), the estimation test controlling for industry and year fixed effects (column 2) and the estimation controlling for firm characteristics, industry and year fixed effects (column 3) (coefficients -2.0517, -1.9372 and -2.2895; t-statistics -1.6754, -1.7086 and -2.2824; $p < 0.10, 0.10$ and 0.05 , respectively).

4.3 Conditional analysis of the moderating effects of social capital and internal control

To test H2, we run regressions using an expanded Equation (1) in which *Trust* and the interactive term, *Trust*RES*, are included along with other control variables. Columns (1)–(3) in Table 5 show the results when *RES1*, *RES2* and *RES3* are used for the analysis, respectively. The results clearly show a positive coefficient for *Trust*RES* across the three columns, providing support for H2 (coefficients 0.2049, 0.2190 and 0.9754; t-statistics 2.7276, 2.9024 and 1.6942; $p < 0.01, 0.01$ and 0.10 , respectively). Thus, the results suggest that the pay restriction is less harmful to firms' CSR activities in the regions where the level of social capital is high, although the pay restriction measures (*RES1*, *RES2* and *RES3*) still demonstrate a persistently negative impact on CSR (coefficients -0.2535, -0.2799 and -3.5112; t-statistics -5.3778, -5.9126 and -7.9487; $p < 0.01$, respectively).

[Table 5 about here]

¹¹ We also conduct a sensitivity test by excluding the sample observations in 2014 for an alternative DiD test because the 2014 policy was enacted and publicly announced on 29 August 2014 and thus firms may anticipate and react to the policy earlier than its effective date, introducing noise into the cut-off year. Our results suggest that excluding the 2014 observations does not alter our findings qualitatively.

For the H3 testing, we use a similar approach, employing an interactive term between the pay restriction and a dummy variable of managerial ownership (*MSH*RES*) that takes the value of one for firms with a high level of managerial ownership (*MSH*) and zero otherwise. The results reported in columns (4)–(6) in Table 5 show a positive coefficient for *MSH*RES* for all the RES measures (coefficients 0.3097, 0.3328 and 3.2347; t-statistics 3.3592, 3.7272 and 3.3437; $p < 0.01$, respectively). Therefore, the results support our proposition in H3 that managerial shareholding aligns the interest of managers with that of other stakeholders and thus offsets the demoralizing effect of the pay restriction on firms' CSR engagement.

4.4 Additional and sensitivity tests

Although the restriction on executive pay in SOEs is mandatory, we cannot rule out the possibility that firms do not comply with the regulation completely and that the actual level of restriction that firms impose on their executives' pay is determined at their discretion, even though the enforcement has been tightened since 2014. If this is the case, the level of pay restriction will vary and certain firm-level characteristics affecting executives' pay may also explain firms' CSR undertaking – the problem of omitted variable or self-selection. To validate the main results reported in Table 3 and address the concern about endogeneity, we first conduct a two-stage least squares (2SLS) test in Panel A of Table 6. This should also alleviate the concern about reverse causality or model misspecification in the OLS (Wooldridge, 2002).

In the first stage, we use the political power distance (*DISTANCE*) as an instrument for our 2SLS analysis. The political power distance measures the control of the government over a firm in its compliance with government policies, in this case the pay restriction regulation. Specifically, we measure the power distance with a score manually coded from one to eight, where one stands for direct control by a government agency, for example through a state asset management agency, of an SOE's ownership. In the case in which the government's ownership control is exerted through a pyramidal structure by inserting one or more intermediate firms,

this variable takes values ranging from two to eight depending on the layers of the intermediate firms. The value of two is taken if there is only one intermediate firm, for example a parent SOE or a firm controlled by a state asset management agency. When there are more layers of intermediaries, this instrumental variable takes increasingly greater values to reflect the political power distance. We expect this variable to be negatively and significantly associated with the pay restriction because the larger the distance, the less power the government has over firms to comply with its regulations. The first-stage results, as reported in section I of Table 6, Panel A, conform to this expectation. Then, the second-stage 2SLS regression results reported in section II of Table 6, Panel A, show consistent findings on the negative effect of RES1–3 on CSR. Thus, the results suggest that endogeneity cannot explain away the documented relationship between pay restriction and CSR performance.

