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Do Chinese state subsidies affect voluntary corporate social responsibility disclosure?

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ABSTRACT

This paper examines whether state subsidy is a determinant of the voluntary corporate social responsibility (CSR) disclosures of Chinese listed firms. Using archival data from a sample of manufacturing firms listed on the Shanghai and Shenzhen Stock Exchanges from 2008 to 2012, we find that state subsidies have a material influence on CSR disclosure choice beyond the variables that commonly figure in Western models. This effect is concentrated among the non-state-owned enterprises (NSOEs) rather than the state-owned enterprises (SOEs), and especially when subsidies are granted through non-tax based rather than tax-based channels. Further analysis also suggests that these findings are more pronounced among firms domiciled in regions with a higher level of corruption. Our findings shed light on how political cost considerations influence firms' decisions to disclose CSR information in China where government intervention in the economic and business environment is pervasive.

1. Introduction

This study examines if state subsidies influence the voluntary corporate social responsibility (CSR) disclosures of Chinese listed firms. The determinants of CSR disclosure have been regularly discussed in the Western literature. However, there are relatively few papers that address this issue by focusing on institutional factors specific to transitional economies such as China, which is evolving from a centrally planned to a market oriented system. We believe that China is especially interesting to study with regard to CSR disclosures for two reasons. First, although China is now the manufacturing center of the world it is also facing significant environmental and social issues. Second, the political economy of China is materially different from the traditional Western economies for which most of the existing research on CSR has been carried out. Unlike existing studies, we pay special attention to the role of subsidies granted by the government, and we highlight the differential impact of subsidies offered through tax and non-tax channels, which are interesting features of the Chinese state capitalism that distinguishes firms in China from their Western peers.

State subsidies are pervasive among Chinese listed firms (e.g., Allen et al., 2005; Lee et al., 2014). For example, a report by the government official Xinhua news agency reveals that up to 88% of Chinese listed firms were granted state subsidies in 2014, with a total amount of nearly 32.26 billion yuan (over 5 billion US dollars).[1] Existing studies provided evidence that state subsidies generate a material impact on the market value (e.g., Chen and Wang, 2004; Lee et al., 2014) and the financial

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[1] http://www.ceweekly.cn/2014/0909/92091.shtml.

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reporting (Chen et al., 2008; He, 2016) of Chinese firms. Despite of this, the issue of state subsidies has not been examined by prior studies as a determinant of CSR disclosures in China (Li and Zhang, 2010; Marquis and Qian, 2013). Thus, our study fills this research gap and investigates whether Chinese state subsidies influence CSR disclosures, after controlling for the other determinants that have been identified by existing literature. In particular, we investigate if the influence of state subsidies on CSR disclosures in China varies across state-owned enterprises (SOEs) and non-state-owned enterprises (NSOEs). More importantly, we also examine if the effect of state subsidies depends on whether they are granted through tax or non-tax channels. While state subsidies are applied around the world by government to overcome market imperfections, exploit economies of scale, and promote social policies (e.g., Stiglitz, 1993; Schneider and Goulder, 1997; Schwartz and Clements, 1999; Jaffe et al., 2005), the decisions to offer subsidies in China, especially through the non-tax channels, are also driven significantly by political influences (Haley and Haley, 2013). Therefore, to explain our findings based on the context of Chinese political economy, we draw upon the political cost hypothesis (Watts and Zimmerman, 1978, 1986), which is often applied in the corporate disclosure literature (Daley and Vigeland, 1983; Wong, 1988; Cahan, 1992; Key, 1997; Grace and Leverty, 2010), including CSR reporting (e.g., Buhr and Freedman, 2001; Patten and Trompeter, 2003; Li and Zhang, 2010; Giuli and Kostovetsky, 2014; Patten, 2015; Christensen, 2015).

The political cost hypothesis implies that corporations engage in socially desirable activities to reduce the risk of adverse actions (Stigler, 1971; Watts and Zimmerman, 1978, 1986) from politicians, who are assumed to have the power to influence corporate wealth through means such as regulations and taxation (Milne, 2002). Since the influence of the government in the economic and business environment is widespread in China (Allen et al., 2005; Lee et al., 2014), it especially provides an interesting and appropriate research setting to examine whether political cost considerations (Ball et al., 2000; Fields et al., 2001; Healy and Palepu, 2001) associated with state subsidies affect CSR disclosure. Our focus on the political cost hypothesis instead of alternative perspectives such as stakeholder theory (Freeman, 1984) or legitimacy theory (Perrow, 1970) stems from two reasons: First, the dominating economic influence of government and the weaknesses in legal enforcement in China (Allen et al., 2005) may cause firms to prioritize political cost considerations above the need to cater for other stakeholders (e.g., customers, suppliers, or employees) or to fulfill social values and norms for legitimacy.[2] Second, existing literature confirms that voluntary disclosure (Chen et al., 2015) and CSR reporting (Marquis and Qian, 2013; Wang and Li, 2016) of Chinese listed firms are heavily influenced by political cost considerations, and shows that this factor has greater explanatory power over the legitimacy theory (Wang et al., 2013).[3]

CSR issues are an increasingly important item on the Chinese government's agenda for at least two reasons. First, over the past decade the Chinese government is proactively directing the country away from an overemphasis on economic growth toward a more balanced approach that also addresses social and environmental issues (See, 2009). Since 2005 the concept of "Harmonious Society" was officially introduced as the policy-making principle across all levels of government, and incorporated into the central government's 11th Five-Year Plan as well as the constitution of the Chinese Communist Party (CCP). For instance, the CCP has issued an official statement that encourages firms to contribute to the development of societal harmony by enhancing "social responsibility among citizens, enterprises, and all kinds of organizations" (Marquis and Qian, 2013). Second, in recent years the Chinese public is increasingly demanding their government to pay attention to CSR issues as a result of high profile business ethics scandals as well as environmental pollution problems. For instance, the public outrage at the tainted milk scandal of 2008 (Wang et al., 2011) as well as the on-going and well-publicized air pollution across major Chinese cities (Li et al., 2017) have generated persisting awareness and demand for CSR in China. Due to these policy initiatives and public pressures, the Chinese government has stepped up its demand for businesses to behave socially and environmentally responsible.

Since CSR reporting enables Chinese firms to demonstrate their compliance with the government demand, such disclosure is also expected to help them address political cost considerations, which is likely to be greater for those that receive more state subsidies. In the case of China, the political cost that firms incur from state subsidies is likely to vary in two ways. First, the NSOEs are expected to be more concerned about possible backlash for not complying with government policy than the SOEs, who enjoy innate government support. Since political connectedness are important in emerging economies where the business environment is heavily influenced by the government (La Porta et al., 1999; Faccio and Lang, 2002), NSOEs are also especially keen to preserve the connections that underlie state subsidy grants by demonstrating policy compliance (Hung et al., 2015). Second, while subsidies through non-tax channels (such as direct tax injections, loan guarantees, and debt forgiveness) are based on competitive applications in developed economies like the U.S. (Alesina and Ardagna, 2010), such grants in China are largely determined by the discretion of officials and the political connectedness of firms (Chen et al., 2008; Du and Mickiewicz, 2016). Therefore, to the extent state subsidies expose firms to greater pressure and scrutiny to comply with government policies (Wong, 1988; Schwartz and Clements, 1999), this effect is expected to

[2] Existing literature suggests that ethical, philanthropic, and discretionary factors may also influence CSR activities in China (e.g., Yin and Zhang, 2012). However, state subsidies are less likely to serve as a direct proxy of these alternative factors, and more likely to capture the effect of political cost considerations given the associated institutional context in China (Allen et al., 2005; Lee et al., 2014).

[3] Wang et al. (2013) document more disclosure of CSR information by Chinese firms in environmentally sensitive industries than their counterparts in high-profile consumer proximity industries. They interpret this as evidence that CSR disclosure in China is driven by political cost rather than legitimacy theory based on the argument that the former set of industries is more likely to be affected by environmental regulations and policies, while the latter set of industries is associated with greater social visibility.

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be even greater in the case of Chinese state subsidies through the non-tax channels, which may be harder to justify and less transparent.

Based on the aforementioned arguments, we expect state subsidies to generate incentives for CSR disclosure as a result of political cost considerations among Chinese listed firms. To reduce political costs, firms receiving more state subsidies may use CSR disclosure as an impression management tool to showcase their commitment to social and environmental responsibility that government demands (Zhao, 2012). Specifically, we expect this effect to be concentrated among NSOEs and when subsidies are granted through non-tax channels. Since Chinese NSOEs are more vulnerable to government backlash than their SOE counterparts, they are also more likely to use CSR disclosures to appease authorities and avert scrutiny. As non-tax subsidies in China are granted largely at the discretion of officials and therefore harder to justify if scrutinized, such subsidies incur greater political costs. To test our assertions, we examine a sample of Chinese listed firms in the manufacturing sector over the period of 2008–2012. Our empirical findings are consistent with these predictions, and robust to control for other determinants of CSR disclosures identified by studies of Western economies. Additional analysis reveals that these findings are also more pronounced among firms domiciled in more politically corrupt regions. Since existing literature suggests that corruptions escalate political costs of Chinese firms (Chen et al., 2015), our additional evidence further substantiates the inference that political cost considerations underlie the influence of state subsidies on CSR reporting.

Our study contributes to the literature in the following ways. First, for the CSR reporting literature, we identify a significant determinant of such disclosure in China, i.e., state subsidies. Existing literature on the role of government in promoting CSR disclosures often focuses on formal regulatory frameworks (e.g., Campbell, 2007) through coercive influences (e.g., Zimmerman and Zeitz, 2002). In developing economies like China, where businesses tend to prioritize growth and profits over environmental and social responsibility, one would expect that direct regulatory interventions are necessary to promote CSR related activities. However, our findings reveal that it is also possible to induce CSR disclosure incentives indirectly through means such as government financial support, which motivates firms to be seen as socially responsible in order to reduce potential political costs. Second, for the wider corporate disclosure literature, our evidence suggests that firms' responsiveness to political cost considerations may vary depending on their political connectedness. Since government policies and enforcement generate uncertainty for firms (Hillman et al., 1999), managers have incentives to cultivate political connections to decrease such uncertainty (Hillman, 2005). However, firms with stronger political connections may perceive themselves as less likely to lose government support or to suffer penalties from the regulators (e.g., Correia, 2014). Third, empirical research provides mixed evidence on the consequences of state subsidies around the world, with some studies suggesting they are beneficial (Bagwell and Staiger, 1989; Claro, 2006) and others inferring they are detrimental (Neary, 1994; Schwartz and Clements, 1999). Given this literature debate, our findings from China as a leading emerging economy reveal that state subsidies can invoke favorable impact on both CSR and firm transparency.

This study is organized as follows: Section 2 reviews the literature on CSR disclosure determinants. Section 3 briefly introduces the institutional background of our setting in China. Section 4 develops our testable hypotheses. Section 5 explains the research design and sample selection. Section 6 presents our empirical results. Section 7 concludes with a summary and an outlook on future research.

