MACQUARIE
University

Determinants and Economic Consequences of Corporate Social Responsibility in China

Xiao Liang

A thesis in fulfilment of the requirement for the Degree of
Doctor of Philosophy

Department of Accounting and Corporate Governance
Faculty of Business and Economics
Macquarie University, NSW 2109, Australia

May 06, 2019

Table of Contents

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

To achieve economic, social and environmental objectives, the Chinese government has directed Chinese firms to acquire strategic assets and expand business abroad through its "Go Global" policy. As a result, Chinese firms have become the world's largest foreign investors since 2016. In the first paper, I examine the relationship between the cross-border acquisition activities and corporate social responsibility (CSR) performance of Chinese firms. I find that Chinese acquirers significantly improve CSR performance following their cross-border acquisitions, suggesting that Chinese acquirers initiate efforts to improve CSR performance to gain legitimacy in host countries. I also find that host country legal origins, social norms, and the exposure of the acquirers to multiple jurisdictions hold the keys to improve the CSR performance of acquirers. In addition, CSR performance of non-State-Owned Enterprises (non-SOEs) are positively affected by cross-border acquisitions, especially that of non-SOEs in heavy-pollution industries. The study provides micro-level evidence on the effect of the government's "Go Out" policy on the CSR practices of Chinese firms. It also explores the implication of corporate acquisition activities on stakeholder welfare.

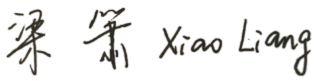
In the second paper, I examine whether firms use CSR activities to signal information about their future prospects to investors and other stakeholders using the pilot program of short selling and margin trading introduced by the China Securities Regulatory Commission in 2010 as a quasi-natural experiment. This pilot program imposes non-fundamentally driven pressure on the stock prices of the pilot firms. I find that the pilot firms enhance their CSR performance to respond to the exogenous shock of the sudden removal of the short-selling and margin-trading bans. When the effect of short selling on CSR is disentangled from the effect of margin trading on CSR performance, I find that the pilot firms respond to the exogenous shock of short-selling pressure by enhancing their CSR performance but not to the exogenous shock of margin trading. The

results suggest that CSR activities can send a positive signal about future prospects to investors and other stakeholders including short sellers.

In the third paper, I examine the effect of mandatory CSR disclosure on financial constraints using a quasi-natural experiment in China that mandates a subset of listed firms to disclose their CSR activities. Using a difference-in-differences research design, I find that firms with mandatory CSR reporting experience an increase in financial constraints after the mandate. Additional analyses reveal that the increase in financial constraints is more pronounced for firms without political connections and firms with better CSR performance. The results suggest that CSR practices that can be valuable for seeking political connections in emerging economies come at the cost of shareholder wealth, with increasing agency problems and financial constraints.

STATEMENT OF ORIGINALITY

I, Xiao Liang, declare that the thesis "Determinants and Economic Consequences of Corporate Social Responsibility in China" and the work presented in it has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.



Xiao Liang

2019.01.22

ACKNOWLEDGMENTS

It is a challenging and rewarding journey to complete the thesis. I would like to acknowledge several people who kindly helped, encouraged and guided me throughout my journey.

First and foremost I would like to express my deepest gratitude to my supervisor Dr. Xiaomeng Chen for her invaluable guidance and support. She is also very kind and generous to help me when I encounter difficulties in both my research and life. I extremely appreciate all her countless time, patience, trust and encouragement throughout my Ph.D. journey. The completion of the thesis would not have been possible without her support.

A lot of thanks also go to my adjunct supervisor, Professor Xianwang Shi, at Zhongnan University of Economics and Law in China. He nurtured my interest in accounting research before I became a master student and gave me the freedom to pursue my research interest. I sincerely appreciate his support and help in the past six years. I am also very grateful to Dr. Hai Wu, at The Australian National University, for his insightful suggestions and support for my research. Special thanks also go to Professor Chris Patel at Macquarie University, for his great encouragement and providing me with the opportunity to present my research in his class.

I would also like to express my gratitude to Faculty of Business and Economics and the High Degree Research Office at Macquarie University for granting me the Ph.D. scholarship to undertake this research. Appreciation particularly goes to Professor Lorne Cummings. Without meeting him in Wuhan in 2015, I would not have the opportunity to complete the Cotutelle Ph.D. program at Macquarie University. I would also like to thank Ms. Lin Bai, Ms. Agnieszka Baginska, Ms. Mel Hubbard and others who assisted and supported me during my Ph.D. candidature.

Moreover, I extend my thanks to my friends, especially Xianling Zhang, Shenghan Cai, Pheobe Zhang, Da Yang, Jason Yin, Jolly Zhou, Bichen Guan, Ynaling Wu, Yanlin Li, Shamim Tashakor and the colleagues in Room 304 of building E4B, for their precious friendship, which made my Macquarie life enjoyful.

Last but not least, I thank my parents for their unconditional love, encouragement and support throughout my life.

1 CHAPTER ONE

OVERVIEW OF THE THESIS

1.1 Introduction

The classical view in economics suggests that maximization of shareholder value is the only responsibility for firms and Friedman (1970) critiques the engagement in Corporate social responsibility (CSR) activities is a waste of shareholders' money for the pursuit of managers' own interests. Economists have long embraced the shareholder-value approach for decades, which posits that firms should be controlled by profit-maximizing shareholders, while other stakeholders are protected by contracts and regulations (Bénabou and Tirole 2010). However, in recent years, there has been an increased focus on CSR. Stakeholders are becoming more environmentally and socially conscious and demanding companies to follow socially responsible practices. The last two decades have witnessed a growing number of firms expressing CSR commitments, initiating CSR projects, increasing CSR investments, and issuing CSR reports. Moreover, many business leaders view CSR as a creative opportunity to fundamentally strengthen their business while contributing to society. They also set CSR as the center of their overall strategies, helping them to address key business issues creatively (Keys 2009). Jensen (2001) posits that firm value is maximized in the long run when the interests of shareholders and other stakeholders are aligned. Given a large number of resources

involved and the increasing interests in CSR practices, many questions must be answered. Why do firms show social responsibility rather than purely pursue profit maximization? Why are some firms engaged in more CSR than others? Are these CSR activities beneficial for the firms?

These questions are complex and difficult to answer and have been discussed since the early 1930s when the Berle-Dodd debate commenced.[1] The main reason is that CSR is affected by many factors both at the macro level (e.g., institutional factors) and the micro level (e.g., organizational factors) (Aguinis and Glavas 2012; Huang and Watson 2015). In addition, there has been a global trend in regulation that requires firms to disclose information on their CSR activities. CSR promotes a vision of business accountability beyond the legal and regulatory requirements of the relevant market and economy to a wide range of stakeholders besides shareholders (Kitzmueller and Shimshack 2012). Less is known about the economic consequences of mandatory CSR disclosure. This thesis aims to examine the factors associated with the determinants and economic consequences of CSR practices in China. Specifically, this thesis first explores the determinants of CSR performance by examining the effect of cross-border acquisitions on the CSR performance of Chinese firms. Next, the thesis investigates how the removal of short selling and margin trading constraints under a pilot program affects the CSR performance of firms. Finally, the thesis examines the economic consequences of the mandatory CSR reporting regulation on firms' financial constraints using the CSR disclosure mandate in China as a quasi-natural experiment.

The remainder of the chapter is organized as follows. Section 1.2 sets out the motivations and background of this thesis. Section 1.3 outlines the research questions and

[1] In the 1930s two American law professors, Adolf A. Berle Jr. and E. Merrick Dodd Jr., publicly debated the issue of "to whom are corporations accountable?" Berle argued that the management of a corporation could only be held accountable to shareholders for their actions, whereas Dodd held that corporations were accountable to both the society in which they operated and their shareholders.

objectives of this study and provides a summary of the three papers incorporated in this thesis. The contributions made by the thesis are outlined in Section 1.4. The organization of the thesis is explained in Section 1.5.

1.2 Motivations and Background

In mainstream literature, CSR remains a concept dominated by Western frames (Jamali and Karam 2018). Prior literature primarily investigates the economic consequences of voluntary CSR activities in developed countries (Margolis et al. 2007). While recent studies have begun to identify the determinants of CSR with many of them focusing on the factors internal to corporations (McGuinness et al. 2017; Rao and Tilt 2015), scant research investigates mandatory CSR disclosure especially in emerging economies (Manchiraju and Rajgopal 2017; Chen et al. 2018). The heterogeneous institutional environments of the emerging economies generate a unique form of socially responsible business and tailor the adaptations of globally dominant CSR practices to the local contexts (Jamali and Neville 2011; Jamali et al. 2017). The different institutional environments of the emerging economies may not make the findings based on CSR performance in developed countries fully applicable to the firms in emerging countries. Therefore, the findings of prior research may not adequately explain the determinants of CSR performance for firms from emerging economies. This thesis aims to fill the gap by exploring the effect of cross-border M&As and the introduction of short selling and margin trading on CSR performance, and the economic consequences of mandatory CSR disclosure.

Paper 1 (Chapter Two) of the thesis is motivated to study the effect of cross-border acquisitions of Chinese firms on their CSR performance for several reasons. First, due to China's strict currency restrictions, cross-border acquisition activities in China are heavily influenced by Chinese government policies and initiatives. It is well recognized in the literature that the government typically intervenes in the market to serve various

social, political and environmental agendas at the cost of shareholder wealth (Chen et al. 2018). The Chinese government's policies and initiatives on foreign investment are no exceptions. Second, in contrast to domestic M&As, firms engaging in cross-border acquisitions face significant and unique changes to their institutional environments and stakeholder composition. At the minimum, through cross-border acquisitions, firms will be exposed to host countries' regulations, legal systems and social norms (Ahern et al. 2015; Erel et al. 2012). To gain legitimacy, Chinese acquirers also must meet the expectations of stakeholders in host countries, including customers, suppliers, employees, governments, and public interest groups, whose expectations are likely to be different from those stakeholders in the home country. These reasons suggest that Chinese acquirers may need to take additional CSR initiatives following cross-border acquisitions.

Paper 2 (Chapter Three) of this thesis uses the short selling and margin trading pilot program in China as a quasi-natural experiment to examine whether firms adjust their CSR activities in response to the potential impact of short selling and/or margin trading on stock prices. The stock market in China has been highly regulated, and the short selling and margin trading were completely banned until recently. On March 31, 2010, the China Securities Regulatory Commission (CSRC) launched a pilot program permitting short selling and margin trading in China for stocks on a designated list. After several rounds of qualification list revisions, more than one-third of total listed stocks in China have been included in the CSRC pilot program and hence the ban on short selling and margin trading on these stocks has been lifted.

The dual design of the CSRC pilot program in China provides an ideal setting to examine the joint effect of short selling and margin trading on the CSR performance of pilot firms relative to that of the non-pilot firms. Short selling and margin trading are integral parts of market mechanisms. Short selling can reduce overpricing and play a disciplinary role as an external governance mechanism, while margin traders have a

speculative nature to exacerbate observed overpricing (Bhojraj et al. 2009). More importantly, the CSRC pilot program represents an exogenous shock to examine whether the pilot firms respond to the threats of short selling and margin trading from non-financial aspects. These pilot firms are selected gradually by the CSRC from 2010 to the present, creating both the time-series and cross-sectional variations in short selling and margin trading restrictions for firms. Therefore, the CSRC pilot program provides a good opportunity to examine whether market mechanisms, such as short selling and/or margin trading that encourage socially responsible practices and discipline managerial practices, would affect the pilot firms' CSR performance relative to that of non-pilot firms in an emerging market.