[Table 6 about here]

Then, Heckman two-stage tests are conducted to investigate further whether the main results are sensitive to self-selection bias as one form of endogeneity. The results are reported in Table 6, Panel B. In the first stage, shown in section I of this panel, we regress the dummy variable – high pay restriction, which is defined based on the sample median – on *DISTANCE* and firm-level controls and then calculate the lambda based on the estimates of the first-stage regression. We then complete the second-stage regression using an expanded Equation (1) including the lambda calculated. The results, reported in section II of Panel B, Table 6, still show negative and significant coefficients for *RES1*, *RES2* and *RES3*.

In addition, as mentioned earlier, the previous CEO compensation CSR literature is plagued by the problem of reverse causality, which makes it difficult to draw a concrete conclusion on the causal effect. In the previous section, we conducted the DiD tests using the quasi-experimental setting in which the pay restriction is imposed exogenously by the government policy. To alleviate further the concern about reverse causality in our estimation

of Equation (1), in which pay restriction measures are used, we use a straightforward technique for controlling for reverse causality by regressing CSR performance on the lagged pay restriction variables. The results (untabulated) are largely consistent with those reported in Table 3. The lagged *RES1*, *RES2* and *RES3* consistently show a negative effect on CSR performance. Collectively, the main results withstand a batch of sensitivity tests to address the issues of endogeneity and we continue to find a negative effect of the pay restriction on CSR performance.

CSR activities conducted by Chinese firms are also influenced by executives' non-monetary incentives, such as political connection and managerial perks.¹² It is reported that Chinese firms conduct CSR as a political legitimacy strategy, and thus firms with political connections tend to have better engagement in CSR than those without (e.g., Qian & Chen, 2020; Zhao, 2012). Furthermore, perks consumed by managers such as business travel expenses and business entertainment expenses serve as the substitute for monetary compensation and create great agency costs (Gul, Cheng, & Leung, 2011), which may deprive a firm's resources resulting in a low level of CSR engagement. To address these concerns, we conduct a set of sensitivity analyses by adding political connection (PCON) and perks (PERK) as additional controls in the regression analyses. Political connection is a dummy variable taking the value of 1 if executives are politically connected, and zero otherwise.¹³ Perks is measured as the perk expenses deflated by sales revenue following Gul et al. (2011). The untabulated results of the regression analyses continuously support the negative effect of *RES* on *CSR* as predicted in H1. Also, H2 and H3 are still supported. Additionally, the results show

¹² We appreciate the comment made by the editor and reviewer on this point.

¹³ This measurement of political connection follows Wu, Li, Ying, and Chen (2018). As we focus on top 3 executives, the dummy variable, political connection, takes the value of 1 if any one of them is qualified as politically connected, that is, if he or she previously held a position in the Communist Party Committee, the government, the People's Congress, the People's Political Consultative Conference, the People's Court, the People's Procuratorate, the People's Bank, or the military or if he or she currently or previously held membership in the People's Congress or the People's Political Consultative Conference.

positive coefficients on political connection but negative coefficients on perks, suggesting that firms with political connection tends to have great CSR engagement whereas perk consumption adversely affects CSR activities.

Last but not least, we conduct additional tests to determine whether there is a discernible difference in the effect of the pay restriction on different aspects of CSR engagement. Hexun's CSR index consists of five dimensions, specifically (i) shareholder; (ii) employee; (iii) supplier, customer and consumer; (iv) environmental; and (v) social responsibility. Based on these five dimensions, we conduct categorical analysis regressing the score of each category on the measures of *RES* and the control variables. The results (untabulated) suggest that the pay restriction has reduced top executives' incentives to conduct all types of CSR activities except for their engagement in the environment.

5. Discussion and conclusion

Using the implementation of a series of government say-on-pay policy settings, this study examines the effect of the pay restriction imposed by the Chinese government on listed SOEs' CSR performance. In general, we find that CSR performance is lower in firms with a high level of pay restriction. This main finding withstands the DiD tests and a batch of endogeneity tests, providing conclusive evidence on the causal effect relationship between pay restriction and CSR performance. Meanwhile, we reveal that the negative effect of the pay restriction is mitigated by high social capital and managerial ownership.