2. Literature review

CSR reporting, like other channels of corporate disclosures ranging from financial statements to press releases, enables firms to communicate with stakeholders and regulators. Corporate disclosures in general are critical for the efficient allocation of resources in capital market economy for two reasons (Healy and Palepu, 2001; Beyer et al., 2010). First, disclosures could moderate the "lemons" problem that arises from the information asymmetry between managers and investors (Akerlof, 1970). Second, information facilitates monitoring against self-serving behaviors of managers to reduce agency problems (Jensen and Meckling, 1976). For instance, in the CSR reporting context, existing studies provide evidence that greater disclosures help firms attract investors (Richardson and Welker, 2001; Dhaliwal et al., 2011; Servaes and Tamayo, 2013) and improve relations with stakeholders and regulators (Barnett, 2007; Barnett and Salomon, 2012). The importance of both corporate disclosure and CSR activities has given rise to a large and growing body of CSR reporting studies in the accounting literature that applies a wide variety of themes.[4] Since the focus of our study is on the determinant of CSR disclosures, we concentrate our literature review on influential factors consistently identified by previous research.

2.1. Public visibility

Firms with higher public visibility are expected to have more CSR disclosure incentives to demonstrate that their actions are consistent with good corporate citizenship because such firms tend to be subject to greater public and regulatory pressure from external interests (e.g., Watts and Zimmerman, 1978, 1986; Patten, 1991, 1992; Cormier and Gordon, 2001; Cormier and Magnan, 2003; Cormier et al., 2005; Gao et al., 2005; Brammer and Pavelin, 2006; Branco and Rodrigues, 2008; Reverte, 2009; Dhaliwal et al., 2014; Patten, 2015). While firm size is often used to measure public visibility, it can

[4] Huang and Watson (2015) review CSR disclosure studies published in leading accounting journals on various themes such as determinants, relation with CSR performance, consequences, and assurance.

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also be correlated with many other factors. Therefore, some studies adopt media attention as an alternative proxy for public visibility (Ader, 1995; Brown and Deegan, 1998; Sharma and Nguan, 1999; Brammer and Pavelin, 2006; Islam and Deegan, 2010). Cormier et al. (2005) argue that since media attention is a mechanism for applying public pressure on companies, corporate managers are expected to react to such increased pressure by increasing their CSR reporting as well as the quality of such disclosures.

2.2. Corporate profitability

Despite prior evidence that CSR disclosure can benefit a firm and its stakeholders, the potential costs resulting from such disclosure do impose financial constraints on a firm's disclosing behavior (Li et al., 1997). Firms in a sound financial condition can more easily meet their obligations to stakeholders, consistent with the view that "organizational slack" may promote disclosure simply by providing the resources to meet the accompanying administrative costs (Brammer and Pavelin, 2006; Huang and Kung, 2010; Khan et al., 2013; Huang and Watson, 2015). However, empirical research on the profitability-disclosure relation has yielded mixed results. For example, Gray et al. (2001) investigate the determinants of social disclosure in an UK sample and find a positive association between profitability and social disclosure while Roberts (1992) cautiously concludes that there is a positive relationship between lagged profits and social disclosure. By contrast, Patten (1991), using multiple measures for profitability including lagged measures, fails to find any relationship between profitability and social disclosure.

2.3. Industry classification

Industries with a high environmental impact are subject to greater scrutiny from external groups such as environmental activists and regulators. Firms operating in these industries are expected to have more incentives to offer CSR disclosures for either impression management or public assurance (Bowen, 2000; Cho et al., 2010; Mahadeo et al., 2011; Young and Marais, 2012). Several empirical studies have found a positive association between high environmental impact industries and CSR disclosure (Huang and Kung, 2010). Contrary to these findings, Adams et al. (1991) find that only specific types of disclosure are related to industry membership.

2.4. Social performance

Prior studies on the link between social performance and CSR disclosures have yielded mixed findings. Cormier and Magnan (1999) examine the determinants of corporate environmental reporting by Canadian firms and find no significant relation between social disclosure and social performance. In contrast, Brammer and Pavelin (2006) find that the quality of voluntary environmental disclosure is negatively associated with a firm's environmental performance. They argue that firms that have a record of poor environmental performance are more likely to make environmental disclosures to mitigate the concerns of external groups. However, more recent literature (e.g., Clarkson et al., 2015; Marano et al., 2016) documents a positive relationship between social performance and social disclosures.

2.5. Ownership structure

The relationship between ownership structure and CSR disclosure is based on the perspective of the principal-agent model (Oh et al., 2011; Khan et al., 2013; Fernandez-Feijoo et al., 2014). For instance, some studies document a positive relationship between the dispersion of share ownership and CSR disclosure (Brammer and Pavelin, 2006; Ullmann, 1985; Roberts, 1992). Cormier et al. (2005) find a negative association between foreign ownership and the quality of environmental disclosure in a German sample. They argue that this is because environmental concerns are higher in Germany than in many other countries. Using a sample of European and US firms, Smith et al. (2005) suggest that differences in ownership structure across countries may influence the level and quality of CSR disclosure.

2.6. Capital markets

Reliance on capital markets for financing needs also imposes upon managers the need to increase CSR disclosure in order to lower the cost of raising capital from outside investors (Gao et al., 2016). For example, the debt and equity issuance processes typically require a firm to provide information concerning key risks in its operations. Therefore, reliance on capital markets is expected to be positively associated with firms' social disclosures (Cormier and Magnan, 1999). Lending support to the cost of capital incentive for CSR disclosure, Dhaliwal et al. (2011) find that firms with a high cost of equity capital in the previous year tend to initiate standalone CSR disclosures in the current year. This finding is consistent with their argument that cost of capital concerns may motivate firms to voluntarily disclose CSR information.

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2.7. Culture factors

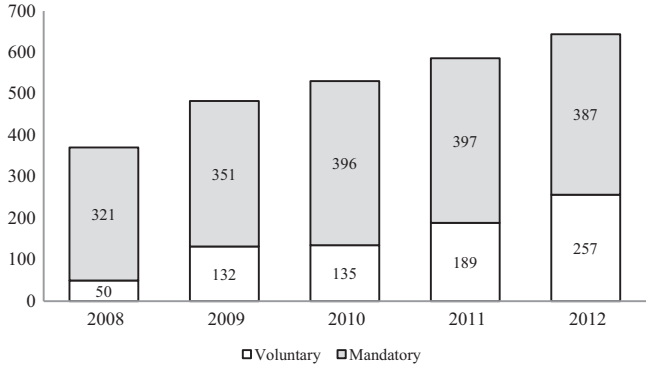
Several studies have documented that cultural (Alrazi et al., 2016) and institutional (De Villiers and Marques, 2016) factors play an important role in CSR disclosure. For example, Haniffa and Cooke (2005) find that the extent of CSR disclosure is greater for companies with boards dominated by Malay directors, a surrogate for culture. Smith et al. (2005) show that firms from countries with stronger emphasis on social issues like Norway and Denmark tend to have a higher level and quality of CSR disclosure. Buhr and Freedman (2001) find that the Canadian culture is more conducive to the production of environmental disclosure than its US counterpart. One possible explanation for these findings is that culture may be represented by perceptions of loyalty to an ethnic group in which people are sharing patterns of normative behavior (Cohen, 1976), which shapes their different attitudes toward corporate wealth and social responsibility.

3. Institutional background

China has an institutional environment that differs from Western developed countries where CSR activities originated and evolved. However, existing studies on the determinants of CSR disclosure in China largely focus on reconfirming the influence of factors already identified by research based on Western economies. For instance, firm characteristics such as size and industry membership are documented to be influential (Zeng et al., 2012; Yang et al., 2015). Li and Zhang (2010) find that ownership concentration reduces CSR disclosure among NSOEs. They explain their findings using agency theory and argue that the largest shareholders of NSOEs tend to expropriate minority shareholders to achieve their private interests. Li et al. (2013) find that firm performance is significantly positively associated with the likelihood of disclosing CSR information among NSOEs. They argue that NSOEs are more focused on profit maximization than SOEs, which makes their CSR reporting more sensitive to economic issues. Nevertheless, as an increasingly important player in the global economy, China's interesting institutional features deserve to be considered in studies of CSR disclosure determinants.

3.1. CSR disclosure in China

The development of CSR disclosure in China has a relatively short history (Wang and Juslin, 2009). A growing number of initiatives have emerged only since 2006. In January 2008, the State-Owned Assets Supervision and Administration Commission of the State Council (SASAC) issued a landmark guideline for the central government controlled SOEs (Li et al., 2013). About the same time, the two stock exchanges both released notices on the implementation of the CSR reporting for listed firms. In the Shanghai Stock Exchange, three types of listed firms are mandated to issue CSR reports from the fiscal year 2008 onward, including firms listed in the Shanghai Stock Exchange Corporate Governance Index, firms that list shares overseas, and firms in the financial sector. In the Shenzhen Stock Exchange, firms that are listed in the Shenzhen 100 index are also mandated to publish CSR reports from the fiscal year 2008 onward. Apart from these prescriptions, all other firms listed in either stock exchange are encouraged to disclose CSR information on a voluntary basis. Appendix A presents several major initiatives on CSR disclosure. Fig. 1 reveals the total number of listed firms that disclose CSR according to the statistics of Runling CSR Ratings (RKS). It indicates that CSR disclosure, especially voluntary disclosure, increased gradually over the period 2008–2012. A sharp rise in voluntary CSR reporting can be observed in 2009. Of the 483 CSR reports issued that year, 132 were disclosed on a voluntary basis, compared with 50 in 2008.



Source: Runling CSR Ratings (RKS)

Fig. 1. The number of CSR reports released by Chinese listed firms by fiscal year.

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3.2. State subsidies of Chinese listed firms

State subsidies are a particular feature of the social capitalist economy of China where the government's "visible hand" continues to influence the economic activities of market participants. The primary goal of state subsidies is to develop national priority areas such as agriculture, public utilities, and high-tech industries. Another objective is to help firms relax capital constraints and rescue firms in financial distress (Chen et al., 2008; Zou and Adams, 2008; Lee et al., 2014).[5] Allen et al. (2005) suggest that state subsidies account for one of the four most important financing sources of Chinese firms. Haley and Haley (2013) argue that state subsidies have contributed significantly to China's economic success by providing firms with "easy access to capital". However, while government subsidies have oiled the wheels of China's economic growth, they have also invited increasing trade disputes in recent years. For instance, a report published by the European Council on Foreign Relations claims that Chinese firms receive "massive state subsidies and can therefore compete unfairly with European companies" (Godement et al., 2011).

Chinese government subsidies can be broadly classified into tax related and non-tax related subsidies, based on the discretions of government authorities involved in granting subsidies (Zou and Adams, 2008; Lee et al., 2014; He, 2016).[6] Tax-related subsidies are granted to firms that satisfy established criteria according to China's industrial and regional development policies. Non-tax related subsidies are often provided outside established guidelines and at the discretion of authorities. Before 2002, a local government could subsidize the firms within its jurisdiction through three avenues, including income tax refund, preferential tax provisions, and direct subsidy. Specifically, local governments could first levy corporate tax on firms at the official rate of 33% and refund part of the tax to the firms afterwards. However, the policy of "first tax then refund" was abolished in 2002. After 2007, most of the tax related subsidies including preferential tax provisions were abolished, and the decision rights on offering tax breaks have been concentrated in the central government. Consequently, the local governments have to resort to non-tax related subsidies to support their listed firms (He, 2016). The selection of firms to offer subsidies as well as the amount of grants is essentially up to the discretions of local officials.[7] As such, political connections play an important role in obtaining and securing government support (Haley and Haley, 2013).