Paper 3 (Chapter Four) examines the effect of mandatory CSR disclosure on the financial constraints of Chinese firms. The global trend of mandatory CSR reporting amplifies the need to better understand the consequences of mandatory CSR reporting (Grewal et al. 2017; Ioannou and Serafeim 2016). China has mandatory CSR reporting guidelines issued by SSE and SZSE that have required a subset of listed companies to provide CSR reports since 2008. In particular, SSE enforces three types of its listed firms to make mandatory CSR reports: (1) firms included in the SSE Corporate Governance Section Index, (2) firms with shares listed overseas, and (3) firms in the financial sector. SZSE requires firms that are included in the SZSE 100 Index to disclose CSR activities. Other listed firms are encouraged to provide CSR reports voluntarily.

The inability to obtain financing directly relates to financial constraints. Based on the World Business Environment Survey of the investment climate in 2006, 75% of firms in China cite financial constraints as a major obstacle. This figure ranked China as the most financially constrained country among 80 countries where the survey was conducted (Claessens and Tzioumis 2006). Using a voluntary CSR disclosure setting, Cheng et al. (2014) investigate whether CSR performance affects firms' ability to access finance and

find that firms with better CSR performance face lower financial constraints. However, Bhandari and Javakhadze (2017) argue that the allocation of scarce corporate resources to CSR activities could siphon off valuable resources from profitable investment projects, and find that CSR aggravates financial constraints to some extent. The literature presents mixed evidence on whether CSR affects the firm's ability to access finance in capital markets. Given that Chinese government advocates CSR practices has mandated CSR disclosure since 2008, and that China is among the group of countries that are the most financial constrained (Claessens and Tzioumis 2006), the study is motivated to investigate the effect of mandatory CSR disclosure on financial constraints in China.

1.2.1 Economic development with environmental and social concerns in China

China's economy has attained impressive and remarkable achievements during the past four decades. The Chinese government has put much effort toward boosting its socioeconomic development, including implementing political and economic reforms, as evident in the initiation of the Reforms and Opening Up in 1978. Since then China has made great economic advances, resulting in the fastest annual growth rate of gross domestic product (GDP), which averaged at nearly 10% annually and is much higher than the world average level (around 3.5%) during the same period, attracting worldwide attention (Lin et al. 1999; Cai 2006). In 2010, the Chinese economy replaced Japan at second place in the world based on the size of the economy, with the United States occupying the first place (World Bank 2011). However, the fast-growing economy has led China to become the largest energy consumer and carbon-emitter in the world (U.S. Energy Information Administration 2015). The energy-intensive development consumes a large amount of natural resources, especially petroleum and other liquids, which are neither diverse nor sufficient to support the long-term rapid economic development. The rapid economic development also causes severe environmental problems. According to research by the World Bank, the State Environmental Protection Administration and a

team of international experts, the combined economic costs and human health impacts costs of outdoor air and water pollution for China's economy amount to around $US100 billion a year, or about 5.8% of the country's GDP. The environmental problems cannot disappear in a short time and restrict the economic development in turn. New economic policies are aligned with social and environmental reforms emphasizing healthy ecosystems, although economic reform remains the number one priority.

As China's rapid economic development depends on labor-intensive and low-cost industries, occupational safety and health is another concern for stakeholders in these industries. Risky working conditions and occupational diseases and injuries in the mining industry are often reported in the media. The Chinese Ministry of Health estimated that 16 million companies were associated with hazardous materials or working conditions in 2009; there were 18,128 new cases of occupational disease and 748 occupational disease-related deaths each year, with a rapid increase in the number of occupation-related pneumoconiosis cases (Ministry of Health of P.R.China 2009).

Product quality also attracts great public concern. The milk powder scandal in 2008 destroyed the fame of the Chinese dairy industry and the customer trust toward Chinese producers. At least 25 countries stopped all imports of Chinese dairy products (UNESCAP 2010). As a result, the Chinese government released new guidance to improve the quality of all products made in China and set targets for the quality of smart and user-friendly products to achieve international competitiveness.

These environmental and social issues accompanying economic development have prompted China to set sustainable development goals and connect the economy and ecology. Therefore CSR has increasingly been a priority in recent years for the Chinese government to manage stable economic growth and create a balance between economy, environment, and society.

1.2.2 CSR development in China

This thesis focuses on Chinese firms' CSR. China is a fast-growing and maturing country, and CSR is a recent practice in China. Since the Chinese economic reform started in 1978, Chinese society has been experiencing the transition from a centrally planned economy to a more market-oriented economy. After the entry into World Trade Organization (WTO) in the late 1990s, Chinese firms substantially extended their foreign direct investment. Although CSR originated in the western world with the setting of a free market economy, the United Nations began to establish the global CSR framework and promote CSR to the developing countries including China in the 1990s. There has been a little progress in CSR development for Chinese firms at that time. Only 22 CSR reports have been published in China between 1999–2005, containing few details about firms' actual practices on how companies address the environmental, social and governance issues (Avory et al. 2012).

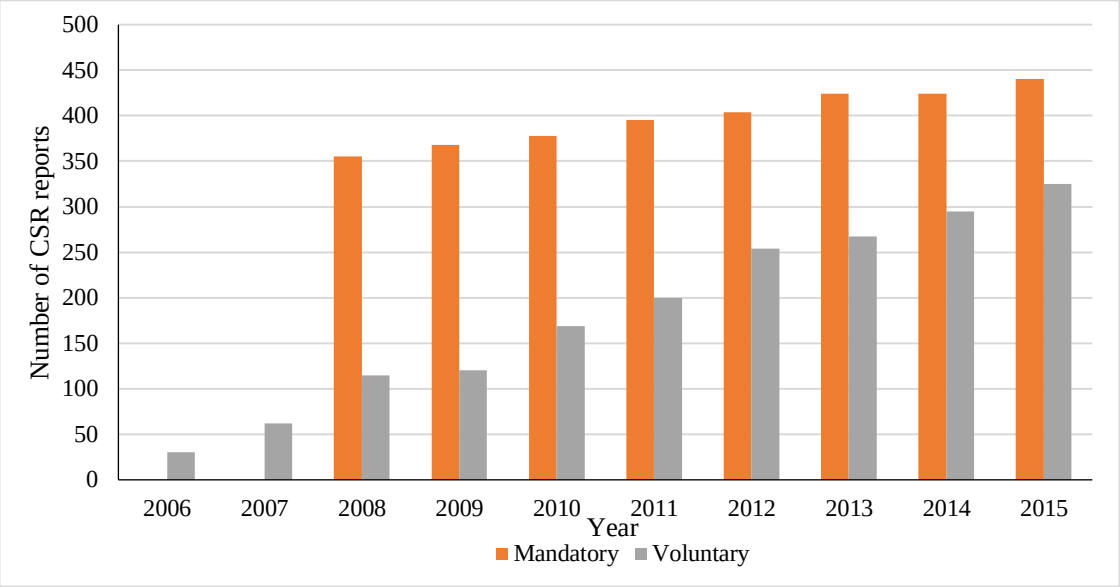
Different from developed countries, the central government in China plays a pivotal role in promoting CSR development in China (McGuinness et al. 2017). In response to the domestic social demands, former General Secretary Hu Jintao signaled in his 11th Five-Year Plan in 2006, articulating the Chinese government shifting's policy focus from accelerating economic growth to ensuring sustainable development and quality growth. The shift indicates that the government plans to balance the economic growth with social and environmental needs. In the same year, the Sixth Plenum of the 16th Central Committee of the Communist Party of China emphasized building a "harmonious society" and strengthening citizens, enterprises, and various organizations' social responsibility.[2] These documents become the grounds of subsequent regulations. Other government sectors and institutions, including SSE and SZSE and the State-owned

[2] See the 16th Party Congress Report http://english.cpc.people.com.cn/66739/4496615.html

Assets Supervision and Administration Commission (SASAC), issued guidelines and recommendations on reporting corporate social and environmental activities. In 2008 SASAC issued CSR guidelines requiring all state-owned enterprises to publish sustainability reports by 2012. SSE and SZSE have implemented mandatory CSR disclosure for a subset of listed firms since 2008 that require these firms to disclose CSR reports with annual financial reports.[3] The Environmental Protection Bureaus and the Department of Commerce also have relevant regulations to monitor firms' CSR practices. Figure 1.1 shows the number of mandatory and voluntary CSR reports disclosed by Chinese listed firms since 2006. In total, Chinese listed firms issued 5,025 CSR reports between 2006 and 2015, which are notably mandatory CSR reports.

Figure 1.1

Annual number of mandatory and voluntary CSR reports in China, 2006–2015



Sources: http://www.sse.com.cn/ and https://www.szse.cn/.

[3] See the "Notice on listed companies' 2008 annual report" of SSE: http://www.sse.com.cn/services/information/xbrl/mediareports/c/c_20150912_3987388.shtml, and "Notice on listed companies' preparation for 2008 annual reports" of Shenzhen Stock Exchange: http://www.csrc.gov.cn/shenzhen/xxfw/tzzsyd/ssgs/ssxxpl/ssplfz/200902/t20090226_95560.htm.

1.3 Aims and Objectives

The dissertation aims to provide empirical evidence on various antecedents to the CSR performance of Chinese firms and the implications of mandatory CSR regulation. This aim is attained by three papers comprising this thesis, which empirically examine the influence of antecedent factors on CSR performance, namely, cross-border acquisitions by Chinese acquirers and the short selling and margin trading pilot program, and investigate the effect of CSR disclosure mandate on firms' financial constraints. Specifically, the three papers have the following objectives:

1. to examine whether Chinese firms' cross-border acquisitions can affect their CSR performance;
2. to examine whether the removal of short selling and margin trading constraints affect CSR performance for the pilot firms;
3. to evaluate the impact of mandatory CSR disclosure regulation on firms' financial constraints.