Differing from shareholders' say-on-pay schemes, our study focuses on a government say-on-pay regime. Our research is timely and relevant, addressing an important issue in the corporate compensation debate concerning whether government intervention in executives' pay level has a social impact beyond the economic impact, as reported by the recently emerging literature on government say-on-pay policies (Jiang and Zhang, 2017; Su et al., 2020). Adding

to this stream of literature, our study advocates the inefficiency of regulated pay from a corporate social performance perspective.

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Table 1: Variable definitions

Variable	Definition	Computation
DV: CSR	CSR performance	The overall rating of a firm's CSR activities as depicted in its CSR report and annual report. The rating is extracted from the Hexun CSR database at https://www.hexun.com .
$RES1$	Compensation restriction	$RES1_{i,j,t} = AveragePayGap_Non_SOE_{j,t} - PayGap_{i,j,t}$ where $AveragePayGap_Non_SOE_{j,t}$ is the average pay gap, calculated for industry j in year t using non-SOEs. $PayGap$ is the ratio of the average compensation of the top three executives to the average salary of normal employees, calculated for each SOE sample observation.
$RES2$	Compensation restriction	The ratio of the average compensation of the top three executives to the average salary of employees in an SOE; the value is then multiplied by -1 so that a greater $RES2$ indicates that a firm's top executives' compensation is subject to greater restriction.
$RES3$	Compensation restriction	The natural logarithm of the difference between the average compensation of the top three executives and the average cash compensation of all the executives; the value of $RES3$ is then multiplied by -1 so that a greater $RES3$ indicates that a firm's top executives' compensation is subject to greater restriction.
$SIZE$	Firm size	The natural logarithm of the total assets.
ROA	Firm performance	The ratio of earnings before interest and taxes to total assets.
LEV	Leverage	The ratio of total liabilities to total assets.
AGE	Firm age	The natural logarithm of the number of years since a firm's inception.
$SHARE1$	Top shareholding	The proportion of shares held by the largest shareholder.
$DUAL$	CEO-chairman duality	A dummy variable that equals one if a firm's CEO also serves as the chairman of the board.
IND	Independent directors	The proportion of independent directors.
$BOARD$	Number of directors	The natural logarithm of the number of directors on the board.
IC	Internal control	The strength of internal control based on the data retrieved from the Shenzhen Dibo Internal Control Database at http://irmd.dibcn.com:8082/irmd/common/login.jsp .
$TRUST$	Social capital	The social capital score measured at the provincial level according to the results of the China General Social Survey (CGSS).
$PCON$	Political connection	A dummy variable that equals one if executives are politically connected, and zero otherwise
$PERK$	Perks of management	Perks consumed by managers such as business travel expenses and business entertainment expenses

Table 2: Descriptive statistics and correlation matrix
Panel A: Descriptive statistics

Variable	Obs.	Mean	Median	Std	25th	75th
<i>CSR</i>	5641	29.8370	23.8200	20.2667	16.8100	37.6500
<i>RES1</i>	5641	2.3792	3.8919	6.2707	0.6820	6.1825
<i>RES2</i>	5641	-8.0465	-5.9422	6.2059	-9.1895	-4.2461
<i>RES3</i>	5641	-12.8580	-12.8055	0.7369	-13.2449	-12.3976
<i>AveragePayGap_Non_SOE</i>	3784	10.4257	9.8976	9.8678	5.8089	13.6189
<i>SIZE</i>	5641	22.9252	22.7708	1.3724	21.9257	23.7586
<i>ROA</i>	5641	0.0316	0.0279	0.0475	0.0102	0.0519
<i>LEV</i>	5641	0.5303	0.5426	0.1946	0.3864	0.6817
<i>AGE</i>	5641	2.7080	2.8384	0.5056	2.5999	3.0166
<i>SHARE1</i>	5641	0.3867	0.3754	0.1549	0.2645	0.5018
<i>DUAL</i>	5641	0.0963	0.0000	0.2950	0.0000	0.0000
<i>IND</i>	5641	0.3702	0.3333	0.0558	0.3333	0.3750
<i>BOARD</i>	5641	2.2137	2.1972	0.1985	2.1972	2.3026
<i>IC</i>	5641	6.3859	6.7599	1.7400	6.2051	7.1467