There is so far limited and mixed evidence on the implications of state subsidies on corporate disclosure in China. On the one hand, Chen et al. (2008) provide evidence that state subsidies can be used to manipulate earnings by some firms seeking to avoid loss, which reduces the quality of corporate reporting. On the other hand, Lee et al. (2014) provide evidence that state subsidies are value relevant, which suggests that such information contributes to the valuation decision of investors. This is corroborated by He (2016), who suggests that government subsidies attenuate firms' earnings management incentives. However, to what extent state subsidies can induce voluntary CSR disclosure through firms' political cost consideration has not been examined, and we fill this research gap.

3.3. Ownership and control of listed firms in China

The dominant role of state ownership in many listed firms is a feature that distinguishes China from other transitional economies. Despite of the establishment of stock markets and the partial privatization of many SOEs, both central and local governments in China maintain substantial control of these listed firms. Although China is increasingly shifting toward a market-based economy, nearly two thirds of Chinese listed firms nowadays are still under state control. The remaining listed firms are NSOEs, which are owned and controlled by private investors (Allen et al., 2005; Lee et al., 2014). To support the SOEs, the Chinese government often provides support such as business contracts and financial assistance. For example, SOEs have greater access to the process for making equity offerings for capital needs (Gordon and Li, 2003) and debt financing (Sapienza, 2004; Jia, 2009). Moreover, governments are more likely to fund the SOEs by providing them with direct subsidies, particularly when they are in financial distress (Chen et al., 2008). In return for receiving state support, the Chinese SOEs are required to return a significant part of their profits back to the government and they are also expected to help achieve policy objectives such as the maintenance of regional economic stability and development (e.g., Sun and Tong, 2003; Bai et al., 2006). In contrast, the Chinese NSOEs that receive state subsidies have no similar obligations (e.g., Bai et al., 2006). As a result, state subsidies to the NSOEs can be seen as the use of public money to prop up wealthy individuals and result in greater public attention as well as political costs.

[5] Distressed firms may not necessarily have the financial strength to carry out CSR activities or disclosure. However, this would only bias against rather than in favour of us finding evidence of an association between CSR reporting and state subsidies. As we discuss later in the research design section, we already control for firm characteristics that can capture financial distress such as profitability and leverage. In untabulated additional tests, we also control whether the firm is under special treatment status and on the verge of delisting, and this does not affect our overall inferences.

[6] Beyond these two broad groups, state subsidies in China can be further classified into very detailed sub-categories such as cash grants, interest-free loans, tax-breaks, insurance, low-interest loans, depreciation write-offs, rent rebates, cheap land, and subsidized energy among others. However, due to the lack of data sources, it is difficult for researchers to construct a large database that includes these highly detailed classifications. This is why we follow existing studies such as Zou and Adams (2008) and Lee et al. (2014) to differentiate subsidies into tax related and non-tax related classifications. To the extent such classification incurs noise, it will only bias against rather than in favour of us finding evidence of association between CSR disclosure and state subsidies.

[7] Although some state subsidies are granted at the discretion of officials, Chinese firms are required to report information on all state subsidies they receive. The disclosures of state subsidies, including content and format, are regulated by China Securities Regulatory Commission (CSRC), which is the Chinese equivalent of the U.S. Securities and Exchange Commission (SEC). Furthermore, the disclosures of state subsidies would be audited by audit firms along with other information disclosed in the annual report. As such, Chinese firms are expected to provide accurate information about state subsidies as recipients.

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4. Hypotheses development

The political cost hypothesis (Watts and Zimmerman, 1978, 1986) is frequently used to explain managerial choices in the corporate disclosure literature (Fields et al., 2001; Healy and Palepu, 2001). The government has the power to affect corporate wealth redistributions through regulations and taxations (Stigler, 1971; Milne, 2002). Watts and Zimmerman (1978, page 115) state that: "To counter these potential government intrusions, corporations employ a number of devices, such as social responsibility campaigns in media, government lobbying, and selection of accounting procedures to minimize earnings." Empirical studies provide evidence consistent with firms seeking to decrease the risk of possible adverse political actions, through various approaches such as downward earnings management (Daley and Vigeland, 1983; Cahan, 1992; Key, 1997; Han and Wang, 1998; Grace and Leverty, 2010) and CSR disclosures (Belkaoui and Karpik, 1989; Blacconiere and Patten, 1994; Patten and Nancy, 1998; Patten and Trompeter, 2003; Patten, 2015; Christensen, 2015). These studies rely largely on firm size and industry membership as proxies for political costs.

In the context of the political economy of China, managing a firm's political costs would be especially important for corporate survival. As a transitional economy, the influence of Chinese government intervention on economic activities arises not only through regulation and taxation, but also through channels such as enforcement, licenses, quotas, permits, and franchise assignment. Given the increasing concerns about social and environmental issues in China, CSR disclosure enables firms to communicate with and showcase to the public how they are addressing these issues of growing interest. This is why the Chinese government proactively encourages CSR reporting through a series of initiatives as we discussed in Section 3.1. However, corporate disclosure incentives are generally influenced by the perceived necessity or pressure (e.g., Cormier and Magnan, 1999). As such, firms are expected to be more willing to offer CSR disclosure on a voluntary basis if they have a greater need to do so, such as to address potential political cost considerations (Neu et al., 1998). Chinese firms that receive state subsidies are associated with higher political cost considerations because they are essentially being propped up by the money of tax payers and the fiscal resources of the government. As a result, to avoid backlash and maintain support, such firms are expected to have greater incentives to offer CSR disclosure and be seen as active in pursuing socially and environmentally responsible activities.

Moreover, the perceived necessity or pressure to address political costs induced by the receipt of state subsidies is expected to be greater among Chinese NSOEs relative to their SOE counterparts for two reasons. First, the political capital reflected through subsidies is more valuable to NSOEs because they do not automatically receive government support like their SOE counterparts. In other words, NSOEs need to make more effort to cultivate or maintain their political capital. Second, the profits of NSOEs are more likely to be retained in the hands of wealthy individuals and less likely to be redistributed to the public than SOEs, as we discussed in Section 3.3. Therefore, receiving higher levels of state subsidies exerts greater public visibility and political pressure for NSOEs to be more transparent and appear as socially responsible. As a result, the relationship between CSR disclosure and state subsidies is expected to vary between SOEs and NSOEs. Given the aforementioned arguments, we formulate the following testable hypothesis:

H1. The positive relationship between voluntary CSR disclosure and state subsidies is more pronounced among NSOEs than SOEs.

The political cost concern arising from receiving state subsidies is also expected to vary depending on the type of subsidies granted. As explained in Section 3.2, the Chinese government provides subsidies to firms through two channels. The first is tax breaks, which are controlled by the central government and are automatically granted to firms that fulfill criteria established in official guidelines. For instance, such subsidies can be offered to firms that invest in certain sectors or regions that the government intends to promote. The second is non-tax based direct financial support offered mainly at the discretion of government authorities outside normal guidelines. The provision of such subsidies is perceived as less transparent and more attributed to political connections between the recipient firms and the government. The discretionary influence of government officials on non-tax based subsidies renders it a reflection of political capital and connectedness, which NSOEs are expected to be especially keen to maintain and cultivate, but can also be seen by the public as under the table dealings and favoritism. These potential negative perceptions associated with non-tax related subsidies render the receiving firms more likely to attract public scrutiny or concern, and NSOEs are expected to be more sensitive to such political cost considerations since they are not state owned. As a result, we further hypothesize that:

H2. The positive relationship between voluntary CSR disclosure and state subsidies among NSOEs is more pronounced when subsidies are granted through non-tax than tax based channel.

5. Research design

5.1. Sample and data

We manually collect data on CSR disclosure and state subsidies. Specifically, we collect CSR reports from various sources, including (1) Cninfo website (http://www.cninfo.com.cn/), an official disclosure platform for Chinese listed companies, (2) annual reports, and (3) company websites. The subsidy data, including the amount of total subsidies, as well as both tax

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and non-tax based subsidies, are hand-collected from annual reports. The accounting and financial data used in our research is downloaded from the China Security Markets and Accounting Research Database (CSMAR) and the CCER Sinofin Database. Our analyses call for separating SOEs and NSOEs. We identify SOEs (NSOEs) as those whose ultimate owners are (are not) state asset management bureaus or other state-owned enterprises controlled by the government. The ownership data is obtained from the CSMAR Database.[8]

We base our sample selection on all manufacturing firms listed on the Shanghai and Shenzhen Stock Exchanges from 2008 to 2012. We begin our sample from year 2008 since this is the first year of implementation of the CSR rules set by the two stock exchanges and only a handful of firms published CSR reports before then. We focus on manufacturing firms for three reasons. First, the manufacturing sector is the largest and most important sector in the Chinese economy, and China is the leading manufacturing center of the world today. For instance, based on a report released by IHS Global Insight, China accounted for a 19.8% share of global manufacturing and became the largest manufacturing nation in the world by surpassing the 19.4% of the US in 2010.[9] In addition, manufacturing firms accounted for around 50% of the market value of China's stock market, making it more specialized in that sector than any other large emerging economy (Lee et al., 2014). Second, the manufacturing sector tends to be labour intensive and has higher environmental impact, and as such is more sensitive to CSR related issues. Third, a single sector reduces the heterogeneity of firm characteristics in the sample, which may introduce noise into our analyses.

Table 1 presents details of our sample. Panel A summarizes our sample selection process. Of the 6702 observations for the period of 2008–2012, we eliminate 1489 observations with missing values for state subsidies and 1294 observations with missing data on control variables. Since this paper investigates questions related to voluntary accounting choice, we eliminate observations that are required to publish CSR reports on a mandatory basis (703 observations). The final sample is comprised of 3216 firm-year observations. Panel B provides the yearly distribution of observations. The percentage of firms that voluntarily disclosed CSR information increased gradually across the sample years. For example, the years with the smallest and largest number are 2008 and 2012 with 5.376% and 14.405%, respectively. Panel C provides the distribution of observations by ownership. The percentage of voluntary CSR disclosure of the SOEs is slightly lower than that of the NSOEs (9.492% vs. 9.915%).[10]

5.2. Model specification

Our regression models are largely based on Dhaliwal et al. (2011), who employ a lead-lag approach. This is done to address the potential reverse causality issues that can arise if we examine a contemporaneous relation between CSR disclosure and state subsidies. On the one hand, a firm that receives more subsidies is likely to have greater pressure to disclose CSR information, as we hypothesize. On the other hand, a firm that discloses CSR information may receive more state subsidies as a reward. Therefore, the inference drawn from evidence provided by the analyses of a contemporaneous relation between state subsidy and CSR disclosure could be ambiguous. Our Probit regression model is as follows:

$$\begin{aligned}\Pr(DISCI_{i,t}) = {} & \alpha_0 + \alpha_1 SUB_{i,t-1} + \alpha_2 DISCI_{i,t-1} + \alpha_3 SIZE_{i,t-1} + \alpha_4 ROA_{i,t-1} + \alpha_5 LEV_{i,t-1} + \alpha_6 TOBINQ_{i,t-1} + \alpha_7 FIN_{i,t-1} \\ & + \alpha_8 ENVI_{i,t-1} + \alpha_9 COMPETITION_{i,t-1} + \alpha_{10} LIQUIDITY_{i,t-1} + \alpha_{11} ABS\_ACC_{i,t-1} + Industry + Year + \varepsilon_{i,t} \qquad (1)\end{aligned}$$

where $DISCI_{i,t}$ is a dummy variable that equals 1 if the firm i either issues a standalone CSR report or discloses CSR information in the annual report in year t, and 0 otherwise. $SUB_{i,t-1}$ is amount of state subsidies scaled by total assets of the firm i in year $t-1$.[11] In order to test hypothesis H1, we estimate Eq. (1) for the SOE and NSOE subsamples, respectively.[12] If the political cost concern associated with receiving state subsidies is greater among NSOEs relative to SOEs, we should observe that α_1, the coefficient for $SUB_{i,t-1}$, is significantly positive for the NSOE subsample but less so for the SOE subsample.