1.3.1 Paper 1: Cross-border Acquisitions and CSR Performance: Evidence from China

Paper 1 (Chapter Two) examines whether the CSR related benefits can be realized through cross-border acquisitions of Chinese firms. Cross-border acquisitions provide a learning opportunity for Chinese firms to learn advanced technologies and managerial skills, boost innovation, and become major global competitors. The development of global competitiveness for Chinese firms further assists the government to achieve social and environmental objectives of supporting domestic employment, developing a skilled workforce, improving product safety and quality, and establishing less-polluting industries. In addition, stakeholders in the host countries are often concerned about the legitimacy of Chinese acquirers on the social and environmental grounds. These legitimacy concerns may affect the success of Chinese firms' cross-border acquisitions. Recognizing such barriers, Chinese acquirers engage in CSR practices to strengthen

reputation and obtain legitimacy in order to increase their "global presence." Specifically, this study proposes the following hypothesis:

> **Hypothesis:** *Chinese acquirers improve their CSR performance through cross-border acquisitions.*

Paper 1 addresses the first objective of the thesis. Data on CSR ratings for Chinese firms are obtained from the Rankins CSR Ratings (RKS). Cross-border acquisition data for Chinese firms are from the Thomson Reuters SDC Platinum Mergers and Corporate Transactions database and Zero2IPO database. The sample consists of 4,006 firm-year observations covering 38 host countries from 2008 to 2015. Difference-in-differences (DiD) regression is employed to compare the changes of CSR performance of Chinese acquirers following their cross-border acquisitions (treatment firms) and the changes in CSR performance of Chinese firms without cross-border acquisitions (control firms). The result shows that Chinese acquirers significantly improve their CSR performance following their cross-border acquisitions, compared with the control firms. This result is robust to several alternative research designs including DiD estimation with the PSM procedure and the Heckman two-stage regressions. The result is also robust when comparing acquirers engaging in cross-border acquisition activities separately with acquirers pursuing domestic acquisition deals only or non-acquiring firms, or when excluding firms that are cross-listed. In addition, the study finds that the positive effect of cross-border acquisitions on the CSR performance of Chinese acquirers is more pronounced for the acquirers exposed to multiple host countries, exposed to the host countries with common law and French civil law origins and exposed to the host countries with strong social norms.

1.3.2 Paper 2: Short Selling, Margin Trading, and Corporate Social Responsibility

Paper 2 (Chapter Three) examines the effect of the removal of short selling and margin trading bans on CSR performance using the short selling and margin trading pilot

program in China as a quasi-natural experiment. As CSR practices can enhance the corporate image and send a positive signal to the market, refraining firms from opportunistic behaviors and leaving a lower likelihood of uncovering bad news or value-destroying events by short sellers. The potential downward price pressure from short selling also gives managers an incentive to take insurance actions to discourage short selling. Margin trading has always existed in the market, and the formal introduction of margin trading by the CSRC pilot program will not give managers incentives to undertake actions to attract or discourage margin traders. Specifically, the study proposes the following hypotheses:

> **Hypothesis 1**: *The removal of the short selling ban is associated with the change of CSR performance of the pilot firms.*
>
> **Hypothesis 2:** *The removal of the margin trading ban is not associated with the change of CSR performance of the pilot firms.*

The CSR performance data are obtained from the RKS database. The short selling and margin trading pilot list is obtained from the SSE and SZSE websites. The data about short selling and margin trading is from the China Stock Market Trading Research (CSMAR) database. The final sample includes 3,408 firm-year observations between 2008 and 2015.

Paper 2 addresses the second objective of the thesis by evaluating whether the lifting of short selling and margin trading bans enhance CSR performance of the pilot firms. The study employs a DiD research design to examine the effect of the short selling and margin trading on the CSR performance of firms. The result suggests that the removal of short-selling constraints leads to a larger increase in CSR performance for pilot firms compared to non-pilot firms, while margin trading is insignificantly associated with CSR performance. The result is robust when replacing the dependent variable with industry-adjusted CSR score and using a PSM approach with the DiD test to ensure that the result is not driven by potential endogeneity concerns. The parallel trend assumption also holds

for the DiD test. In addition, the study examines the cross-sectional variations in the effect of short-selling threats on CSR performance, and finds that the positive effect of increasing short-selling pressure on CSR performance is more pronounced for firms with additional downward price pressure, bad news disclosures, high bankruptcy risk, and high concentrated ownerships as well as SOEs.

1.3.3 Paper 3: Mandatory CSR Disclosure and Financial Constraints: Evidence from China

Paper 3 (Chapter Four) examines the effect of mandatory CSR disclosure on firms' financial constraints using a quasi-natural experiment in China that mandates a subset of listed firms to disclose their CSR activities. Under mandatory CSR reporting, Chinese firms are obliged to engage in charity, environmental protection, community development, and other CSR activities. These social accomplishments may be achieved by diverting firm resources that otherwise could be deployed for identifying and funding profitable projects. Mandatory CSR disclosure potentially distorts the optimal allocation of corporate resources, reduces profitability and thus restrains the access to external financing. In addition to the direct costs of CSR engagement, CSR is viewed as the result of agency conflicts and moral hazard since managers or controlling shareholders might engage in CSR to further their own agendas, in particular when resources constraints are slack. The hypotheses are proposed as follow:

> **Hypothesis 1:** *Firms with mandatory CSR reporting face greater financial constraints subsequent to the CSR disclosure mandate.*
>
> **Hypothesis 2:** *Firms with mandatory CSR reporting without political connections face greater financial constraints than mandatory CSR reporting firms with political connections subsequent to the CSR disclosure mandate.*

Financial constraints are measured by the *KZ* index, following Kaplan and Zingales's (1997) approach and using the accounting information of the listed firms in China over the period 1998–2013. Using a sample of 3,772 firm-years for the period

between the fiscal year 2006 and 2013, this study employs DiD regression with the PSM procedure to compare the changes in financial constraints of firms that are subject to mandatory CSR reporting (treatment firms) with the changes of the firms that are not mandated to provide CSR reports (control firms) subsequent to the CSR disclosure mandate. The result indicates that, compared with firms that are not mandated to provide CSR reports, firms that are subject to mandatory CSR reporting experience an increase in financial constraints subsequent to the CSR mandate. The study further investigates the possible mechanism through which mandatory CSR reporting affects the ability of firms to access financing, and finds that firms with mandatory CSR reporting without political connections face financial constraints than those of firms that are politically connected following the CSR mandate.

Paper 3 addresses the third objective of the thesis by investigating whether the mandatory CSR reporting regulation affects firms' ability to access external financing. The findings suggest that mandated CSR disclosure requires firms to devote resources to charity, environmental protection, and other CSR activities, potentially distorting corporate resources allocation, reducing financial performance and thus increasing financial constraints, especially for firms without political connections. In addition, the study examines the mediating effect of two types of agency conflicts on the relation between mandatory CSR reporting and financial constraints and finds that the positive effect of mandated CSR disclosure on financial constraints is caused by the agency conflict between major shareholders and minor shareholders. Nevertheless, the study finds that the positive effect of mandate CSR reporting on financial constraints is more pronounced in good CSR performance group.

1.4 Contributions

This thesis contributes to the literature by examining CSR performance with a specific focus on the Chinese context. Prior studies on CSR have largely been conducted

in developed countries (Dyck et al. 2018; Boubakri et al. 2016). There have been calls in the literature to examine CSR performance in countries where institutional environments significantly differ from those in developed countries given the fast development of CSR and growing social concerns in emerging economies (Wang et al. 2016). To promote social development and solve the imbalance between economic development and sustainability, several emerging economies have mandatory CSR regulation, such as China and India. Research on mandatory CSR regulation is scant. While the findings of the study are specific to China, they are relevant to the policy debate of other emerging economies which are experiencing unprecedented CSR initiatives by their regulators due to the concerns related to limited economic resources and environmental and social abuses. The thesis responds to these calls and contributes to the understanding of CSR beyond voluntary setting in developed countries.

Paper 1 (Chapter Two) provides evidence that cross-border acquisitions have implications for stakeholder value. While prior studies focus on shareholder-value maximization of M&As, the implications of M&As on stakeholders are largely ignored (Shleifer and Vishny 2003; Moeller et al. 2005). The findings from this study suggest that Chinese acquirers can gain significant CSR-related knowledge by investing in the host countries where stakeholders have higher CSR expectations. This CSR-based knowledge transfer has not been documented in the prior literature. Next, this study contributes to the emerging literature on the effect of legal origins on the CSR performance of firms. Liang and Renneboog (2017) found a variation in CSR practices across countries with different legal traditions. This study shows that exposure to multiple institutions and legal regimes in host countries is associated with improved CSR performance for acquirers. This evidence suggests that different institutions and regulatory systems may complement each other in promoting various stakeholders' interests, which improves the CSR performance of multinational firms.

Paper 2 (Chapter Three) contributes to the literature by providing empirical evidence on the real effect of the secondary financial markets on corporate behaviors in an emerging market. Prior studies find that short selling threats reduce earnings management and insider trading (Massa et al. 2015b; Fang et al. 2016), but less is known about the effect of short selling threats on firms' non-financial performance. This study fills the gap by demonstrating that the disciplinary role played by short sellers can prompt firms to improve CSR performance to avoid the downward price risk. Next, this study contributes to the literature on the determinants and strategic roles of CSR. Although prior literature has primarily investigated the relation between CSR and financial performance, this study extends the line of research by showing that well-informed investors drive firms' CSR practices. In addition, this study also provides new evidence that CSR plays the signal and insurance roles to protect firms from negative external shocks.

Paper 3 (Chapter Four) contributes to the studies examining mandatory CSR regulation. Prior literature primarily focuses on the effect of voluntary CSR reporting on financial constraints and finds that voluntary CSR reporting can reduce financial constraints (Cheng et al. 2014). Although mandated CSR disclosure in emerging economies has received increasing attention in recent years, empirical evidence on the effect of mandatory CSR reporting on corporate financing is limited. The study provides empirical evidence to show that mandatory CSR disclosure is not beneficial for reducing financial constraints.

Next, this study adds evidence on the antecedent of financial constraints. Investors and lenders take a negative view of mandatory CSR reporting and are less likely to allocate resources to support mandatory CSR reporting firms. Finally, this study also contributes to the literature on examining the effectiveness of government intervention. Although mandatory CSR disclosure is a worldwide trend, this study suggests that

mandatory CSR regulation makes CSR a tool for satisfying political objectives and building political connection at the cost of shareholders' wealth.

1.5 Structure of the Thesis

The remainder of the dissertation comprises four chapters. Chapter Two presents Paper 1, which examines the influence of cross-border acquisitions on the CSR performance of Chinese firms. Chapter Three presents Paper 2, which examines the influence of the removal of short selling and margin trading bans on CSR performance. Chapter Four presents Paper 3, which examines the effect of mandatory CSR disclosure regulation on financial constraints. Chapter Five concludes the thesis by summarizing and synthesizing the three studies and discussing the implications of the findings along with the limitations of the research.

Reference

Aguinis, H., and A. Glavas. 2012. What We Know and Don't Know About Corporate Social Responsibility. *Journal of Management* 38 (4):932-968.

Ahern, K. R., D. Daminelli, and C. Fracassi. 2015. Lost in translation? The effect of cultural values on mergers around the world. *Journal of Financial Economics* 117 (1):165-189.

Avory, B., M. Zhang, and D. Allison-Hope. 2012. Transparency in China: A new generation of sustainability reports. Business for Social Responsibility (BSR). https://www.bsr.org/en/our-insights/blog-view/transparency-in-china-a-new-generation-of-sustainability-reports#. Accessed: Jan 23, 2019

Bénabou, R., and J. Tirole. 2010. Individual and Corporate Social Responsibility. *Economica* 77 (305):1-19.

Bhandari, A., and D. Javakhadze. 2017. Corporate social responsibility and capital allocation efficiency. *Journal of Corporate Finance* 43:354-377.

Bhojraj, S., R. J. Bloomfield, and W. B. Tayler. 2009. Margin Trading, Overpricing, and Synchronization Risk. *Review of Financial Studies* 22 (5):2059-2085.