Panel B: Correlation matrix

	<i>CSR</i>	<i>RES1</i>	<i>RES2</i>	<i>RES3</i>	<i>SIZE</i>	<i>ROA</i>	<i>LEV</i>	<i>AGE</i>	<i>SHARE1</i>	<i>DUAL</i>	<i>IND</i>	<i>BOARD</i>	<i>IC</i>
<i>CSR</i>	1	-0.152***	-0.189***	-0.324***	0.301***	0.483***	-0.074***	-0.136***	0.168***	0.010	0.003	0.091***	0.398***
<i>RES1</i>	-0.172***	1	0.807***	0.605***	-0.196***	-0.163***	-0.013	-0.026**	0.120***	-0.048***	-0.015	-0.050***	-0.155***
<i>RES2</i>	-0.203***	0.943***	1	0.664***	-0.118***	-0.185***	-0.001	-0.009	0.149***	-0.072***	0.000	-0.035***	-0.184***
<i>RES3</i>	-0.260***	0.666***	0.684***	1	-0.333***	-0.308***	0.007	-0.135***	-0.001	-0.060***	-0.022	-0.089***	-0.238***
<i>SIZE</i>	0.279***	-0.222***	-0.186***	-0.352***	1	-0.023*	0.434***	-0.035***	0.267***	-0.021	0.142***	0.185***	0.266***
<i>ROA</i>	0.372***	-0.155***	-0.175***	-0.269***	0.023*	1	-0.428***	-0.060***	0.125***	-0.002	-0.052***	0.018	0.371***
<i>LEV</i>	-0.049***	-0.045***	-0.039***	-0.008	0.419***	-0.387***	1	0.002	0.019	0.005	0.054***	0.080***	0.029**
<i>AGE</i>	-0.158***	-0.006	-0.011	-0.047***	-0.105***	-0.087***	0.057***	1	-0.237***	0.011	-0.022*	-0.108***	-0.124***
<i>SHARE1</i>	0.138***	0.138***	0.151***	0.029**	0.275***	0.113***	0.01	-0.291***	1	-0.096***	0.065***	-0.013	0.118***
<i>DUAL</i>	-0.001	-0.059***	-0.072***	-0.066***	-0.014	0.001	0.011	0.022	-0.100***	1	0.035***	-0.062***	-0.011
<i>IND</i>	0.025*	0.005	0.011	-0.015	0.160***	-0.035***	0.062***	-0.038***	0.076***	0.052***	1	-0.288***	0.037***
<i>BOARD</i>	0.108***	-0.078***	-0.076***	-0.099***	0.190***	0.027**	0.074***	-0.089***	-0.01	-0.056***	-0.355***	1	0.072***
<i>IC</i>	0.306***	-0.138***	-0.155***	-0.182***	0.186***	0.311***	-0.040***	0.125***	0.035***	0.009	0.038***	0.052***	1

Note: This table reports the descriptive statistics and correlation matrix of the variables used to test the hypotheses. The figures in the left half of the table represent the Pearson correlation coefficients, and those in the right half of the table are the Spearman correlation coefficients. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels (two-tailed test), respectively. *AveragePayGap_Non_SOE* is the average pay gap ratio of non-SOEs per industry-year.

Table 3: Pay restriction and CSR performance (H1 testing)

DV = CSR	(1)	(2)	(3)
<i>RES1</i>	-0.1948** (-4.9089)		
<i>RES2</i>		-0.2191*** (-5.4070)	
<i>RES3</i>			-3.2894*** (-9.6846)
<i>SIZE</i>	4.7432*** (21.6032)	4.7012*** (21.3378)	4.3229*** (19.4805)
<i>ROA</i>	107.1213*** (19.5759)	106.4834*** (19.4601)	99.7551*** (18.1731)
<i>LEV</i>	-13.1354*** (-9.2808)	-13.1309*** (-9.2858)	-12.3872*** (-8.7674)
<i>AGE</i>	-1.9236*** (-4.2609)	-1.8982*** (-4.2086)	-1.9181*** (-4.2872)
<i>SHARE1</i>	0.5833 (0.3629)	0.8181 (0.5093)	0.8153 (0.5203)
<i>DUAL</i>	-0.0773 (-0.1078)	-0.1068 (-0.1489)	-0.3328 (-0.4671)
<i>IND</i>	-1.8541 (-0.4093)	-1.6988 (-0.3753)	-2.1575 (-0.4796)
<i>BOARD</i>	1.0972 (0.8826)	1.0954 (0.8812)	0.4572 (0.3680)
<i>IC</i>	1.0843*** (8.6579)	1.0796*** (8.6355)	1.0513*** (8.4724)
<i>Intercept</i>	Included	Included	Included
<i>Industry</i>	Included	Included	Included
<i>Year</i>	Included	Included	Included
<i>Adjusted R²</i>	0.3896	0.3902	0.3963
<i>F-value</i>	111.08***	111.70***	114.89***
<i>Observations</i>	5641	5641	5641