To parse out potential confounding effects, we also control for other factors that may affect CSR disclosure. Following Dhaliwal et al. (2011) as well as prior research, we introduce a number of control variables into the regression model. Firm's voluntary disclosure behavior tends to be persistent over time, and we include a variable that indicates whether the firm issued CSR information in year $t-1$ ($DISCI_{i,t-1}$). Firm size ($SIZE_{i,t-1}$) is considered to capture various factors that may motivate firms to publish CSR reports such as public pressure or financial resources, and we measure it as the natural logarithm of the market value of common equity in year $t-1$. Better performing firms may have more financial resources to engage in CSR activities and disclose CSR information (Li et al., 2013), we control for return on assets ($ROA_{i,t-1}$) that is computed as income before extraordinary items divided by total assets in year $t-1$. The demand for financing can also motivate the firm

[8] This provides the most up-to-date ownership data for Chinese listed firms.

[9] For instance see http://www.finfacts.ie/irishfinancenews/article_1021835.shtml.

[10] Unreported results show that, among firms publishing CSR reports on a mandatory basis, the percentage of CSR disclosure is significantly higher for the SOEs.

[11] To further mitigate the potential effect of reverse causality, we repeat our analyses using two alternative measures of subsidies, i.e. (1) the average of the past three years' subsidies scaled by total assets; and (2) subsidies scaled by total sales. Untabulated additional analyses suggest that our findings are robust to the alternative measures.

[12] Given the distinct nature of SOEs and NSOEs, we use sub-sample analysis to allow coefficients on all independent and control variables to vary across these two groups of firms. In untabulated analysis, we also repeat our main tests based on a full sample that includes both SOEs and NSOEs, and use interaction terms to examine the differential effects between the two groups of firms. Our inference remains consistent.

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Table 1
Sample selection and distribution.

Panel A: Sample selection process				Observations	
Initial manufacturing firm-year sample from 2008–2012 Less:				6702	
Observations that are mandated to disclose CSR information				(703)	
Observations with missing values on government subsidy				(1489)	
Observations with missing values on other variables				(1294)	
Final sample for testing disclosure choices				3216	
Panel B: Distribution of firm-years by fiscal year					
	2008	2009	2010	2011	2012
# of firm-years	392	522	640	701	961
% of voluntary CSR disclosures	5.376	10.593	9.966	11.094	14.405
Panel C: Distribution of firm-years by ownership					
	# of firm-years		% of voluntary CSR disclosures		
NSOEs	1748		9.915		
SOEs	1468		9.492		

This table presents our sample selection process (Panel A), yearly distribution (Panel B) and distribution by ownership (Panel C). NSOEs and SOEs represent non-state controlled and state-controlled firms, respectively.

to make voluntary disclosures (Cormier and Magnan, 1999), and we include a variable representing financing activities ($FIN_{i,t-1}$) measured as cash flows from financing activities scaled by total assets in year t − 1.

Growth firms may either have less resource to offer CSR reporting due to financial constraint, or have more incentives to offer such disclosure to reduce the cost of capital. We measure growth opportunities by Tobin's Q ($TOBINQ_{i,t-1}$), which is computed as the market value of common equity plus the book value of preferred shares, plus the book value of long-term debt and current liabilities, divided by the book value of total assets in year t − 1. Leverage increases a firm's business risk, which in turn induces managers to make voluntary CSR disclosure to lower the risk (Cormier and Magnan, 1999; Ye and Zhang, 2011). We measure leverage ($LEV_{i,t-1}$) as total debt divided by total assets in year t − 1. Managers may have incentives to offer CSR disclosure to increase the liquidity of firms' stock in order to obtain real benefits from options or other incentive compensation plans. Our measure of liquidity ($Liquidity_{i,t-1}$) is the ratio of the number of shares traded in the year to the total outstanding shares at the end of year t − 1.

Firms operating in industries with higher environmental sensitivity are more likely to disclose CSR information to legitimize their business activities (Patten and Nancy, 1998). To capture this effect, we construct a dummy variable ($Envi_{i,t-1}$) that equals 1 if the firm is operating in an environmentally sensitive industry, and 0 otherwise. We identify "more sensitive" industries following the existing literature, which include paper, oil and gas generation, chemicals, and steel and other metals. Firms operating in more competitive industries may either offer less disclosure due to proprietary costs (Dye, 1985) or provide more CSR transparency to promote public relations (Roberts, 1992). We control for industry competition ($Competition_{i,t-1}$) which is proxied by the Herfindahl-Hirschman Index. This index is computed as the sum of the squared fractions of sales of the 20 largest firms in an industry.[13]

We also include a proxy for earnings quality as a control variable because the CSR disclosure can be correlated with financial transparency of the firms. We use the absolute value of abnormal accruals ($ABS\_ACC_{i,t-1}$) estimated using the modified Jones (1991) model, based on Kothari et al. (2005), to measure earnings quality.[14] Finally, dummy variables representing China Securities Regulatory Commission (CSRC) two-digit industry membership and year fixed effects are included in all regressions. Table 2 presents the definition of all variables we apply in our empirical analyses.

Our hypothesis H2 predicts that, for NSOEs, the effect of state subsidies on CSR disclosure is more likely to be through non-tax related channels of subsidies. To provide evidence consistent with this conjecture, we estimate the following Probit model:

$$\begin{aligned}\Pr(DISCI_{i,t}) = {} & \gamma_0 + \gamma_1 TAX_{i,t-1} + \gamma_2 NTAX_{i,t-1} + \gamma_3 DISCI_{i,t-1} + \gamma_4 SIZE_{i,t-1} + \gamma_5 ROA_{i,t-1} + \gamma_6 LEV_{i,t-1} + \gamma_7 TOBINQ_{i,t-1} \\ & + \gamma_8 FIN_{i,t-1} + \gamma_9 ENVI_{i,t-1} + \gamma_{10} COMPETITION_{i,t-1} + \gamma_{11} LIQUIDITY_{i,t-1} + \gamma_{12} ABS\_ACC_{i,t-1} + Industry \\ & + Year + \varepsilon_{i,t} \end{aligned} \quad (2)$$

where tax related subsidies ($TAX_{i,t-1}$) is measured as the amount of subsidies granted through tax related channel such as tax rebates, and scaled by total assets in year t − 1. Non-tax related subsidies ($NTAX_{i,t-1}$) is measured as the amount of other subsidies (e.g., cash grants and debt forgiveness) scaled by total assets in year t − 1. If γ_2 is more significantly positive than γ_1 for the NSOE subsample, then we have evidence consistent with the hypothesis H2.

[13] Based on Dhaliwal et al. (2011), if there are less than 20 firms in an industry, then we use all firms in that industry to calculate market shares. The higher the HH index, the less competitive industry it is.

[14] Existing literature also suggest that firms use income decreasing accruals to avoid political costs. We also replicate our regression analysis using the level of discretionary accruals rather than its absolute value as control variable. We acquire qualitatively similar findings from this set of analyses, which are not tabulated for brevity.

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6. Empirical findings

6.1. Descriptive statistics

Table 3 presents descriptive statistics for the variables used in our empirical analyses for NSOEs and SOEs, respectively (hereafter the firm subscript *i* is omitted for simplicity). All variables, except the dummy variables, are winsorized at the 1st and 99th percentiles. The decision to disclose ($DISCI_t$) differs insignificantly between the two groups. The state subsidies scaled by total assets (SUB_{t-1}) are lower for SOEs than for NSOEs (Mean: 0.006 for NSOEs versus 0.005 for SOEs). This could be explained by the fact that SOEs are significantly larger than their NSOE counterparts (Mean of $SIZE_{t-1}$: 14.260 for NSOEs versus 14.644 for SOEs). In both SOEs and NSOEs sub-samples, non-tax subsidies are higher in magnitude than tax-based subsidies, and untabulated analysis reveals that this difference is statistically significant.[15] Moreover, consistent with Li and Zhang (2010), SOEs are less profitable (Mean of ROA_{t-1}: 0.041 for NSOEs versus 0.019 for SOEs), more highly levered (Mean of LEV_{t-1}: 0.433 for NSOEs versus 0.535 for SOEs), and have lower growth opportunities (Mean of $TOBINQ_{t-1}$: 2.180 for NSOEs versus 2.046 for SOEs). Additionally, SOEs tend to have better earnings quality than NSOEs (Mean of ABS_ACC_{t-1}: 0.083 for NSOEs versus 0.069 for SOEs), consistent with the belief that the protection of SOEs by the government may reduce the pressure on managers to manipulate accounting numbers (Wang and Yung, 2011).

6.2. Pearson correlations

Table 4 presents Pearson correlations. The numbers above (below) the diagonal are for SOEs (NSOEs), respectively. The correlation between $DISCI_t$ and SUB_{t-1} is positive for NSOEs (0.0182) and negative for SOEs (−0.0383). The findings lend initial support to hypothesis H1 that state subsidy is positively associated with the probability of CSR disclosure for NSOEs but not SOEs. In addition, for the NSOE subsample, $DISCI_t$ significantly positively correlates with $NTAX_{t-1}$ but insignificantly correlates with TAX_{t-1}. For the SOE subsample, however, $DISCI_t$ has no significant correlation with both $NTAX_{t-1}$ and TAX_{t-1}. This provides preliminary evidence for hypothesis H2 that the effect of state subsidies on CSR disclosure is attributed to non-tax based rather than tax-based subsidies.[16] Finally, since the correlations among non-dependent variables are less than 0.7, multicollinearity should not be a concern in this study.[17]

6.3. Test of hypothesis H1

Table 5 presents the regression results for the test of hypothesis H1. State subsidies in year t − 1 (SUB_{t-1}) is significantly positively associated with a firm's likelihood of voluntarily issuing a CSR report in year t ($DISCI_t$) for the NSOE group (coefficient = 21.899, z-stat = 2.550), while the association is insignificant for the SOE group (coefficient = −7.101, z-stat = −1.009).[18] Based on marginal effect, for NSOEs, one percent increase in subsidies per asset increases the probability of voluntary CSR disclosure by 1.654%. Moreover, the difference in the coefficients on SUB_{t-1} is significantly higher for the NSOE subsample (p-value = 0.018), which is consistent with our prediction in hypothesis H1. These findings are robust to controls for other CSR disclosure determinants identified by previous literature. Our evidence indicates that state subsidies in the previous year are more likely to motivate NSOEs to report their CSR information in the current year, possibly because state subsidies induce greater incentives among such firms than SOEs to address political cost considerations.