Boubakri, N., S. El Ghoul, H. Wang, O. Guedhami, and C. C. Y. Kwok. 2016. Cross-listing and corporate social responsibility. *Journal of Corporate Finance* 41:123-138.

Cai, F. 2006. *Scientific development concept and the sustainability in economic growth*. Beijing: Social Sciences Academic Press (China).

Chen, Y.-C., M. Hung, and Y. Wang. 2018. The effect of mandatory CSR disclosure on firm profitability and social externalities: Evidence from China. *Journal of Accounting and Economics* 65 (1):169-190.

Cheng, B. T., I. Ioannou, and G. Serafeim. 2014. Corporate Social Responsibility and Access to Finance. *Strategic Management Journal* 35 (1):1-23.

Claessens, S., and K. Tzioumis. 2006. Measuring firms' access to finance. *working paper* http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.575.3655&rep=rep1&type=pdf.

Dyck, A., K. V. Lins, L. Roth, and H. F. Wagner. 2018. Do institutional investors drive corporate social responsibility? International evidence. *Journal of Financial Economics*:https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2708589.

Erel, I., R. C. Liao, and M. S. Weisbach. 2012. Determinants of cross-border mergers and acquisitions. *The Journal of Finance* 67 (3):1045-1082.

Fang, V. W., A. H. Huang, and J. M. Karpoff. 2016. Short Selling and Earnings Management: A Controlled Experiment. *The Journal of Finance* 71 (3):1251-1294.

Friedman, M. 1970. The Social Responsibility of Business is to Increase Its Profits. *New York Times*, September 13, 122-126.

Grewal, J., C. Hauptmann, and G. Serafeim. 2017. Material Sustainability Information and Stock Price Informativeness. *SSRN*:https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2966144.

Huang, X. B., and L. Watson. 2015. Corporate social responsibility research in accounting. *Journal of Accounting Literature* 34:1-16.

Ioannou, I., and G. Serafeim. 2016. The Consequences of Mandatory Corporate Sustainability Reporting: Evidence from Four Countries. *working paper*:https://papers.ssrn.com/soL3/papers.cfm?abstract_id=1799589.

Jamali, D., and C. Karam. 2018. Corporate Social Responsibility in Developing Countries as an Emerging Field of Study. *International Journal of Management Reviews* 20 (1):32-61.

Jamali, D., C. Karam, J. Yin, and V. Soundararajan. 2017. CSR logics in developing countries: Translation, adaptation and stalled development. *Journal of World Business* 52 (3):343-359.

Jamali, D., and B. Neville. 2011. Convergence Versus Divergence of CSR in Developing Countries: An Embedded Multi-Layered Institutional Lens. *Journal of Business* Ethics 102 (4):599-621.

Jensen, M. C. 2001. Value Maximization, Stakeholder Theory, and the Corporate Objective Function. *Journal of Applied Corporate* Finance 14 (3):8-21.

Kaplan, S. N., and L. Zingales. 1997. Do investment-cash flow sensitivities provide useful measures of financing constraints? *Quarterly Journal of Economics* 112 (1):169-215.

Keys, T, T. W. Malnight, and K. van der Graaf. 2009. Making the most of corporate social responsibility. *McKinsey Quarterly*: https://www.mckinsey.com/featured-insights/leadership/making-the-most-of-corporate-social-responsibility.

Kitzmueller, M., and J. Shimshack. 2012. Economic Perspectives on Corporate Social Responsibility. *Journal of Economic Literature* 50 (1):51-84.

Liang, H., and L. Renneboog. 2017. On the Foundations of Corporate Social Responsibility. *The Journal of Finance* 72 (2):853-910.

Lin, Y. F., Cai, F., and Li, Z. 1999. The Chinses Miracle: Development Strategy and Economic Reforms. Shanghai: Shanghai People's Publishing House.

Manchiraju, H., and S. Rajgopal. 2017. Does Corporate Social Responsibility (CSR) Create Shareholder Value? Evidence from the Indian Companies Act 2013. *Journal of Accounting Research* 55 (5):1257-1300.

Margolis, J. D., H. A. Elfenbein, and J. P. Walsh. 2007. Does it pay to be good? A meta-analysis and redirection of research on the relation between corporate social responsibility and financial performance. *working paper*:https://www.hks.harvard.edu/m-rcbg/papers/seminars/margolis_november_07.pdf.

Massa, M., B. Zhang, and H. Zhang. 2015. The Invisible Hand of Short Selling: Does Short Selling Discipline Earnings Management? *The Review of Financial Studies* 28 (6):1701-1736.

McGuinness, P. B., J. P. Vieito, and M. Wang. 2017. The role of board gender and foreign ownership in the CSR performance of Chinese listed firms. *Journal of Corporate Finance* 42:75-99.

Ministry of Health of the P.R.China. 2009. Ministry of Health Report on the Status of OD Prevention and Control in 2009 [in Chinese].

http://www.nhc.gov.cn/zwgk/zcyjd/201304/b1b28f32be3f451781483d9ac6c59b25.shtml.

Moeller, S. B., F. P. Schlingemann, and R. M. Stulz. 2005. Wealth Destruction on a Massive Scale? A Study of Acquiring-Firm Returns in the Recent Merger Wave. *The Journal of Finance* 60 (2):757-782.

Rao, K., and C. Tilt. 2015. Board Composition and Corporate Social Responsibility: The Role of Diversity, Gender, Strategy and Decision Making. *Journal of Business Ethics* 138 (2):327-347.

Shleifer, A., and R. W. Vishny. 2003. Stock market driven acquisitions. *Journal of financial Economics* 70 (3):295-311.

United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). 2000. State of Environment in Asia and the Pacific 2000. Available at: https://www.unescap.org/sites/default/files/CH08.PDF. Accessed: Jan 23, 2019.

U.S. Energy Information Administration. 2015. China International Analysis. Available at : https://www.energy.gov/sites/prod/files/2016/04/f30/China_International_Analysis_US.pdf. Accessed: Jan 23, 2019

Wang, H., L. Tong, R. Takeuchi, and G. George. 2016. Corporate Social Responsibility: An Overview and New Research Directions: Thematic Issue on Corporate Social Responsibility. *Academy of Management Journal* 59 (2):534-544.

World Bank. 2011. World Bank Data indicator. Available from The World Bank IBRD. IDA: http://data.worldbank.org/indicator/NY.GDP.MKTP.CD. Accessed: Jan 23, 2019

2 CHAPTER TWO

CROSS-BORDER ACQUISITIONS AND CSR PERFORMANCE

2.1 Introduction

I examine the effect of cross-border acquisition activities of Chinese firms on their CSR performance. Corporate mergers and acquisitions (M&As) is the most important corporate decision. Prior studies have extensively studied the value creation and destruction of acquisition activities of firms for investors (Andrade et al. 2001; Moeller et al. 2004; Moeller et al. 2005; Shleifer and Vishny 2003). In contrast, there has been fairly scant research on the implication of M&A activities for other stakeholders, in particular, the effects of M&As on CSR.[4] I intend to fill this gap by examining whether an important type of M&As, cross-border acquisitions of Chinese firms, can affect their CSR performance.

I focus on cross-border acquisitions of Chinese firms for several reasons. First, due to China's strict currency restrictions, cross-border acquisition activities in China are

[4] Prior studies typically investigate the effect of M&As or the legal prevention of M&As on specific stakeholder interests. These stakeholders include employees (Lee et al. 2018), customers (Crandall and Winston 2003) and tax authorities (Huizinga et al. 2018). These studies focus on the conflicting interests between shareholders and stakeholders but do not examine how M&As are associated with a change in the CSR performance of firms.

heavily influenced by Chinese government policies and initiatives. It is well recognized in the literature that the government typically intervenes in the market to serve various social, political and environmental agendas at the cost of shareholder wealth (Chen et al. 2018). The Chinese government's policies and initiatives on foreign investment are no exceptions. Second, in contrast to domestic M&As, firms engaging in cross-border acquisitions face significant and unique changes to their institutional environments and stakeholder composition. At the minimum, through cross-border acquisitions, firms will be exposed to the regulations, legal systems, and cultural environments of the host countries (Ahern et al. 2015; Erel et al. 2012). Chinese acquirers also must meet the expectations of stakeholders in host countries, including customers, suppliers, employees, governments, and public interest groups, whose expectations are likely to be different from those stakeholders in the home country. These reasons suggest that Chinese acquirers may need to take additional CSR initiatives following cross-border acquisitions.

I argue that Chinese firms have incentives to lift their CSR performance through cross-border acquisitions as follows. First, the Chinese government initiated the Go Global policy in 2000 to encourage Chinese firms to acquire strategic assets and expand business abroad. In recent years, the "Go Global" policy has been emphasizing "industrial upgrade," which serves both domestic economic and social agendas (Gugler and Shi 2008; Miska et al. 2016). The objective of the industrial upgrade is to reduce reliance on energy-intensive and high-polluting industries for economic growth and to rely more on high technology, green energy, and services.[5] Cross-border acquisitions are viewed by the government as a method for Chinese firms to learn advanced technologies and management skills, boost innovation, and become major global competitors. A successful

[5] For example, the No. 1838 [2005] of the National Development and Reform Commission priorities equity loan facilities for "overseas production or infrastructure projects that may boost the export of domestic technologies, products, equipment and labor services, etc." and "projects of overseas research and development centers that may make use of international advanced technologies, management experiences and professional talents."

industry upgrade and the development of global competitiveness for Chinese firms can assist the government to achieve the social and environmental objectives of supporting domestic employment and developing a more skilled workforce, improving product safety and quality, and establishing less-polluting industries. I label this argument as the learning effect of cross-border acquisitions.

Second, stakeholders in the host countries are often concerned about the legitimacy of Chinese acquirers on social and environmental grounds.[6] These social and environmental concerns may prevent Chinese acquirers from successfully pursuing their foreign investments, and effectively integrating their foreign operations with domestic ones. The issue of gaining legitimacy therefore significantly affects the success of the cross-border acquisitions of Chinese firms. Recognizing such barriers, the Chinese government specifically issues policies and guidance aimed at emphasizing the CSR practices of Chinese firms in host countries as a strategy to strengthen reputation and build legitimacy. In 2013, the Ministry of Commerce of China released a notice to enhance the awareness of environmental protection of Chinese firms in host countries.[7] In 2014, the Ministry of Commerce further issued the *Measures for the Administration of Overseas Investment*, which requires Chinese firms to engage in CSR practices and be fully compliant with regulations and social values in host countries.[8] The central theme of such an emphasis on CSR practices is to strengthen the legitimacy of Chinese firms in host countries to increase their "global presence." By following the Chinese government

[6] Examples include the following. The government of Gabon ordered SINOPEC, one of the largest energy and chemical companies in China, to halt its exploration activities in 2006 as environmental concerns arose when SINOPEC began prospecting for oil in Loango National Park. Similarly, the Myanmar Government suspended the dam and hydroelectric power project invested in by China Power Investment Corporation in 2011 due to the concerns of biodiversity conservation and migrant resettlement.