Note: This regression tests the effect of the pay restriction (*RES*) on CSR performance (*CSR*). The t values are presented in parentheses. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels (two-tailed test), respectively. Continuous variables are winsorized at the 1% level. The variables are defined in Table 1.

Table 4: Difference-in-difference (DiD) test of the change in CSR between SOEs and non-SOEs from the pre-treatment to the post-treatment period
Panel A: Differences in firm characteristics between the treatment sample (SOEs) and the control sample (non-SOEs) pre- and post-propensity score matching (PSM)

Variable	Pre-matching			Post-matching		
	Treatment sample	Control sample	t-statistic	Treatment sample	Control sample	t-statistic
<i>SIZE</i>	22.9252	22.1936	-27.41***	22.559	22.5	1.58
<i>ROA</i>	0.0316	0.0464	14.07***	0.0359	0.0355	0.26
<i>Lev</i>	0.5303	0.4464	-20.69***	0.5035	0.5015	0.34
<i>Age</i>	2.7080	2.2314	-32.04***	2.7299	2.7406	-0.77
<i>SHARE1</i>	0.3867	0.3287	-18.29***	0.3282	0.3240	0.96
<i>DUAL</i>	0.0963	0.2852	24.88***	0.1659	0.1619	0.36
<i>IND</i>	0.3702	0.3721	1.75**	0.3694	0.3696	-0.11
<i>BOARD</i>	2.2137	2.1269	-21.57***	2.1504	2.1569	-1.18
<i>IC</i>	6.4742	6.3210	-4.57***	6.331	6.312	0.39

Panel B: DiD results of various specifications

DV = CSR	(1)	(2)	(3)
<i>SOE*Post</i>	-2.0517*	-1.9372*	-2.2895**
	(-1.6754)	(-1.7086)	(-2.2824)
<i>Post</i>	-8.3905***	-9.2076***	-10.9818***
	(-10.1185)	(-6.9461)	(-10.2386)
<i>SOE</i>	3.9111***	3.7746***	3.6411***
	(3.7398)	(4.4203)	(4.2536)
<i>SIZE</i>			5.4234***
			(22.3664)

<i>ROA</i>			110.5660***
			(21.6026)
<i>LEV</i>			-8.9388***
			(-5.8644)
<i>AGE</i>			-1.0156**
			(-1.9823)
<i>SHARE1</i>			0.8295
			(0.4490)
<i>DUAL</i>			-0.2245
			(-0.3528)
<i>IND</i>			1.9122
			(0.3388)
<i>BOARD</i>			0.9683
			(0.6175)
<i>IC</i>			0.8670***
			(5.7990)
<i>Intercept</i>	Included	Included	Included
<i>Industry dummies</i>	No	Included	Included
<i>Year dummies</i>	No	Included	Included
<i>Observation (N)</i>	4522	4522	4522
<i>Adjusted R²</i>	0.0664	0.1301	0.3930
<i>F-value</i>	84.20***	21.18***	70.21***

Note: The t values are presented in parentheses. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels (two-tailed test), respectively. *Post* is a dummy variable taking the value of one for observations in 2015–2018 and zero otherwise. The other variables are defined in Table 1.

Table 5: The effect of the pay restriction on CSR conditional on social capital (H2 testing) and managerial ownership (H3 testing)