The signs of the coefficients on the control variables are generally consistent with the expected ones. For example, the coefficients of $DISCI_{t-1}$ are significantly positive for both groups, suggesting that firms' voluntary disclosure behaviors are persistent on average. $SIZE_{t-1}$ and ROA_{t-1} have positive coefficients in the regressions as expected, suggesting that large and well-performing firms have greater incentives to disclose their CSR information. Moreover, the coefficients on $TOBINQ_{t-1}$ are significantly negative for NSOEs, consistent with growing firms having greater financial constraints that inhibit their ability to make disclosure decisions.

[15] Based on T-hotelling test and signed test.

[16] The correlation between tax and non-tax subsidies is insignificant in both SOE and NSOE sub-samples. Untabulated analysis reveals that in a full sample that combines both SOEs and NSOEs, the correlation between tax and non-tax subsidies is 0.0339 and marginally significant at 10% level (*p*-value = 0.053), which suggest that overall there is a moderate complementary relation between them. However, these two types of subsidies could either be substitutive or complementary, and there is no a priori on how they should correlate. Since this is beyond the scope of our study, we leave future research to examine this interesting issue.

[17] Lind et al. (2002) point out that multicollinearity may exist if the correlation coefficients exceed 0.7, which is a typical threshold to identify the presence of multicollinearity.

[18] Based on untabulated analysis of the full sample that includes both SOEs and NSOEs, the general relation between CSR disclosure and subsidies is significantly positive only for non-tax subsidies (coefficient = 9.701, z-stat = 1.838), and not for either total subsidies (coefficient = 6.307, z-stat = 1.247) or tax-based subsidies (coefficient = −0.766, z-stat = −0.075). The lack of significant effect for total subsidies or tax-based subsidies on CSR disclosure in this full sample is likely to be due to the lack of such relation among the SOEs and tax-based subsidies as we predict in hypotheses H1 and H2, respectively.

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Table 2
Variable definitions.

Variables	Definition
Dependent variables	
$DISCI_t$	Indicator variable that equals 1 if a firm voluntarily either issues a standalone CSR report or discloses CSR information in the annual report in year t, and otherwise 0
$EXTENT_t$	An overall rating of CSR reporting substantiveness in year t, obtained from the RKS CSR rating agency
Hypotheses test variables	
SUB_{t-1}	Government subsidies scaled by total assets in year t – 1
TAX_{t-1}	Tax-based subsidies scaled by total assets in year t – 1
$NTAX_{t-1}$	Non-tax based subsidies scaled by total assets in year t – 1
Control variables	
$DISCI_{t-1}$	Indicator variable that equals 1 if a firm voluntarily discloses a CSR report in year t – 1, and otherwise 0
$EXTENT_{t-1}$	An overall rating of CSR reporting substantiveness in year t – 1, obtained from the RKS CSR rating agency
$SIZE_{t-1}$	The natural logarithm of the market value of common equity in year t – 1
ROA_{t-1}	Income before extraordinary items scaled by total assets in year t – 1
FIN_{t-1}	Cash flow from financing activities scaled by total assets in year t – 1
$TOBINQ_{t-1}$	The market value of common equity plus the book value of preferred shares, plus book value of long-term debt and current liabilities, scaled by the book value of total assets, in year t – 1
LEV_{t-1}	The ratio of total debt divided by total assets, in year t – 1
$Liquidity_{t-1}$	The ratio of the number of shares traded in the year to the total outstanding shares at the end of year t – 1
$ENVI_{t-1}$	Environmental sensitivity, a dummy taking the value of one if the firm operates in a high-profile environmental industries (e.g., Paper, Oil and Gas Generating, Chemicals and Steel and Other Metals)
$Competition_{t-1}$	Herfindahl-Hirschman Index, computed as the sum of the squared fractions of sales of the 20 largest firms in the industry, in year t – 1
ABS_ACC_{t-1}	Absolute value of abnormal accruals estimated using the modified Jones model in year t – 1, based on Kothari et al. (2005)
IND_SUB_{t-1}	Industry median of subsidies within a region for year t – 1
N_FIRMS_{t-1}	Number of listed firms in the province in year t – 1
NEG_ROA_{t-1}	Indicator variable that equals 1 if the pre-subsidy ROA is negative, and otherwise 0
$FISCAL_{t-1}$	(Fiscal expenses-fiscal revenue)/provincial GDP in year t – 1

Table 3
Descriptive statistics.

	NSOEs					SOEs				
	Mean	Median	Std	Min	Max	Mean	Median	Std	Min	Max
$DISCI_t$	0.099	0.000	0.299	0.000	1.000	0.095	0.000	0.293	0.000	1.000
SUB_{t-1}	0.006	0.003	0.008	0.000	0.050	0.005	0.002***	0.008	0.000	0.050
TAX_{t-1}	0.001	0.000	0.003	0.000	0.021	0.001	0.000	0.003	0.000	0.021
$NTAX_{t-1}$	0.005	0.003	0.007	0.000	0.047	0.004	0.002***	0.007	0.000	0.047
$DISCI_{t-1}$	0.079	0.000	0.270	0.000	1.000	0.058***	0.000**	0.234	0.000	1.000
$SIZE_{t-1}$	14.260	14.210	0.870	12.482	16.740	14.644***	14.650***	0.845	12.482	16.740
ROA_{t-1}	0.041	0.049	0.083	−0.365	0.209	0.019***	0.023***	0.073	−0.365	0.209
FIN_{t-1}	0.080	0.000	0.260	−0.195	1.367	0.039***	0.000	0.162	−0.195	1.367
$TOBINQ_{t-1}$	2.180	1.709	1.489	0.866	9.931	2.046***	1.646***	1.325	0.866	9.931
LEV_{t-1}	0.433	0.418	0.282	0.050	1.722	0.535***	0.541***	0.223	0.050	1.722
$Liquidity_{t-1}$	0.223	0.168	0.178	0.050	1.262	0.246***	0.176*	0.222	0.050	1.262
$ENVI_{t-1}$	0.127	0.000	0.333	0.000	1.000	0.198***	0.000***	0.399	0.000	1.000
$Competition_{t-1}$	0.071	0.072	0.005	0.062	0.076	0.069***	0.070***	0.005	0.062	0.076
ABS_ACC_{t-1}	0.083	0.053	0.096	0.001	0.590	0.069***	0.047***	0.082	0.001	0.590

This table presents descriptive statistics. NSOEs and SOEs represent non-state controlled and state-controlled firms, respectively. The variables are defined in Table 2. All variables but dummy variables are winsorized at the 1% and 99% levels. ***, **, and * indicate significant difference between the two sub-groups at the 1%, 5% and 10% levels separately, based on a two-tailed t-test.

6.4. Test of hypothesis H2

Table 6 presents the evidence for hypothesis H2. As mentioned in Section 3.2, non-tax based subsidy is more subject to the discretion of authorities, so we are interested to see if the impact of state subsidy on NSOEs' decisions to disclose CSR information is more likely to be through non-tax based channels. As can be seen from Table 6, state subsidies is more likely to motivate firms to make CSR disclosure through non-tax based channels than tax-based channels, and such findings are confined to NSOE firms. For instance, for the NSOE subsample, the coefficient on non-tax based subsidy ($NTAX_{t-1}$) is 23.150 (z-stat = 3.655). The marginal effect suggests that one percent increase in non-tax subsidies per asset increases the likelihood of CSR disclosure by 1.746%. In contrast, for SOEs, the coefficient on $NTAX_{t-1}$ is only 1.120 and statistically insignificant. However, the coefficient on TAX_{t-1} is significantly negative, suggesting that tax-based subsidies have reduced

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Table 4
Pearson correlation matrices.

	$DISCI_t$	SUB_{t-1}	TAX_{t-1}	$NTAX_{t-1}$	$DISCI_{t-1}$	$SIZE_{t-1}$	ROA_{t-1}	FIN_{t-1}	$TOBINQ_{t-1}$	LEV_{t-1}	$Liquidity_{t-1}$	$ENVI_{t-1}$	$Competition_{t-1}$	ABS_ACC_{t-1}
$DISCI_t$		−0.0383	−0.0199	−0.043	0.5690*	0.1251*	0.0756*	0.0336	−0.0690*	−0.0287	0.1343*	0.0125	0.0520*	−0.0349
SUB_{t-1}	0.0182		0.8930*	0.4661*	−0.0422	−0.0301	−0.0508*	0.0077	0.0498	0.03	0.0122	0.0311	0.0300	0.0237
TAX_{t-1}	−0.0059	0.8957*		0.0315	−0.0316	−0.0443	−0.0945*	−0.0225	0.0672*	0.0484	0.0318	0.0587*	0.0599*	0.0461
$NTAX_{t-1}$	0.0546*	0.4648*	0.0327		−0.0357	0.0272	0.0749*	0.0624*	−0.0195	−0.0226	−0.0344	−0.0536*	−0.0528*	−0.0419
$DISCI_{t-1}$	0.7645*	0.0024	−0.0204	0.0417		0.1358*	0.0455	−0.0014	−0.0411	−0.0239	0.0337	0.0363	0.0116	−0.0477
$SIZE_{t-1}$	0.0797*	0.0036	0.0087	−0.0056	0.0547*		0.1423*	0.0746*	0.2814*	−0.0099	0.1619*	−0.0273	0.1587*	0.0243
ROA_{t-1}	0.1179*	−0.0211	−0.0555*	0.0812*	0.0872*	0.1184*		0.0900*	0.0006	−0.3700*	0.1059*	−0.0519*	0.0845*	−0.0628*
FIN_{t-1}	0.0244	0.0515*	0.0477*	0.0293	−0.0169	−0.0366	0.2153*		−0.1234*	0.037	−0.0548*	0.0291	0.0426	0.1816*
$TOBINQ_{t-1}$	−0.0708*	0.0437	0.0453	0.0044	−0.0660*	0.2799*	−0.2413*	−0.1078*		−0.1687*	0.0674*	−0.0780*	0.0065	0.1284*
LEV_{t-1}	−0.0593*	−0.0279	−0.0002	−0.0715*	−0.0532*	0.008	−0.5312*	−0.1059*	0.2579*		0.0137	0.0353	−0.0048	0.1587*
$Liquidity_{t-1}$	0.0589*	0.0236	0.0226	0.0108	0.0615*	0.2063*	0.0731*	−0.0892*	0.1607*	−0.0043		−0.0659*	0.2770*	−0.0235
$ENVI_{t-1}$	0.0415	−0.0346	−0.009	−0.0609*	0.0311	0.0587*	−0.0014	0.03	−0.0018	0.0162	−0.0632*		0.0052	−0.0654*
$Competition_{t-1}$	0.0371	0.0347	0.0530*	−0.0203	−0.0032	0.0366	0.1254*	0.1110*	−0.0980*	−0.1799*	0.2791*	0.0255		−0.0325
ABS_ACC_{t-1}	−0.0087	0.009	−0.0013	0.0147	−0.0222	−0.0466*	−0.1079*	0.2009*	0.1365*	0.2408*	−0.0108	0.0656*	0.002	

This table presents Pearson correlation matrices. Above (below) the diagonal is for SOEs (NSOEs), respectively. The variables are defined in Table 2. All variables but dummy variables are winsorized at the 1% and 99% levels.