[7] In 2013, the Ministry of Commerce of China introduced the *Notice on the Further Enhancement of Environmental Protection Work of Foreign Investment Cooperation Enterprises* to improve the awareness of environmental protection of Chinese firms to enhance the images of these firms and protect economic benefits (see http://hzs.mofcom.gov.cn/article/zcfb/b/201302/20130200039909.shtml).

[8] In 2014, the Ministry of Commerce in China issued the *Measures for the Administration of Overseas Investment*. This guidance requires Chinese firms to act legally, be fully compliant with regulations, and respect local customs and cultures in host countries.

policies and guidance, Chinese firms are expected to improve their CSR performance through their cross-border acquisitions. I refer to this argument as the legitimacy effect of cross-border acquisitions.

Apart from the government-driven focus on CSR in cross-border acquisitions, anecdote evidence suggests Chinese firms have incentives to enhance their reputation domestically by acquiring strategic assets abroad. This is largely due to Chinese consumers placing greater trusts in foreign products relative to domestic products, and due to the environmental pollutions in China. An infamous example is the poisoned milk powder scandal in 2008. Sanlu Group, one of the largest dairy producers in China at the time, admitted that its milk powder was contaminated with the toxic chemical melamine. This incident damaged the reputation of the entire Chinese dairy industry and has boosted the demand for high-quality overseas dairy products ever since. The shift of consumer preference drove Chinese dairy producers to acquire internationally recognized brands or overseas production facilities to improve the product quality and regain social trust. Yili, another large dairy producer in China, bought Oceania Dairy in New Zealand in 2013 to produce milk powder for export to China. Many of Yili's competitors also conducted cross-border acquisitions in the aftermath of the Sanlu scandal. Similarly, Beijing Capital Group acquired Transpacific New Zealand, the largest waste management business in New Zealand in 2014, enabling the Chinese firm to acquire technology that could help combat chronic pollution. Transpacific New Zealand's waste business specializes in environmentally friendly landfill methods, odor management, and hazardous waste handling. Demand for such technology is growing in China as the government launches numerous measures to tackle pollution. These anecdotal cases illustrate that Chinese firms engage in cross-border acquisitions to address domestic product quality issues and environmental challenges. I empirically examine whether the CSR-related benefits can be realized through cross-border acquisitions by Chinese firms.

I construct a sample consisting of 4,006 firm-year observations covering 38 host countries from 2008 to 2015 to examine the effect of cross-border acquisitions on CSR performance of Chinese acquirers. The sample includes 652 observations that have been carried out cross-border acquisitions. The control firms include both non-acquirers and acquirers that have made domestic acquisitions only. I find that Chinese acquirers significantly improve their CSR performance following their cross-border acquisitions, compared with the control firms. This result is robust to several alternative research designs including a DiD estimation, DiD estimation with the PSM procedure and the Heckman two-stage regressions. The result is also robust when comparing acquirers engaging in cross-border acquisition activities separately with acquirers pursuing domestic acquisition deals only or non-acquiring firms, or when excluding firms that are cross-listed. Furthermore, I do not find an increasing trend in CSR performance of Chinese acquirers prior to the completion of their cross-border acquisitions, confirming the parallel trend assumption.

I next examine the cross-sectional variation in the association between cross-border acquisitions and CSR performance of Chinese acquirers. I aim to provide at least some suggestive evidence on the learning and legitimacy effects of cross-border acquisitions. I note that these two effects are not mutually exclusive. Both the learning and legitimacy effects can co-exist in contributing to the primary observation that cross-border acquisitions are positively associated with the CSR performance of Chinese acquirers. It is also worth pointing out that these two effects are not dependent on each other, as they can work as independent channels affecting the CSR performance of Chinese acquirers.

I begin by investigating whether the institutional environments of host countries affect the positive association between cross-border acquisitions and the CSR performance of Chinese acquirers. Compliance with the institutional and regulatory

requirements of host countries is a necessary condition for Chinese acquirers to gain legitimacy. The institutional demand of host countries for higher CSR standards can help improve the overall CSR practices of Chinese acquirers. I first show that the positive effect of cross-border acquisitions on the CSR performance of Chinese acquirers is stronger for the acquirers exposed to multiple host countries. When cross-border acquisitions take place in multiple countries, Chinese acquirers are exposed to the divergent institutional environments of host countries, which are likely to cover broader social and environmental issues than any single country. Firms are pressured to legitimate themselves and align their CSR practices in different host countries where they operate to meet expectations from various stakeholder interest groups. Nevertheless, Chinese acquirers can translate the experience gained from one host country into knowledge that may be used to deal with local legitimacy pressure of another host country.

I then show evidence that the positive effect of cross-border acquisitions on the CSR performance of Chinese acquirers is stronger for the acquirers exposed to the host countries with common and French civil law origins. Liang and Renneboog (2017) suggested that common law systems have a positive and significant influence on the corporate governance and community involvement domains of CSR, while French civil law systems are more concerned with social- and labor-related issues. By exposure to these legal institutions, Chinese acquirers adopt CSR practices according to the needs of stakeholders and the contexts in host countries. Taken together, I view these results as supportive of the legitimacy effect of cross-border acquisitions on Chinese acquirers.

I attempt to provide indirect evidence consistent with Chinese acquirers gaining CSR-related knowledge from their foreign investment. As it is difficult to directly measure the learning activities of firms, I produce several sets of results to investigate this effect. First, I argue that firms are likely to be influenced by social norms in countries with more stringent and reputable CSR traditions than in their home countries and learn

to improve their CSR performance. I sort host countries into the high and low social norms groups based on several global social norm indices. I find consistent results suggesting that the improvement in CSR performance of Chinese acquirers following their cross-border acquisitions is predominantly attributable to acquisitions in countries with high social norms. Additionally, I argue that non-SOEs are more efficient at learning advanced CSR-related technologies through their acquisition. Results confirm that the CSR performance of non-SOEs improves more following cross-border acquisitions, especially for firms in polluting industries. Overall, I interpret the results as supportive of both the learning and legitimacy effects.

This research makes contributions in several ways. First, I provide evidence that cross-border acquisitions have implications for stakeholder value. While prior studies focus on shareholder value maximization of M&As, the implication of M&As on stakeholders are largely ignored. I find that Chinese acquirers can gain significant CSR-related knowledge by investing in host countries where stakeholders have higher CSR expectations. This CSR-based knowledge transfer has not been documented in the prior literature. This study suggests stakeholders should have significant interests in the CSR-related outcomes of major corporate investment activities. Although the setting explores cross-border acquisitions by firms from weak home country institutions, cross-border acquisitions by firms from countries with strong CSR traditions may also have implications for stakeholder values, albeit negative.

Second, I contribute to the emerging literature on the effect of legal origins on the CSR performance of firms. Liang and Renneboog (2017) found a variation in CSR practices across countries with different legal traditions. I show that exposure to multiple institutions and legal regimes in host countries is associated with improved CSR performance for acquirers. This evidence suggests that different institutions and

regulatory systems may complement each other in promoting various stakeholders' interests which improves the CSR performance of multinational firms.

Last, this study also has an important policy implication. The Chinese government's Go Global policy aims at advancing domestic economic, social, and environmental development. I provide micro-level evidence supporting that under the guidance of such a policy, Chinese firms are able to develop better CSR practices through cross-border acquisitions. This should help achieve the social and environmental objective of the Go Global policy. Other developing countries may consider similar policies and guidance assisting cross-border acquisition activities of domestic firms to facilitate domestic social and environmental development.

The remainder of the paper is organized as follows. Section 2.2 reviews prior literature and develops the hypothesis. Section 2.3 describes the research design and sample. Section 2.4 presents the empirical results. Section 2.5 discusses the findings from additional analyses. Section 2.6 presents the conclusion.

2.2 Literature Review and Hypothesis Development

2.2.1 Legitimacy and CSR

Firms continually seek to operate within the bounds and norms of respective societies. That is, they attempt to ensure that their activities are perceived by outside parties to be "legitimate." Legitimacy in institutional theory is defined as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (Suchman 1995, p. 574). When expanding abroad, acquiring firms must satisfy host country stakeholder expectations to gain legitimacy. However, host country stakeholders often lack information for evaluating these firms in a rational manner and may develop negative perceptions about these firms based on negative stereotypes about their weak home country institutions (Kostova and Zaheer 1999). Emerging markets including China

are characterized by weak corporate governance practices, poor environmental or labor rights protections, and lower levels of institutional quality (Campbell et al. 2012; Cuervo-Cazurra and Ramamurti 2014). Such negative stakeholder perceptions indicate a range of legitimacy challenges faced by Chinese acquirers.

To eliminate the negative perceptions and obtain legitimacy, acquirers must adopt policies and practices to appear in line with host country institutions (Rathert 2016). Research suggests that CSR initiatives can eliminate the negative impressions of acquirers from emerging markets, strengthen their reputation, and build legitimacy (Marano et al. 2017). This is because CSR practices are considered organizational routines aimed at creating social value by reducing negative externalities or creating positive ones (Sethi 1979). Godfrey et al. (2009) find that CSR can generate moral capital or goodwill, leading to positive attributions from stakeholders who temper their negative judgments and punitive sanctions during a negative event. Koh et al. (2014) also find that CSR can enhance firm value by functioning as an insurance mechanism for firms with high litigation risks. Given that cross-border acquisitions heighten the ambiguity and complexity of the operating environment of Chinese acquirers, Chinese acquirers can gain legitimacy among their stakeholders by adopting CSR practices to overcome barriers. For example, Symeou et al. (2018) show that firms in extractive industries often invest in CSR to address the major social and environmental disruptions that their extractive operations can cause when expanding abroad. In summary, the literature finds that the risk of adverse political, regulatory, and social sanctions/penalties prompts firms to engage in CSR activities. As a reward, CSR practices create a moral image and legitimacy for firms to shield them from potential negative consequences from their operations.

Second, Chinese acquirers need to change corporate policies in order to comply with the laws and regulations of host countries and adapt to foreign institutions. Many of these new policies are likely to be beneficial to stakeholders. Rathert (2016) find that

exposure to different kinds of host country institutions affects the CSR practices of acquirers. Specifically, national-level institutions including both formal institutions, such as the rule of law, and informal institutions, such as conventions and social norms, can shape the extent of CSR practices by firms (Ghoul et al. 2017; Ioannou and Serafeim 2012; Marano and Kostova 2016). In this study, I identify two distinct channels through which cross-border acquisitions can influence the CSR performance of Chinese acquirers: the host country legal origins and social norms.

2.2.1.1 Legal origin and CSR

Research on legal institutions shows that the degree to which legal traditions prioritize investor and private property rights helps explain cross-country variation in CSR practices (Liang and Renneboog 2017; Kim et al. 2017). Common law systems provide strong protection to shareholders through good practices of corporate governance and community involvement, while civil law systems underline strong social preference for stakeholder claims (La Porta et al. 1998). Based on these key features of different legal regimes, Liang and Renneboog (2017) find that firms from civil law countries achieve better CSR performance than their common law counterparts. They attribute this finding to the stakeholder-oriented rule mechanisms of the civil law countries, which are consistent with the social preferences for good corporate behavior reflected by CSR. In contrast, they find that firms from socialist countries (e.g., China) have the lowest levels of CSR and attach less attention to environmental and social issues than those from a common or civil legal origin.