<i>DV = CSR</i>	(1)	(2)	(3)	<i>DV = CSR</i>	(4)	(5)	(6)
<i>RES1</i>	-0.2535*** (-5.3778)			<i>RES1</i>	-0.2280*** (-5.1897)		
<i>RES2</i>		-0.2799*** (-5.9126)		<i>RES2</i>		-0.2618*** (-5.8026)	
<i>RES3</i>			-3.5112*** (-7.9487)	<i>RES3</i>			-3.4480*** (-9.6903)
<i>Trust * RES1</i>	0.2049*** (2.7276)			<i>MSH * RES1</i>	0.3097*** (3.3592)		
<i>Trust * RES2</i>		0.2190*** (2.9024)		<i>MSH * RES2</i>		0.3328*** (3.7272)	
<i>Trust * RES3</i>			0.9754* (1.6942)	<i>MSH * RES3</i>			3.2347*** (3.3437)
<i>Trust</i>	-2.7090 (-1.5170)	-0.4331 (-0.6027)	10.8436 (1.4661)	<i>MSH</i>	3.0335*** (3.3712)	6.4067*** (4.6490)	45.1300*** (3.4896)
<i>SIZE</i>	4.6308*** (20.9085)	4.6001*** (20.7120)	4.2598*** (19.0195)	<i>SIZE</i>	4.7729*** (21.7202)	4.7385*** (21.4914)	4.3684*** (19.6422)
<i>ROA</i>	108.2716*** (19.7819)	107.7785*** (19.6624)	101.1236*** (18.3396)	<i>ROA</i>	106.1218*** (19.3792)	105.4970*** (19.2666)	98.9899*** (18.0095)
<i>LEV</i>	-12.7361*** (-8.9855)	-12.7739*** (-9.0204)	-12.1399*** (-8.5764)	<i>LEV</i>	-13.0466*** (-9.2285)	-13.0268*** (-9.2211)	-12.3296*** (-8.7314)
<i>AGE</i>	-1.9107*** (-4.2462)	-1.8589*** (-4.1327)	-1.9199*** (-4.2894)	<i>AGE</i>	-1.6258*** (-3.5261)	-1.6122*** (-3.5032)	-1.7073*** (-3.7365)
<i>SHARE1</i>	0.0794 (0.0496)	0.2718 (0.1701)	0.4667 (0.2967)	<i>SHARE1</i>	1.1870 (0.7300)	1.3712 (0.8443)	1.0719 (0.6712)

<i>DUAL</i>	0.0412	0.0138	-0.2683	<i>DUAL</i>	-0.0696	-0.0774	-0.3530
	(0.0578)	(0.0192)	(-0.3780)		(-0.0974)	(-0.1083)	(-0.4965)
<i>IND</i>	-1.5863	-1.3823	-2.1013	<i>IND</i>	-1.8495	-1.8020	-2.3764
	(-0.3503)	(-0.3053)	(-0.4665)		(-0.4097)	(-0.3995)	(-0.5297)
<i>BOARD</i>	1.2469	1.2576	0.5742	<i>BOARD</i>	1.0027	0.9730	0.4183
	(1.0003)	(1.0084)	(0.4604)		(0.8075)	(0.7835)	(0.3369)
<i>IC</i>	1.0849***	1.0783***	1.0564***	<i>IC</i>	1.1013***	1.0961***	1.0652***
	(8.7243)	(8.6826)	(8.5182)		(8.7699)	(8.7444)	(8.5576)
<i>Intercept</i>	Included	Included	Included	<i>Intercept</i>	Included	Included	Included
<i>Industry</i>	Included	Included	Included	<i>Industry</i>	Included	Included	Included
<i>Year</i>	Included	Included	Included	<i>Year</i>	Included	Included	Included
<i>Adjusted R²</i>	0.3930	0.3937	0.3980	<i>Adjusted R²</i>	0.3916	0.3924	0.3978
<i>F-value</i>	108.26***	108.66***	109.88***	<i>F-value</i>	105.43***	106.06***	109.02***
<i>Observations</i>	5641	5641	5641	<i>Observations</i>	5641	5641	5641

Note: This regression tests the effect of the pay restriction (*RES*) on CSR performance (*CSR*) conditional on social capital. Social capital (*Trust*) is measured at the provincial level according to the results of the China General Social Survey (CGSS). *Trust* takes the value of one if the region where the firm operates has an above median social trust score and zero otherwise. The t-values are presented in parentheses. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels (two-tailed test), respectively. Continuous variables are winsorized at the 1% level. The other variables are defined in Table 1.