* Significant difference between the two sub-groups at the 5% levels, based on a two-tailed *t*-test.

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Table 5
Test of hypothesis H1, the impact of total subsidies on CSR disclosure choice.

Variables	Expected sign	Dependent = Prob($DISCI_t$)			
		SOEs		NSOEs	
		Coefficient	Marginal effect	Coefficient	Marginal effect
SUB_{t-1}	+	−7.101	−0.793	21.899**	1.654
		(−1.009)		(2.550)	
				[0.018]	
$DISCI_{t-1}$	+	2.260***	0.252	3.196***	0.241
		(8.609)		(9.889)	
$SIZE_{t-1}$	+	0.205**	0.023	0.242**	0.018
		(2.473)		(2.184)	
ROA_{t-1}	+	0.958	0.107	4.689***	0.354
		(1.412)		(7.281)	
FIN_{t-1}	+	0.461	0.051	−0.067	−0.005
		(1.020)		(−0.195)	
$TOBINQ_{t-1}$	?	−0.103	−0.012	−0.137**	−0.010
		(−1.616)		(−2.540)	
LEV_{t-1}	+	−0.195	−0.022	−0.223	−0.017
		(−0.513)		(−0.571)	
$Liquidity_{t-1}$	–	0.629**	0.070	−0.186	−0.014
		(2.418)		(−0.532)	
$ENVI_{t-1}$	+	0.004	0.000	0.053	0.004
		(0.012)		(0.212)	
$Competition_{t-1}$	?	17.081	1.907	80.105***	6.049
		(0.760)		(3.575)	
ABS_ACC_{t-1}	–	−0.193	−0.022	0.159	0.012
		(−0.206)		(0.238)	
Intercept	?	−5.478***		−11.628***	
		(−2.896)		(−4.230)	
Industry effect		Yes		Yes	
Year effect		Yes		Yes	
Obs.		1468		1748	
Pseudo R^2		0.345		0.557	

This table presents regression results of the impact of state subsidies on CSR disclosure choice. The variables are defined in Table 2. All variables but dummy variables are winsorized at the 1% and 99% levels. The numbers reported in the parentheses are z-statistics clustered by year. The *p*-value of the difference between SOEs and NSOEs sub-samples in the coefficient on SUB_{t-1} is reported in the brackets. ***, **, and * indicate significant difference at the 1%, 5% and 10% levels separately.

the incentives of SOEs to disclose CSR information.[19] Moreover, we separately compare the coefficients of $NTAX_{t-1}$ and TAX_{t-1} between the two groups. The results show that the effects of both tax and non-tax based subsidies on CSR disclosure are distinguishable between the two groups. These findings are consistent with the prediction of hypothesis H2 that non-tax based subsidies have a greater positive impact than tax-based subsidies on NSOEs' decision to disclose CSR information. Finally, consistent with the results reported in Table 5, the vast majority of control variables have signs as expected.[20]

6.5. Robustness check and further analysis

6.5.1. Alternative proxy for CSR disclosure

As a robustness check, we replicate our tests of hypotheses H1 and H2 with an alternative measure of CSR disclosure as the dependent variable. We use the extent of CSR reporting, which is measured as an overall rating of CSR reporting and manually collected from an independent CSR rating agency Runling CSR Ratings (RKS: http://www.rksratings.com). Each firm's CSR reporting is rated along four dimensions. First, an overall evaluation based on a firm's CSR strategy, the extent of stakeholders' participation in CSR activities, the comparability of CSR disclosure across time, the innovativeness of CSR activities, and the extent of external auditing. Second, a content evaluation based on the extent of leadership and organizational system in place for implementing CSR activities. Third, a technical evaluation based on transparency, regularity and availability of CSR information. Fourth, an industrial evaluation, which focuses on CSR activities associated with industry-specific factors. We measure the extent of CSR disclosure ($EXTENT_t$) by ranking firms each year by their overall rating of

[19] This result should be interpreted with caution because additional robustness tests reported in Section 6.5 reveal this particular finding does not hold when alternative test specifications are applied to implement the analyses.

[20] We also use dummy variables for non-tax and tax related subsidies as a robustness check, and our findings remain unaffected. Untabulated analysis suggests that the regression coefficients on dummy variables of non-tax and tax related subsidies are 0.927 (z-stat = 4.13) and 0.041 (z-stat = 0.34) respectively in the NSOE sub-sample, and −0.053 (z-stat = −0.25) and −0.218 (z-stat = −1.60) respectively in the SOE subsample. Overall, these are consistent with hypothesis H2.

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Table 6
Test of hypothesis H2, the impact of tax and non-tax based subsidies on CSR disclosure choice.

Variables	Expected sign	Dependent = Prob($DISCI_t$)			
		SOEs		NSOEs	
		Coefficient	Marginal effect	Coefficient	Marginal effect
$NTAX_{t-1}$	+	1.120	0.125	23.150***	1.746
		(0.154)		(3.655)	
				[0.011]	
TAX_{t-1}	+	−33.918***	−3.776	25.248	1.905
		(−3.932)		(1.392)	
				[0.029]	
$DISCI_{t-1}$	+	2.260***	0.252	3.201***	0.241
		(8.815)		(10.054)	
$SIZE_{t-1}$	+	0.215**	0.024	0.242**	0.018
		(2.506)		(2.164)	
ROA_{t-1}	+	1.106	0.123	4.665***	0.352
		(1.429)		(6.364)	
FIN_{t-1}	+	0.478	0.053	−0.072	−0.005
		(1.081)		(−0.210)	
$TOBINQ_{t-1}$	?	−0.104	−0.012	−0.138**	−0.010
		(−1.618)		(−2.461)	
LEV_{t-1}	+	−0.220	−0.025	−0.227	−0.017
		(−0.570)		(−0.574)	
$Liquidity_{t-1}$	−	0.609**	0.068	−0.189	−0.014
		(2.325)		(−0.540)	
$ENVI_{t-1}$	+	−0.013	−0.002	0.051	0.004
		(−0.036)		(0.205)	
$Competition_{t-1}$	?	13.357	1.487	79.798***	6.020
		(0.621)		(3.584)	
ABS_ACC_{t-1}	−	−0.265	−0.030	0.170	0.013
		(−0.283)		(0.253)	
Intercept	?	−5.371***		−11.619***	
		(−2.970)		(−4.199)	
Industry effect		Yes		Yes	
Year effect		Yes		Yes	
Obs.		1468		1748	
Pseudo R^2		0.347		0.558	

This table presents regression results of the impact of tax and non-tax based subsidies on CSR disclosure choice. The variables are defined in Table 2. All variables but dummy variables are winsorized at the 1% and 99% levels. The numbers reported in the parentheses are z-statistics clustered by year. The *p*-value of the difference between SOEs and NSOEs sub-samples in the coefficients on $NTAX_{t-1}$ and TAX_{t-1} are reported in the brackets. ***, **, and * indicate significant difference at the 1%, 5% and 10% levels separately.

CSR reporting. As such, the variable measuring the extent of CSR disclosure ranges from 1 to 10, and a Poisson regression model is therefore employed.[21] In an effort to provide comprehensive evidence, as well as maximize the sample size, we pool all firms (including mandatory adopters) with available data together and repeat the main analyses using $EXTENT_t$ as the dependent variable. However, due to missing values for CSR scores, the sample used for the test is reduced to 1021 observations.

Table 7 presents this set of analyses. Panel A provides the summary statistics for the main variables. The extensiveness of CSR reporting is significantly higher among SOEs than NSOEs (Mean of $EXTENT_t$: 4.978 for NSOEs versus 5.661 for SOEs). Consistent with the results reported in Table 3, state subsidies relative to total assets are significantly lower for SOEs (Mean of SUB_{t-1}: 0.006 for NSOEs versus 0.005 for SOEs). When decomposing state subsidies into tax-based and non-tax based items, we find that the difference in total subsidies between the two groups is primarily attributed to the latter component (Mean of $NTAX_{t-1}$: 0.005 for NSOEs versus 0.004 for SOEs). Panel B presents the results of multivariate analyses. As can be seen from columns (1) and (2), the coefficients on SUB_{t-1} are 3.429 for SOEs (z-stat = 1.727) and 7.176 for NSOEs (z-stat = 2.375). A further test for equality of the coefficients between the two groups reveals that state subsidy improves the extensiveness of CSR disclosure to a greater extent among NSOEs than SOEs, which is consistent with our hypothesis H1. Columns (3) and (4) provide findings generally consistent with our hypothesis H2. For instance, for SOEs, the coefficient on $NTAX_{t-1}$ is 3.791 (z-stat = 1.871) while that on TAX_{t-1} is 2.960 (z-stat = 0.392). For NSOEs, the coefficient on $NTAX_{t-1}$ is 9.831 (z-stat = 4.233) and that on TAX_{t-1} is -5.423 but insignificant. In addition, there is a statistically significant difference in the coefficient of $NTAX_{t-1}$ between the two sub-samples (p-value = 0.000). These findings suggest that the distinction between tax and non-tax based subsidies is important for explaining the extent of CSR disclosure. Finally, turning to the control

[21] Since the industrial criterion was absent in the evaluation framework prior to 2010, using overall scores to measure the extent of CSR disclosure is incomparable across years. Thus, we do not attempt to use the raw scores, but instead construct a ranking data commonly employed in prior literature.

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Table 7
The impact of state subsidies on the extent of CSR disclosure.