Variations in the legal institutions of host countries enable Chinese acquirers to adopt their CSR approaches according to local stakeholder expectations. For example, Liang and Renneboog (2017) suggest that common law systems have a positive and significant influence on the corporate governance and community involvement domains of CSR, while civil law countries are rules-based and have stricter regulations to protect

stakeholders' interests reflecting the social preferences. For example, French civil law systems are more concerned with social- and labor-related issues. If Chinese firms expand their business in common law countries, they are likely to be required to follow the good practices of corporate governance and community involvement employed by their counterparts in the common law countries. If Chinese firms operate in civil law countries with the French legal tradition, they are likely to face scrutiny by stakeholders regarding worker rights. I argue that, by exposure to different legal institutions and learning, Chinese acquirers adopt CSR practices according to the needs of stakeholders and the contexts in host countries.

2.2.1.2 Social norms and CSR

In economic literature, social norms are defined as "a predominant behavioral pattern within a group, supported by a shared understanding of acceptable actions and sustained through social interactions within that group" (Nyborg et al. 2016, p. 42). By adhering to social norms and meeting the social expectations of different stakeholder groups, acquirers are able to strengthen their legitimacy and enhance their reputation in host countries (Carroll and Shabana 2010). For Chinese acquirers, engagement in CSR can show their willingness to align practices with global stakeholder norms and expectations. It also assures stakeholders of the commitment of acquirers to product quality and safety, environmental and social stewardship, codes of conduct, and anti-corruption behavior (Marano et al. 2017). In addition, Marano and Kostova (2016) find that firms are likely to be influenced by social norms in countries with more stringent and reputable CSR traditions than in their home countries. Dyck et al. (2018) provide evidence that foreign institutional investors influence the environmental and social performance of firms only when these investors are from countries with strong social norms toward CSR engagement. Taken together, the pressure coming from social norms

in host countries forces Chinese acquirers to initiate efforts to improve their CSR performance.

2.2.2 Learning through cross-border acquisitions

Knowledge is the most important resource in firms to perform substantial differentiation and thereby maintain competitive advantages in the market (Gupta and Govindarajan 2000). Knowledge transfer in organizations is formally defined as "the process through which one unit (e.g., group, department, or division) is affected by the experience of another" (Argote and Ingram 2000, p. 151), and it is manifested through changes in performance. Knowledge transfer can occur through cross-border acquisitions, which introduce new channels of knowledge flow and promote organizational and especially technological learning (Luo and Tung 2017; Zahra et al. 2000).

Targets and other firms in host countries possess knowledge along with several dimensions, such as general knowledge about the legal system, accounting and auditing standards, customs, social norms, specific industries or clients, and business (Libby and Luft 1993; Nelson and Tan 2005). This knowledge is valuable to acquirers who wish to compete globally. Cross-border CSR-related knowledge transfer can occur via acquisitions (Symeou et al. 2018; Tashman et al. 2018). Drezner (2000) suggests that globalization encourages firms to transfer environmental technologies and management systems from countries with stricter environmental standards to developing countries. For example, Geely, a Chinese automotive manufacturing company, acquired Volvo in 2010 to acquire high technology, especially the superior environmental protection technology. With green car ambitions, Geely targeted the electric car to provide more energy-saving products. Besides environmental knowledge, Chinese firms can learn from target firms in other areas, such as customer care, human management, and product safety. The new knowledge can help Chinese firms better manage various stakeholder needs.

I expect it is efficient to transfer CSR-related knowledge internally for Chinese firms acquiring foreign firms. First, much CSR-related knowledge is protected by legal mechanisms, such as patents and trade secrets. Chinese firms must pay for this knowledge in acquisitions. Second, CSR-related knowledge can be more easily transferred internally due to the shared organizational culture and language (Andersson et al. 2001; Tallman and Chacar 2011). With internationalization, corporations worldwide gradually integrate CSR practices into their operations. In the past decades, the CSR performance of Chinese firms has developed very rapidly, especially for firms with overseas investments (Gugler and Shi 2008).

In light of the above arguments about the legitimacy and learning channels, I state the main hypothesis as follows:

Hypothesis: Chinese acquirers improve their CSR performance through cross-border acquisitions.

2.3 Research Design and Sample

2.3.1 Difference-in-differences estimation

To examine the effect of cross-border acquisitions on CSR performance of Chinese acquirers, I employ several research designs: a DiD approach, DiD estimation with the PSM procedure, and Heckman two-stage model. First, I use the following DiD estimation to compare the changes in the CSR performance of Chinese acquirers following their cross-border acquisitions (the treatment group) and the changes in the CSR performance of Chinese firms without cross-border acquisitions (the control group, including both domestic acquirers and non-acquirers). Similar to the work of Bertrand and Mullainathan (2003), there are multiple treatment events (i.e., cross-border acquisitions) as well as treatment and control groups across years in the sample. Observations act as both control and treatment groups at different points in the sample.

$$CSCORE_{it} = \beta_0 + \beta_1 CBA_{it} + \gamma X_{it} + Firm\ FE_{it} + Industry \times Year\ FE_{it} + \varepsilon_{it} \qquad (2.1)$$

where the subscript *i* refers to firm *i*, and the subscript *t* refers to year *t*. The dependent variable *CSCORE* is the CSR performance rating score. For firms that have completed cross-border acquisition deals, *CBA* is the dummy variable, which is equal to 0 in all years preceding the date of the completion of the first cross-border acquisition and is equal to 1 in the year of the completion of the first cross-border acquisition and afterward. For firms that do not engage in cross-border acquisition activities, *CBA* is equal to 0 in all years. The matrix *X* is a set of firm-level control variables that prior research has found to affect the CSR performance of firms (Ghoul et al. 2017). Appendix 2.1 describes these variables. Because the setting involves multiple treatment and control groups and multiple time periods, I include the fixed-effects of firm and industry times the year.[9] In a DiD design, it is standard to include firm fixed effects to effectively control the time-invariant differences between cross-border acquirers and other firms (Klasa et al. 2018), so that the coefficient on CBA captures the difference, if any, in the changes in CSR performance after acquisitions between treatment and control firms. I cluster the standard errors at the host country-level.

My coefficient of interest is β_1, which gauges the treatment effect of completing cross-border acquisitions on CSR performance of Chinese acquirers relative to that of non-acquirers. A positive β_1 is consistent with improved CSR performance of acquirers after completing cross-border acquisitions. The key identifying assumption in Eq. (2.1) is that, conditional on covariates *X* and on firm and industry times year fixed effects, the treated and control firms share parallel trends in the absence of cross-border acquisitions.

One immediate concern with the DiD estimation is that the treated and control firms may differ in their CSR performance prior to cross-border acquisitions. It is also possible that reverse causality drives the results. If this is the case, I should observe an

[9] The results are similar using year fixed effects instead of industry × year fixed effects.

increasing trend in the CSR performance of Chinese acquirers prior to the completion of their cross-border acquisitions. To address the concerns of the pretreatment trend and reverse causality, I examine the plausibility of the parallel trend assumption in Section 2.4.2. The test I perform in Section 2.4.2 provides strong evidence that the parallel trend holds in this setting. In addition, the research design uses multiple treatment and control groups, which reduces the bias and noise associated with just one comparison and mitigates the concern that the treatment may coincide with changes in market conditions (Roberts and Whited 2013). The setting of multiple treatment events is also particularly useful in mitigating concerns about the violation of the parallel trend assumption, as β_1 captures the average treatment effect across different time periods and different countries, so the treatment effect is not driven by a particular time period or particular set of countries.

2.3.2 DiD estimation with PSM procedure

Prior studies have found that firms with better CSR performance and certain characteristics are more likely to perform cross-border acquisitions (Deng et al. 2013; Schweizer et al. 2017), which may induce selection bias in the DiD estimation. To mitigate the concern, I use the PSM procedure to match each treated firm before its cross-border acquisition with control firms without cross-border acquisition activities. Following Schweizer et al. (2017), I first apply a first-stage probit model to estimate the probability of being a treated firm on firm characteristics: firm size (*SIZE*), leverage (*LEV*), profitability (*ROA*), tangible assets (*TANG*), Tobin Q (*TOBINQ*), percentage of firms in an industry that complete cross-border acquisitions (*CBAIND*), and government ownership (*GOV*). Appendix 2.2 presents the results of the first-stage probit regression. Next, I estimate the propensity score for each treated firm using the predicted probabilities from the probit model and match each treated firm to the control firms using the nearest neighbor matching algorithm without replacement and within a caliper width

of 0.25×the standard error of the propensity score. The differences between the treated and control firms are substantially narrower after matching with the propensity scores (untabulated). I then re-estimate Eq. (2.1) using the PSM sample.

2.3.3 Heckman two-stage regressions

I select the sample based on whether firms disclose CSR reports and have CSR scores. This sample selection procedure potentially introduces a sample selection bias. It is also possible that firms with better CSR performance have a better corporate reputation and financial performance, which increases their possibility of acquiring outbound. To address the concern of the sample selection bias and reverse causality, I use the Heckman (1979) two-stage estimation to examine the influence of cross-border acquisitions on CSR performance of Chinese acquirers. First, I employ the following probit model to estimate the likelihood that firms issue CSR reports and have CSR scores.

$$Pr(CSCORE_{it}) = \alpha + \gamma X_{it} + \delta Z_{it} + Industry\ FE_{it} + Year\ FE_{t} + \varepsilon_{it} \qquad (2.2)$$

where *Pr*(*CSCORE*) is the dummy variable equal to 1 if the firm issues a CSR report and is 0 otherwise. The matrix *X* is the firm-level control variables that prior research has found to affect the CSR performance of a firm and are the same set of control variables used in Eq. (2.1). To impose exclusion restrictions in implementing the Heckman two-stage regressions, I also include *Z* as additional variables in Eq. (2.2), which prior studies have found to be the determinants of CSR reporting but with no direct influence on CSR performance. Moreover, *MANDATE* is a dummy variable equal to 1 if a firm is mandated to disclose a CSR report in a given year and is 0 otherwise, and *CSRIND* is the percentage of firms in an industry that issue CSR reports in a given year to measure the peer effect of a disclosure practice (Chen et al. 2018b; Luo et al. 2017; Lennox et al. 2012). I include the industry and year fixed effects in Eq. (2.2). I estimate the inverse Mills ratio (*Lamda*) using the normal density and cumulative distribution functions of the predicted likelihood

from this first-stage probit model. I include *Lamda* in the following second-stage model to mitigate the problem of potential self-selection.

$$CSCORE_{it} = \beta_0 + \beta_1 CBA_{it} + \gamma X_{it} + \varphi Lamda_{it} + Industry\ FE_{it} + Year\ FE_{it} + \varepsilon_{it} \quad (2.3)$$

where *CSCORE*, *CBA*, and *X* are defined in Section 2.4.1. I include the industry and year fixed effects in Eq. (2.3).