Table 6: Sensitivity tests to deal with the endogeneity concern
Panel A: Two-stage least squares (2SLS) regression analysis
Section I: First-stage regressions

	<i>RES1</i>	<i>RES2</i>	<i>RES3</i>
<i>Instrument: DISTANCE</i>	-0.4569*** (-5.36)	-0.4593*** (-5.44)	-0.0503*** (-6.11)
<i>All the variables in the main test</i>	Yes	Yes	Yes
<i>Intercept</i>	Included	Included	Included
<i>Industry dummies</i>	Included	Included	Included
<i>Year dummies</i>	Included	Included	Included
<i>Observation (N)</i>	5641	5641	5641
<i>Adjusted R²</i>	0.1992	0.2237	0.3297

Note: The t-values are presented in parentheses. ***, ** and * represent the significance levels of 1%, 5% and 10%. The first-stage regression uses political power distance (*DISTANCE*) as an instrument. *DISTANCE* measures the power distance between the government and a firm subject to the pay restriction policy. It is manually coded with a score from one to eight, where one stands for direct control by a government agency, for example through a state asset management agency, of an SOE's ownership. If the control is exerted by the government through a pyramid consisting of one or more intermediate companies, this variable takes the values of two to eight, depending on the layers of the intermediate firms. In this case, the firm should intend to implement the government policies with due diligence. In contrast, a lower score is granted to a firm that is indirectly controlled by the government agencies, rendering a slacker implementation of the government policies. The longer the hierarchical distance, the weaker the political power. Continuous variables are winsorized at the 1% level. The other variables are defined in Table 1.

Section II: Second-stage regressions

<i>DV = CSR</i>	(1)	(2)	(3)
<i>RES1</i>	-1.7765*** (-3.5546)		
<i>RES2</i>		-1.7670*** (-3.5797)	
<i>RES3</i>			-16.1427*** (-3.5659)
<i>Controls</i>	Included	Included	Included
<i>Intercept</i>	Included	Included	Included

<i>Industry dummies</i>	Included	Included	Included
<i>Year dummies</i>	Included	Included	Included
<i>Observation (N)</i>	5641	5641	5641
<i>Adjusted R²</i>	0.1978	0.2157	0.2498

Note: This table shows the 2SLS regression results. The t values are presented in parentheses. ***, ** and * represent the significance levels of 1%, 5% and 10%. Continuous variables are winsorized at the 1% level.

Panel B: Heckman test

Section I: First-stage probit model

Panel B: Heckman test to alleviate the concern about potential self-selection bias

Section I: First-stage probit model regression results

	<i>RES1</i>	<i>RES2</i>	<i>RES3</i>
<i>DV = Dummy_RES</i>	(1)	(2)	(3)
<i>DISTANCE</i>	-0.0756*** (-4.4607)	-0.0741*** (-4.3824)	-0.0934*** (-5.3820)
<i>Other controls</i>	Included	Included	Included
<i>Industry</i>	Included	Included	Included
<i>Year</i>	Included	Included	Included
<i>Pseudo R²</i>	0.0627***	0.0614***	0.1137***
<i>Observations</i>	5641	5641	5641

Note: The t values are presented in parentheses in the first-stage regression. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels (two-tailed test), respectively. *Dummy_RES* is a dummy variable taking the value of one if *RES* is above the sample median and zero otherwise. Political power distance (*DISTANCE*) is defined in Panel A of Table 6. Continuous variables are winsorized at the 1% level. The other variables are defined in Table 1.

Section II: Second-stage regression testing the effect of the pay restriction on CSR performance with IMR

<i>DV = CSR</i>	(1)	(2)	(3)
<i>RES1</i>	-0.1753*** (-4.4476)		
<i>RES2</i>		-0.1981***	

		(-4.9141)	
<i>RES3</i>			-3.0944***
			(-9.1168)
<i>IMR</i>	26.7623***	25.6563***	20.8503***
	(4.1338)	(3.8983)	(4.2465)
<i>Controls</i>	Included	Included	Included
<i>Intercept</i>	Included	Included	Included
<i>Industry</i>	Included	Included	Included
<i>Year</i>	Included	Included	Included
<i>Adjusted R²</i>	0.3915	0.3919	0.3983
<i>F-value</i>	110.39***	110.73***	115.17***
<i>Observations</i>	5641	5641	5641

Note: This table shows the analysis results of the second-stage regression of the Heckman test. The t-values are presented in parentheses. ***, ** and * represent the significance levels of 1%, 5% and 10%. Continuous variables are winsorized at the 1% level. The other variables are defined in Table 1.