	NSOEs			SOEs		
	Obs.	Mean	Median	Obs.	Mean	Median
Panel A: Summary statistics for the main variables						
$EXTENT_t$	370	4.978	5.000	651	5.661***	6.000***
SUB_{t-1}	370	0.006	0.004	651	0.005***	0.002***
TAX_{t-1}	370	0.001	0.000	651	0.001	0.000
$NTAX_{t-1}$	370	0.005	0.003	651	0.004**	0.002***

		Dependent = $EXTENT_t$			
	Expected sign	SOEs (1)	NSOEs (2)	SOEs (3)	NSOEs (4)
Panel B: Multivariate analysis					
SUB_{t-1}	+	3.429*	7.176**		
		(1.727)	(2.375)		
			[0.055]		
$NTAX_{t-1}$	+			3.791*	9.831***
				(1.871)	(4.233)
					[0.000]
TAX_{t-1}	+			2.960	−5.423
				(0.392)	(−1.125)
					[0.295]
$EXTENT_{t-1}$	+	0.081***	0.085***	0.081***	0.085***
		(4.836)	(7.621)	(4.950)	(7.309)
$SIZE_{t-1}$	+	0.061**	−0.003	0.061**	−0.010
		(2.493)	(−0.107)	(2.531)	(−0.379)
ROA_{t-1}	+	0.137	0.849*	0.135	0.848*
		(0.796)	(1.885)	(0.767)	(1.791)
FIN_{t-1}	+	0.172	0.081	0.172	0.088
		(1.275)	(0.838)	(1.239)	(0.917)
$TOBINQ_{t-1}$	?	−0.040**	−0.063***	−0.040**	−0.062***
		(−2.115)	(−3.096)	(−2.113)	(−3.269)
LEV_{t-1}	+	0.211**	−0.228	0.210**	−0.227
		(2.412)	(−1.037)	(2.314)	(−0.969)
$Liquidity_{t-1}$	−	0.010	0.109***	0.010	0.118***
		(0.180)	(2.796)	(0.186)	(3.194)
$ENVI_{t-1}$	+	0.041	−0.070	0.042	−0.081
		(0.738)	(−0.606)	(0.739)	(−0.706)
$Competition_{t-1}$	?	20.058**	−15.091	20.081**	−16.439
		(1.974)	(−0.798)	(1.971)	(−0.844)
ABS_ACC_{t-1}	−	0.305	0.208*	0.307	0.212*
		(1.157)	(1.674)	(1.175)	(1.802)
Intercept	?	−1.137	2.387	−1.141	2.595
		(−1.003)	(1.389)	(−1.008)	(1.481)
Industry effect		Yes	Yes	Yes	Yes
Year effect		Yes	Yes	Yes	Yes
Obs.		651	370	651	370
Log Pseudo-likelihood		−1456.681	−810.9459	−1456.521	−809.675

This table presents results of the impact of state subsidies on the extent of CSR disclosure. The variables are defined in Table 2. All variables but dummy variables are winsorized at the 1% and 99% levels. The numbers reported in the parentheses are z-statistics clustered by year. The *p*-value of the difference between SOEs and NSOEs sub-samples in the coefficients on SUB_{t-1}, $NTAX_{t-1}$ and TAX_{t-1} are reported in the brackets. ***, **, and * indicate significant difference at the 1%, 5% and 10% levels separately.

variables, most of them have signs as expected though with some exceptions. The results are consistent with Bouten et al. (2012), who recognize that the determinants underlying the decision to disclose and the disclosure level could be different.

6.5.2. Two-stage least squares regressions

While we assume that state subsidies are exogenous to firms' voluntary disclosure decisions, it is still possible that both subsidies and CSR disclosure are endogenously determined by some unobservable firm characteristics, which could bias the coefficient estimates in the main regressions. To enhance the robustness of our evidence, we employ a two-stage least squares (2SLS) estimation and repeat our main analyses. The first instrumental variable (IV) we apply is logarithm of the number of listed firms in the province where the firm is situated (*N_FIRMS*). We follow Chen et al. (2008) and use it as a proxy for budget constraint of the local government. The more are the listed firms in a province, the more difficult it is for the local firms to acquire subsidies. This is especially the case for NSOEs because the SOEs are likely to be prioritized when the local governments face budget constraints. However, *N_FIRMS* is unlikely to directly affect a firm's voluntary

Table 8
Two-stage least squares (2SLS) regression.

	SUB_{t-1} 1st stage	Prob($DISCI_t$) 2nd stage	$NTAX_{t-1}$ 1st stage	Prob($DISCI_t$) 2nd stage	TAX_{t-1} 1st stage	Prob($DISCI_t$) 2nd stage
Panel A: SOE subsample						
IND_SUB_{t-1}	0.882***		0.430***		0.386***	
	(10.14)		(3.19)		(3.44)	
N_FIRMS_{t-1}	0.007*		0.008**		-0.0004	
	(1.75)		(2.09)		(-0.29)	
SUB_{t-1}		5.473				
		(1.21)				
$NTAX_{t-1}$				7.628		
				(0.87)		
TAX_{t-1}						15.340
						(1.21)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1458	1458	1458	1458	1458	1458
R-squared	0.067	0.325	0.073	0.322	0.098	0.316
Test of weak identification						
Kleibergen-Paap F statistic		197.63***		17.681**		7.77**
Test of overidentification						
Hansen J statistic		1.831		2.348		1.239
Panel B: NSOE subsample						
IND_SUB_{t-1}	0.806***		0.694***		0.115	
	(5.54)		(5.44)		(1.49)	
N_FIRMS_{t-1}	−0.005*		−0.002		-0.002***	
	(−1.94)		(−1.08)		(-5.17)	
SUB_{t-1}		6.402**				
		(2.03)				
$NTAX_{t-1}$				7.890**		
				(2.03)		
TAX_{t-1}						29.105
						(1.10)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1720	1720	1720	1720	1720	1720
R-squared	0.049	0.569	0.051	0.565	0.045	0.523
Test of weak identification						
Kleibergen-Paap F statistic		55.667***		80.269***		18.003**
Test of overidentification						
Hansen J statistic		1.111		0.896		1.971

This table presents the results for the two-stage least squares regression with *IND_SUB* and *N_FIRMS* as the instruments. *SUB*, *NTAX*, and *TAX* are instrumented respectively as the dependent variables in the first-stage regressions. The dependent variable in the second-stage regression is the probability of voluntary CSR disclosure. The variables are defined in Table 2. All variables but dummy variables are winsorized at the 1% and 99% levels. The numbers reported in the parentheses are z-statistics clustered by year. ***, **, and * indicate significant difference at the 1%, 5% and 10% levels separately.

CSR disclosure, making it a valid instrument for the 2SLS estimates. The second instrument is the industry median level of subsidies in a firm's region for a fiscal year (*IND_SUB*). If the industry level of subsidies in a region is high, firms within the industry and region are more likely to be subsidized. However, it is less likely that the overall industry-region level of subsidies have a direct impact on cross-sectional variations in the firm-level CSR disclosures. Hence, we consider *IND_SUB* to be a valid instrument as well.

Table 8 presents the results for the 2SLS regressions, where the endogenous variables, *SUB*, *NTAX* and *TAX*, are instrumented separately. Panel A reports the results for the SOE subsample. In the first-stage estimation, *IND_SUB* takes on a positive and significant coefficient, consistent with a firm receiving more subsidies if its industry-region level of subsidies is higher. The coefficient on *N_FIRMS* is significantly positive when the dependent variables are *SUB* and *NTAX*. This suggests that when local governments have more budget constraints, they tend to prioritize SOEs in offering subsidies, and especially for those granted through the non-tax channels. The Kleibergen-Paap F-statistics range from 7.77 to 197.63 and are statistically significant at the 1% level, which supports that the models are not subject to weak instrument problems. In addition, the insignificant Hansen J statistics suggest that our instruments are exogenous and uncorrelated with the error terms. In the second stage regression, we find insignificant coefficient estimates for *SUB*, *NTAX* and *TAX*, corroborating our conjecture that the sensitivities of CSR disclosures to state subsidies are limited for SOEs.

Panel B reports the results for the NSOE subsample. In the first-stage regression, the coefficient on *IND_SUB* is still positive and significant. However, the coefficient on *N_FIRMS* turns to be significantly negative, indicating that NSOEs might be dis-

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Table 9
Propensity score matching estimation for subsidized and unsubsidized firms.

		No. of observations	Mean	Difference (Subsidized-unsubsidized)	T-statistics
SOEs					
$DISCI_t$	Unsubsidized	159	0.107	−0.031	−0.97
	Subsidized	159	0.075		
NSOEs					
$DISCI_t$	Unsubsidized	169	0.036	0.053	2.03**
	Subsidized	169	0.089		

In this table, we classify our sample into subsidized and unsubsidized firms in year t − 1 by employing a propensity score matching procedure. The propensity score is estimated as a function of $SIZE_{t-1}$, ROA_{t-1}, LEV_{t-1}, IND_SUB_{t-1}, NEG_ROA_{t-1}, $FISCAL_{t-1}$, N_FIRMS_{t-1}, and year and industry dummy variables. The outcome variable is CSR disclosure choice in year t ($DISCI_t$). The variables are defined in Table 2. All variables but dummy variables are winsorized at 1% and 99% levels. ***,**, and * indicate significant difference at the 1%, 5% and 10% levels separately.

advantaged when the budget constraints of the local governments are high. Again, the diagnostic tests suggest that the instruments we construct are valid. The second-stage regression results show a significantly positive relation between subsidies and CSR disclosure, and this effect is concentrated in non-tax-related subsidies, which further confirms our hypotheses H1 and H2.

6.5.3. Propensity score matching

Thus far, we assume that state subsidies are exogenous to firms' voluntary disclosure decisions. However, the decisions of local governments on whether to subsidize firms in their jurisdictions may depend on unobserved firm characteristics, which may also affect a firm's decision to disclose CSR information. To enhance the robustness of our evidence, we employ a propensity score matching (PSM) procedure, which allows us to identify a control group of firms that are not subsidized and exhibit no observable differences in characteristics relative to firms that are subsidized. Matching on observable firm characteristics aims to mitigate (but not to eliminate) concerns over non-random selection.

To implement the PSM approach, we first calculate the probability of a firm being subsidized by the government for the NSOE and SOE subsamples separately. The propensity score is estimated as a function of firm-, industry- and region-level characteristics, including firm size (*SIZE*), return on assets (*ROA*), leverage (*LEV*), pre-subsidy ROA (*NEG_ROA*), industry median of subsidies within a region for a fiscal year (*IND_SUB*), provincial fiscal deficit (*FISCAL*), the number of listed firms in the province (*N_FIRMS*), and year and industry dummy variables. The variables are defined in Table 2. To ensure that the firms in the control group are sufficiently similar to those in the treatment group, we perform a strict one-to-one matching with the common support required. Untabulated results reveal that, after matching, the treatment and control groups appear to be largely indistinguishable in terms of the characteristics mentioned above. This further strengthens the validity of our matching strategy.

Table 9 presents the results of propensity score matching estimation. For SOEs, the average probability of voluntarily disclosing CSR information is 0.107 for unsubsidized firms, compared with 0.075 for otherwise similar firms that are subsidized. However, the difference between the two groups is not statistically significant with *t*-statistics of −0.97. In contrast, for NSOEs, the average likelihood of voluntary CSR disclosure is 0.036 for unsubsidized firms, relative to 0.089 for the subsidized counterparts. The difference between the two groups is statistically significant at the 5% level. Taken together, these findings are consistent with hypothesis H1 that non-state owned firms with state subsidies are more likely to be pressurized than state-owned firms to disclose CSR information so as to address political costs concerns.