2.3.4 Sample selection

I obtained CSR ratings for Chinese firms from the RKS database. RKS is an independent and leading CSR rating agency in China. It covers all listed firms issuing CSR reports in China and provides yearly CSR ratings, with scores available from 2008. The RKS creates a rating system of CSR reports based on the Global Reporting Initiative (3.0) adapted to the Chinese context. All CSR reports are rated based on four dimensions: (1) macrocosm evaluation, including the corporate CSR strategy, participation of stakeholders, content and comparability of CSR reports, innovativeness of CSR activities, and external assurance, which accounts for 30% of the overall CSR score. (2) Content evaluation focuses on organizational systems of firms in implementing CSR with associated economic, environmental, and social responsibilities and accounts for 45% of the overall CSR score. (3) Technical evaluation focuses on the transparency, regularity, and accessibility of CSR information and accounts for 20% of the overall CSR score. (4) Industry evaluation focuses on industry-level CSR characteristics, which make up the remaining 5% of the overall CSR score. The RKS CSR rating system includes over 70 subdimensions that consider the range of CSR activities and the extent of engagement in each. The subdimensions include disclosure of metrics and third-party auditing of reports. This measure thus indicates the attention and resources devoted to CSR activities. The RKS CSR rating has been extensively validated and used by many studies (Luo et al. 2017; Marquis and Qian 2014; McGuinness et al. 2017). The RKS CSR score ranges from 0 to 100. Higher scores indicate better CSR performance for a firm.

I obtain cross-border acquisition data for Chinese firms from the Thomson Reuters SDC Platinum Mergers and Corporate Transactions database and the Zero2IPO database, [10] and source other firm-level financial information from the CSMAR database. I include all Chinese A-share listed firms on the SSE and SZSE with CSR scores in the initial sample. The sample period starts from 2008 because it is the first year in which RKS provides CSR ratings for Chinese firms. Following prior research (Chen et al. 2018b; Lee et al. 2017), I drop the (1) firms belonging to the financial industry, (2) "special treatment" firms (firms with financial irregularities), [11] and (3) observations with incomplete financial information. The final sample includes 4,006 firm-year observations representing 791 distinct firms for the period 2008–2015.

2.3.5 Descriptive results

Figure 2.1 presents the distribution of the destinations of cross-border acquisitions of Chinese firms on a world map and includes 113 host countries. The darker shading indicates a greater number of cross-border acquisitions completed in that country. The host countries for cross-border acquisitions Chinese firms are primarily located in North America, Europe, Australia, and selected regions and countries in Asia. The distribution of these host countries is consistent with the Chinese government's Go Global policy that emphasizes the industry upgrade with a focus on acquiring strategic assets in high-value-added, high-technology, and clean-energy-based industries. Figure 2.2 depicts the number of completed cross-border acquisitions by Chinese firms from 1990 to 2015. The number of completed cross-border acquisitions by Chinese firms has grown substantially in the past decade.

<Insert Figure 2.1 about here>

[10] The Zero2IPO database is a leading integrated source for accurate, comprehensive, and up-to-date information covering private equity funds, venture capital and mergers and acquisitions focused on mainland China.

[11] These firms have negative earnings in two consecutive years. On April 22, 1998, the Shenzhen Stock Exchange announced that it labelled these firms as "special treatment" firms.

<Insert Figure 2.2 about here>

Table 2.1 presents the distribution of the CSR scores for the firm-years after the completion of cross-border acquisition activities (the treatment group, 652 firm-years), and for firm-years before or without the completion of cross-border acquisition activities (the control group, 3,354 firm-years) by industry based on the China Security Regulatory Commission industry classification. There are significant variations of CSR scores between the treatment and control groups within and across industries. In the majority of industries, the treatment sample exhibits a higher CSR score than the control sample.

<Insert Table 2.1 about here>

Panel A of Table 2.2 presents the descriptive statistics for the full sample. All continuous variables are winsorized at the 1st and 99th percentiles of their distributions. The dependent variable *CSCORE* ranges from a low of 13.33 to a high of 87.95, with an average value of 36.998 and a standard deviation of 11.71, which points to a considerable variation in CSR performance among the sample firms. The mean value of *CBA* is 0.114, indicating that 11.4% of firm-year observations have completed at least one cross-border acquisition in the sample. The sample firms on average experience a sales growth (*SGR*) of 17.1%, are profitable (return on assets (*ROA*) of 4.5%) and have a leverage (*LEV*) of 49.8%. The government holds 8.3% of total shareholdings and the big 4 accounting firms audit 11.5% of the sample firms. The descriptive statistics for the sample are similar to those reported in previous studies (Chen et al. 2018b; McGuinness et al. 2017).

<Insert Table 2.2 about here>

Panel B of Table 2.2 presents the descriptive statistics for the firm-year observations after the completion of cross-border acquisition activities (the treatment group) and for the firm-years before or without the completion of cross-border acquisition activities (the control group). Comparisons of the means and medians of CSR scores between the treatment and control groups show that the treatment group has higher CSR

scores than the control group, and the difference between the two groups is statistically significant. After completing cross-border acquisitions, the treatment group has a larger firm size, more leverage, and a lower Tobin Q and is more likely to be audited by the big 4 accounting firms than the control group. In the main test, I include firm fixed effects to control for the differences between cross-border acquirers and non-acquirers.

Panel C of Table 2.2 shows the Pearson correlations among the main regression variables. The correlation between *CBA* and *CSCORE* is significantly positive, indicating that firms with cross-border acquisition activities tend to have better CSR performance. The correlations between other variables are low, suggesting that multicollinearity is not likely to drive the results.

2.4 Empirical Results

2.4.1 DiD estimation results

Columns (1) and (2) of Table 2.3 reports the DiD estimates of testing the effect of cross-border acquisitions on CSR performance of Chinese acquirers using the full and PSM samples, respectively. The coefficient on *CBA* is significantly positive in Column (1), suggesting that Chinese firms that engage in cross-border acquisition activities experience an improvement in their CSR performance after the completion of cross-border acquisitions relative to the control firms that do not conduct cross-border deals. The coefficient on *CBA* continues to be significantly positive in Column (2), indicating that the results are not driven by other observable differences between the treated and control firms. The results support the hypothesis and are also economically meaningful. The completion of cross-border acquisitions leads to an increase in CSR performance of Chinese acquirers by approximately 4.588%.[12] This economic magnitude is comparable to a 4.5% increase in environmental performance and a 2.1% increase in social

[12] Note that 4.588% = 1.943/42.351, where 1.943 is the coefficient on *CBA* in Column (1) of Table 2.3, and 42.351 is the average value of *CSCORE* for the treated firms in Table 2.2.

performance for the firms experiencing a change in institutional ownership, as reported by Dyck et al. (2018).

<Insert Table 2.3 about here>

2.4.2 Parallel trend assumption

In Panel A of Table 2.4, I examine the timing of changes in CSR performance relative to the timing of the completion of cross-border acquisitions. I re-estimate Eq. (2.1) by replacing CBA with 12 indicator variables: CBA^{-5}, CBA^{-4}, CBA^{-3}, CBA^{-2}, CBA^{-1}, CBA^{0}, CBA^{+1}, CBA^{+2}, CBA^{+3}, CBA^{+4}, CBA^{+5}, and CBA^{+6}. These variables indicate the year relative to the completion of cross-border acquisitions. CBA^{-5}, CBA^{-4}, CBA^{-3}, CBA^{-2}, and CBA^{-1} indicate that it is five years, four years, three years, two years, or a year before the completion of cross-border acquisitions, respectively, and CBA^{0} indicates that it is the year in which cross-border acquisitions are completed. Further, CBA^{+1}, CBA^{+2}, CBA^{+3}, CBA^{+4}, CBA^{+5}, and CBA^{+6} indicate that it is one year, two years, three years, four years, five years, or six or more years after the completion of cross-border acquisitions.

<Insert Table 2.4 about here>

I find that the coefficients on CBA^{-5}, CBA^{-4}, CBA^{-3}, CBA^{-2}, and CBA^{-1} are statistically insignificant. The coefficients on CBA^{0}, CBA^{+1}, CBA^{+2}, CBA^{+3}, CBA^{+4}, CBA^{+5}, and CBA^{+6} are positive and significant, and their magnitude increases over time for the first three years since acquisition. Specifically, the coefficient on CBA^{+3} is almost twice as large as the coefficient on CBA^{0}, indicating that it takes a few years to reveal the full effect of cross-border acquisitions on the CSR performance of Chinese acquirers. This is understandable given that CSR investment is usually a long-term process. In addition, the coefficients on CBA^{+3}, CBA^{+4}, CBA^{+5}, and CBA^{+6} seem stable at around 5.4, suggesting that the change in CSR performance is likely permanent. Overall, the results suggest that Chinese acquirers improve their CSR performance relative to that of the control firms only after the completion of their cross-border acquisitions, but not before. Thus, reverse

causality or a violation of the parallel trend assumption does not explain the main result that cross-border acquisitions drive the CSR performance of Chinese acquirers.

2.4.3 Heckman two-stage regressions results

Column (3) of Table 2.3 reports the result of the Heckman first-stage probit model. Consistent with prior research, I find that *SIZE* and *ROA* are positively and significantly associated with the CSR report issuance, while *LEV* negatively affects the likelihood of issuing CSR reports. Moreover, *MANDATE* and *CSRIND* have a significantly positive effect on the likelihood of CSR disclosure. The area under the receiver operating characteristic curve is 0.888 (untabulated), suggesting that the probit model has acceptable discriminatory power. Column (4) of Table 2.3 reports the result from the Heckman second-stage regression. A significantly positive coefficient on *CBA* indicates that firms conducting cross-border acquisitions have better CSR performance than firms without cross-border acquisition activities.

2.4.4 Robustness checks

In Panel B of Table 2.4, I re-run the analyses using alternative samples to assess the robustness of the results. First, I use a modified sample that replaces the control group with firms that have completed domestic acquisitions in Column (1), a modified sample that include domestic acquiring firms with their domestic acquisition dates matched to the cross-border acquisition dates of treatment firms in Column (2), a modified sample that replaces the control group with firms that have not carried out any acquisitions in Column (3), and a modified sample replacing the control group with firms that have unsuccessful cross-border deals in Column (4). The coefficients on *CBA* remain positive and significant in Columns (1), (3) and (4), suggesting that the improvement of CSR performance for Chinese acquirers is statistically significant after the completion of their cross-border acquisitions relative to domestic-acquiring firms, non-acquiring firms, or firms with failed cross-border deals. However, the coefficient on *CBA* is positive but

insignificant in Column (2), when matching with the treatment group only based on the acquisitions dates. Because the number of domestic acquiring firms with their domestic acquisition dates matched to the cross-border acquisition dates of treatment firms is limited, other important characteristics between domestic acquiring firms and cross-border acquiring firms are not matched in this control group. In other words, this control group may not be well specified.

Next, firms cross-listed on major stock exchanges also have access to outbound resources and are confronted with legitimate problems. Most of the Chinese firms are cross-listed in Hong Kong, Singapore, and the U.S., where more stringent CSR requirements exist compared to China. Prior research has found that cross-listed firms in the U.S.. stock market have better CSR performance than non-cross-listed domestic firms (Boubakri et al. 2016). Despite controlling for firm fixed effects, the inclusion of cross-listed firms in the sample might influence the findings. To rule out the effects of cross-listing on CSR performance, I re-estimate Eq. (2.1) after excluding cross-listed firms. Column (5) shows that the result is robust to excluding these cross-listed firms from the sample. Last, I include Chinese acquirers with cross-border acquisition activities only in an alternative sample and compare their CSR performance before and after their cross-border acquisitions. I find that the CSR performance of Chinese acquirers has significantly improved through their cross-border acquisitions in Column (6). Taken together, the inferences are robust to the use of alternative samples.