6.5.4. The conditioning effect of political corruption

In this study, we draw on the political cost hypothesis (Watts and Zimmerman, 1978, 1986) to explain the influence of Chinese state subsidies on CSR disclosure. We show that the effect occurs mainly when (i) the NSOEs are recipients or (ii) the subsidies are offered through non-tax channels, which we suggest are two conditions associated with greater political costs. To further substantiate our conjecture that firms' political cost considerations drive the positive relation between state subsidies and CSR disclosure, we examine if this relation is more pronounced among firms operating in more corrupt environment, which we argue would further exacerbate political costs. Firms linked with corruptions are associated with greater political costs since they are more exposed to litigation risk, regulatory scrutiny, and public pressure. For instance, existing studies show that Chinese firms with higher likelihood of bribery are associated with underperformance (Cai et al., 2011) and lower market valuation (Zeng et al., 2016). As such, these firms have greater incentives to strengthen their disclosures to improve public relations and reduce public outcry. For instance, empirical evidence reveals that Chinese firms provide higher quality disclosures in response to the rise in political costs due to their association with corruption (Chen et al., 2015).

Following the methodology of Butler et al. (2009) and Smith (2016), we measure the level of corruption as the yearly number of corruption convictions from each Chinese province divided by yearly total number of corruption convictions. A province is classified as less (more) corrupt if the above ratio is below (above) the year median. The data on corruption con-

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Table 10
The conditioning role of political corruption.

	Dependent = Prob($DISCl_t$)			
	Low corruption (1)	High corruption (2)	Low corruption (3)	High corruption (4)
Panel A: NSOE subsample				
SUB_{t-1}	15.506**	37.741***		
	(2.021)	(3.327)		
P-value for equality	[p = 0.053]			
$NTAX_{t-1}$			15.902**	39.743***
			(2.128)	(3.795)
P-value for equality			[p = 0.017]	
TAX_{t-1}			18.155	45.991*
			(1.305)	(1.896)
P-value for equality			[p = 0.278]	
Controls	Yes	Yes	Yes	Yes
Year effect	Yes	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes	Yes
Obs.	835	828	835	828
Pseudo R^2	0.704	0.429	0.704	0.430
Panel B: SOE subsample				
SUB_{t-1}	−10.858	3.778		
	(−1.290)	(0.292)		
P-value for equality	[p = 0.20]			
$NTAX_{t-1}$			−3.788	11.235
			(−0.475)	(0.690)
P-value for equality			[p = 0.382]	
TAX_{t-1}			−36.473***	−18.209
			(−3.428)	(−1.597)
P-value for equality			[p = 0.385]	
Controls	Yes	Yes	Yes	Yes
Year effect	Yes	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes	Yes
Obs.	795	585	795	585
Pseudo R^2	0.407	0.256	0.408	0.258

This table reports the results using political corruption as a conditioning variable. $Corruption_{i,t}$ is measured at the provincial level, which is defined as the number of corruption convictions at province *i* in year *t* divided by the total number of corruption convictions in year *t*. A province is classified as a low (high) corruption region if $Corruption_{i,t}$ is below (above) the year median. The other variables are defined in Table 2. All variables but dummy variables are winsorized at the 1% and 99% levels. The numbers reported in the parentheses are z-statistics clustered by year. The numbers reported in the brackets are p-values of testing the equality of the coefficients between low and high corruption subsamples. ***, **, * indicate significant difference at the 1%, 5% and 10% levels separately.

victions are manually collected from the *China Procuratorial Yearbook*, which reports the number of annual registered cases on corruption committed by public officials in the procurator's office in each province. The corruption cases include bribery, misappropriation of public funds, collective illegal possession of public funds, unstated source of large property, abuse of power, dereliction of duty and fraudulent practices.

Table 10 presents our additional analysis of the conditioning effect of corruption on the relation between Chinese state subsidies and CSR disclosure. Panel A reports the results for the NSOE subsample. In columns (1) and (2), the findings indicate that the positive relation between subsidies and CSR disclosure is significantly higher for firms operating in more corrupt regions. The results in columns (3) and (4) further show that the effect of non-tax based subsidies on CSR disclosure is significantly greater among firms domiciled in more corrupt regions. Panel B reports the results for the SOE subsample. However, nearly all the coefficients on subsidy and subsidy components reveal no statistically significant differences between more and less corrupt regions. Overall, to the extent corruption escalates political costs, the findings in Table 10 further substantiate our inference that political cost considerations drives the evidence consistent with our hypotheses H1 and H2.

7. Conclusion

The objective of our study is to examine the effect of state subsidies on CSR disclosures in China.[22] Using a sample of Chinese manufacturing firms over the period of 2008–2012, we obtain two original findings. First, a significantly positive association between voluntary CSR disclosure and state subsidies is more pronounced among the NSOEs than SOEs. Second, the

[22] Although our evidence is consistent with firms seeking to "look good" through CSR disclosures, the main inference and incremental contribution of our study to the relevant literature is that government financial support through means such as state subsidies could incentivize firms to offer CSR disclosures to help alleviate political cost concerns. .

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positive effect of state subsidies on voluntary CSR disclosure among NSOEs is attributed mainly to the non-tax related subsidies. We argue that these findings are consistent with the political cost hypothesis (Watts and Zimmerman, 1978) applied to the context of Chinese political economy. Our findings are robust to controls for the other determinants of CSR disclosure identified by previous studies based on Western developed markets. Our focus on the effect of state subsidies also distinguishes this paper from previous studies of the determinants of CSR disclosure in China.[23] Our findings have implications for both the academic literature and policy makers.

Beyer et al. (2010) suggest that the corporate information environment comprises of three components, i.e. firms' voluntary disclosure, mandatory disclosures required by regulators, and analyst research, with voluntary disclosure being most important since managers have superior information about the firm. Based on the seminal work of Watts and Zimmerman (1978, 1986), academic studies have sought to establish evidence for the political cost considerations as an explanation of voluntary corporate disclosure choices (Fields et al., 2001; Healy and Palepu, 2001) including CSR reporting (Gray et al., 2013; Huang and Watson, 2015). However, these studies largely rely on firm size as a proxy for political cost, without properly explaining the validity of this approach (Ball and Foster, 1982; Watts and Zimmerman, 1978). Unlike previous studies, we exploit the institutional features of Chinese style capitalism to apply state subsidies as a proxy for political cost considerations. Since state subsidies are important ways that the government uses to influence corporate policies in China (Allen et al., 2005; Lee et al., 2014), they provide a more direct link between political cost considerations and the managerial incentives and choices underlying corporate disclosure decisions. Our evidence also reveals that this link can be influenced by the level of firms' political connectedness. We show that firms with stronger government support, such as SOEs in our context, are less sensitive to political cost considerations than their NSOE counterparts. In other words, connectedness can potentially moderate the sensitivity of corporate disclosure to political cost considerations.

Policy makers are concerned about the potential costs and benefits of offering subsidies. However, existing empirical studies on the economic effect of subsidies yield a mixed picture across various contexts. On the one hand, some studies suggest a negative impact of subsidies such as overproduction or efficiency loss (Lopez and Galinato, 2007), diversion of government resource (Schwartz and Clements, 1999), and cross-country disputes (Neary, 1994). On the other hand, some studies show that subsidies can strengthen the competitiveness of domestic firms (Bagwell and Staiger, 1989) and alleviate firms' capital constraints (Claro, 2006). Our finding from China suggests that the provision of state subsidies can induce voluntary CSR disclosures, especially among firms that the state does not own and control. In other words, this confirms that state subsidies can be an effective policy tool for the government to guide or influence CSR disclosure decisions. This corroborates Shleifer and Vishny (1994) who argue that politicians can use subsidies to convince private firms to deliver political benefits. However, the influence of state subsidies on corporate behavior that we find might also be more pronounced in transitional economies like China where political and government influence on the business environment is more pervasive than Western developed economies (Allen et al., 2005; Lee et al., 2014).

We also suggest the following avenues for future research. First, given the growing popularity of computer-based narrative reporting analyses in recent years, there is potential to apply this method to a content analysis of CSR reporting. Such adoption would help us better evaluate the quality of CSR disclosure especially when there lacks a consensus about whether and how disclosure should be audited. Second, while there is a long-standing debate on the dollar value of CSR in Western developed countries, little is known about this issue for emerging economies like China. An empirical investigation of this issue and in emerging economies and in relation to CSR disclosure can offer potentially important insights in understanding the economic consequences of CSR. Third, to the extent the 2SLS and PSM procedures we apply as robustness tests have limitations in addressing the potential endogeneity problem in our analysis, future studies could identify novel settings involving an exogenous shock in state subsidies and evaluate its impact on CSR disclosure. While such a setting is currently unavailable to the best of our knowledge, such research opportunity could be generated by future government reforms and regulations. Finally, it would be interesting to study the effects of state subsidies on financial or non-financial disclosures using an international sample. Such research can gain a better understanding of the impact of the country-level institutional characteristics on the relation between state subsidies and corporate disclosure practices.

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[23] Kotchen and Moon (2012) provide evidence that firms increase their CSR performance to offset actions that are perceived as socially irresponsible, and this effect is more pronounced for firms subject to greater public scrutiny. Our study differs from Kotchen and Moon (2012) in three ways. First, they assess CSR performance while we examine CSR reporting. While earlier literature (e.g., Ullmann, 1985) argues that CSR performance and reporting are congruent, more recent studies (Cho et al., 2010; Dhaliwal et al., 2011) suggest that their consequences and determinants can be quite different. Second, Kotchen and Moon (2012) focus on the impact of social irresponsibility behavior while we examine government subsidies, which is a different context because firms that receive government financial support may not necessarily commit social irresponsibility. Third, Kotchen and Moon (2012) examine firms in the U.S., which is a Western developed economy with institutional environment quite different from that of a transitional economy like China.

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Appendix A. Development of CSR reporting in China

Year	Laws/Regulations	Regulators	Main contents
2006	Chinese Company Law (2006)	National People's Congress	Article 5 requires firms to comply with social morality and undertake social responsibility in the course of business
2006	The Guide on Listed Companies' Social Responsibility	Shenzhen Stock Exchange	Article 35 states "The (Shenzhen) Stock Exchange encourages listed companies to establish the social responsibility mechanism and work out social responsibility reports on a regular basis based on their review and evaluation of the status quo."
2008	The Guide Opinion on the Social Responsibility Implementation for the State-Owned Enterprises Controlled by the Central Government (CSOEs)	The State-Owned Assets Supervision and Administration Commission of the State Council	The CSOEs are encouraged to build a CSR information releasing system, providing update and regular information about CSR performance and sustainable development, plans and measures in carrying out CSR
2008	The Shanghai Stock Exchange's Notice Concerning Listed Companies' Implementation of Corporate Social Responsibility Reporting and Internal Control Self-Evaluation Reporting	Shanghai Stock Exchange	Three types of listed companies are required and all companies are encouraged to publish CSR reports from the fiscal year of 2008. The mandated companies include: companies that are listed in the Shanghai Stock Exchange Corporate Governance Index, companies that list shares overseas, and companies in the financial sector
2008	The Shenzhen Stock Exchange's Notice Concerning Listed Companies' Annual Reports	Shenzhen Stock Exchange	The companies that are listed in the Shenzhen Stock Exchange 100 index are mandated and all listed companies are encouraged to publish CSR reports from the fiscal year of 2008
2010	Regulation on Environmental Information Disclosure (Exposure Draft)	The Ministry of Environmental Protection (formerly The State Environmental Protection Administration)	The regulation mandates environmental agencies and heavy-polluting companies to disclose certain environmental information to the public

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