2.5 Exploring CSR Performance Improvement Factors of for Chinese Acquirers

In this section, I provide evidence on the factors that are associated with the gain in CSR performance of Chinese acquirers engaging in cross-border acquisitions. The analyses are guided by both the legitimacy channel and the learning channel discussed earlier.

2.5.1 Effect of multiple host countries on CSR performance of Chinese acquirers

When cross-border acquisitions take place in multiple countries, Chinese acquirers are exposed to the multiple and divergent institutional environments of the host countries. They are pressured to legitimate themselves and align their CSR practices in different host countries where they operate to meet expectations from various stakeholder interest groups across the globe. Expanding their presence in multiple foreign markets also exposes Chinese acquirers to different knowledge and practices for addressing social and environmental issues. Such exposure is expected to increase the motivation and capacity of Chinese acquirers to develop CSR initiatives to satisfy the diverse expectations of stakeholders (Marano and Kostova 2016). In addition, Chinese acquirers can learn from their own previous cross-border acquisition experiences in response to heightened CSR expectations (Collins et al. 2009). They can translate the experience gained from one host country into knowledge that may be used to deal with local legitimacy pressure relating to another host country, and indeed in their home market.

I perform the following analysis to examine whether the positive effect of cross-border acquisitions on the CSR performance of Chinese acquirers is stronger when they are exposed to multiple host countries. I sort Chinese acquirers (the treatment group) into multiple and single host country groups based on whether the cross-border deals pursued by these acquirers are located in multiple host countries during the sample period. I re-estimate Eq. (2.1) to compare the changes in the CSR performance of Chinese acquirers in the multiple and single host country groups with the changes in CSR performance of Chinese firms without cross-border acquisitions separately. Next, following Acharya et al. (2014), I modify Eq. (2.1) by replacing *CBA* with *CBA*×*Multiple* and *CBA*×*Single*, where the dummy variable *Multiple* is equal to 1 for the firm having cross-border deals that are located in multiple host countries during the sample period and is 0 otherwise; *Single* is defined as 1 minus the *Multiple*. These dummy variables then interact with *CBA*,

the indicator for cross-border acquisition. This double DiD specification allows us to examine the heterogeneous treatment effects.

The results are presented in Table 2.5. The coefficient on *CBA* is positive and significant for the multiple host country group but is insignificant for the single host country group in Columns (1) and (2). The result from the double DiD test in Column (3) indicates that the coefficient on *CBA*×*Multiple* is significantly positive, whereas the coefficient on *CBA*×*Single* is not significantly different from 0. These results indicate that the positive effect of cross-border acquisitions on CSR performance of Chinese acquirers is stronger for the acquirers exposed to multiple host countries, suggesting that exposure to multiple host countries motivates Chinese acquirers to improve CSR performance in response to heightened CSR expectations in divergent institutional environments compared to the Chinese firms without cross-border deals.

<Insert Table 2.5 About here>

2.5.2 Legal origin channel

In this section, I investigate the effect of legal origins of host countries on the CSR performance of Chinese acquirers. Following La Porta et al. (2008) and Liang and Renneboog (2017), I sort Chinese acquirers into five groups based on the legal traditions of the host countries: English common origin, French civil origin, German civil origin, Scandinavian civil origin, and socialist origin, as denoted by the following dummy variables: *Common*, *French_Civil*, *German_Civil*, *Scandinavian_Civil*, and *Socialist*. I also combine three civil law origin groups into a broader group, civil origin, as denoted by the dummy variable *Civil*. I re-estimate Eq. (2.1) to compare the changes in the CSR performance of Chinese acquirers in those legal origin groups with the changes in the CSR performance of Chinese firms without outbound acquisitions separately. Next, I perform a double DiD test by replacing *CBA* in Eq. (2.1) with *CBA*×*Common*, *CBA*×*French_Civil*, *CBA*×*German_Civil*, *CBA*×*Scandinavian_Civil*, and

CBA×*Socialist*, where the dummy variables indicating the legal traditions of host countries interact with *CBA*. I expect that both common law legal origin and civil law legal origin of host countries have positive effects on Chinese acquirers' CSR performance. Civil law countries are stakeholder orientated and have explicit or implicit rules about CSR, In common law countries, CSR adoption is determined largely by corporation discretion la and CSR rating is also higher than that in the socialist countries.

The results are reported in Table 2.6. The coefficients on *CBA* are positive and marginally significant for both the civil and common law origin groups in Columns (1) and (2). When the civil law origin group is further sorted into French, German, and Scandinavian law origin groups, the positive coefficient on CBA is marginally significant for the host countries with French legal tradition but not for the host countries with German and Scandinavian legal traditions or for socialist host countries in Columns (3)–(6). The result from the double DiD test in Column (7) indicates that the coefficient on *CBA*×*Common* is marginally and significantly positive, whereas the coefficients on the interaction variables between *CBA* and other law origins are not significantly different from 0. These results indicate that the positive effect of cross-border acquisitions on the CSR performance of Chinese acquirers is stronger for the acquirers exposed to the host countries with common and French civil law origins. According to the 2015 report by United Nations Development Programme, Chinese firms with overseas investments consider political and regulatory environments and labor issues as their main operational risks. It is not surprising that Chinese acquirers show much CSR engagement in host countries with common and French civil law origins, as stakeholders in these countries have heightened CSR expectations regarding corporate governance and worker rights.

<Insert Table 2.6 about here>

2.5.3 Social norms of host countries

Chinese firms must adapt to host countries' social norms to gain legitimacy. Stronger social norms in host countries thus are expected to heavily influence the CSR performance of Chinese acquirers. To test whether social norms of the host country influence the CSR engagement of Chinese acquirers, I begin by collecting country-level social norm data. Following Dyck et al. (2018), I use the Environmental Performance Index (EPI), obtained from the Yale Center for Environmental Law and Policy (Yale University) and the Center for International Earth Science Information Network (Columbia University) for the period 2008–2015 to measure a country's social norms in environment-related situations. The EPI is an observed-outcome metric and aggregates country-level data on 24 performance indicators across ten issue categories covering environmental health and ecosystem vitality. A higher index value indicates better environmental performance in a country.

I also use the World Values Environmental and Social (E&S) Index constructed by Dyck et al. (2018) as a measure of the aggregate environmental and social norms of host countries. Dyck et al. (2018) use 12 questions from the World Values Survey (WVS) to construct an aggregate E&S social norm measure.[13] Different from an observed-outcome based measure like EPI, the WVS data come from interviews with representative samples of 1,000 to 4,000 individuals in more than 100 countries, conducted in waves over several years, assessing peoples' values and beliefs using common questionnaires. The responses to the WVS have been used to measure social norms in prior research (Aghion et al. 2010; Berry et al. 2010). Higher values of the World Values E&S Index indicate stronger attitudes and beliefs toward E&S issues in a country.

[13] Dyck et al. (2018) choose 12 questions from the WVS that access a society's values in terms of environmental activism, lifestyle liberty, gender equality, personal autonomy, and the voice of the people in the period 1999–2010. Following the methodology of Welzel (2013), they aggregate the responses to these questions to construct their measure.

I sort Chinese acquirers into high and low social norm groups based on whether the index value of the EPI or the World Values E&S Index for the host country is higher than that of China in a given year, respectively. I re-estimate Eq. (2.1) to compare the changes in the CSR performance of Chinese acquirers in high or low social norm groups with the changes in the CSR performance of Chinese firms without cross-border acquisitions separately. Next, I modify Eq. (2.1) by replacing *CBA* with *CBA*×*High_EPI* and *CBA*×*Low_EPI*, where the dummy variable *High_EPI* takes the value of 1 if the index value of EPI for the host country is higher than that of China in a given year and is 0 otherwise; *Low_EPI* is defined as 1 minus *High_EPI*. This double DiD specification allows us to examine the heterogeneous treatment effects. Similarly, I estimate a double DiD specification by replacing *CBA* with *CBA*×*High_WVS* and *CBA*×*Low_WVS* in Eq. (2.1), where the dummy variable *High_WVS* equals 1 if the index value of the World Value E&S Index for the host country is higher than that of China in a given year and is 0 otherwise; *Low_WVS* is defined as 1 minus *High_WVS*. These dummy variables then interact with *CBA*.

Panel A of Table 2.7 reports the results of examining the effect of social norms of host countries on the CSR performance of Chinese acquirers using EPI scores. The coefficient on *CBA* is positive and significant for the high social norm group but is insignificant for the low social norm group in Columns (1) and (2). The result from the double DiD specification in Column (3) shows that the coefficient on *CBA*×*High_EPI* is significantly positive, whereas the coefficient on *CBA*×*Low_EPI* is not significantly different from 0. These results indicate that the positive effect of cross-border acquisitions on the CSR performance of Chinese acquirers is stronger for the acquirers exposed to high social norm host countries. The effect of social norms on *CSRscore* is also economically meaningful. Cross-border acquisitions taking place in host countries with

high social norms lead to an increase in the CSR performance of Chinese acquirers by approximately 5.176%.[14]

<Insert Table 2.7 about here>

Panel B of Table 2.7 reports the results using scores from World Values E&S Index. The coefficient on *CBA* is significantly positive for the high social norm group but is negative and significant for the low social norm group in Columns (1) and (2). The result from the double DiD specification in Column (3) shows that the coefficient on *CBA*×*High_WVS* is positive and statistically significant, whereas the coefficient on *CBA*×*Low_WVS* is significantly negative. These results indicate that, compared to the Chinese firms without cross-border deals, the CSR performance of Chinese acquirers improves through cross-border acquisitions in host countries with high social norms but deteriorates in host countries with low social norms. The economic effect is substantial. The CSR score of Chinese acquirers increases by 3.679% through their cross-border acquisitions in host countries with high social norms.[15]

2.5.4 Analysis conditional on SOEs

This section examines whether the results are different for SOEs. Chinese SOEs have political and financial support from the Chinese government to perform actively in cross-border acquisitions. They are also more experienced in cross-border acquisitions than other firms, as they have taken the lead in overseas acquisitions after the initiation of the Go Global policy (Schweizer et al. 2017). Non-SOEs are subject to competition in the global market and continue to face severe limitations when conducting overseas investments. Hence, they have strong incentives to make efficient investments and improve CSR performance to survive in the host countries.

[14] Note that 5.176% = 2.192/42.351, where 2.192 is the coefficient on *CBA*×*High_EPI* in Column (3) of Table 2.7, Panel A, and 42.351 is the average value of *CSCORE* for the treated firms in Table 2.2.
[15] Note that 3.679% = 1.558/42.351, where 1.558 is the coefficient on *CBA*×*High_WVS* in Column (3) of Table 2.7, Panel B, and 42.351 is the average value of *CSCORE* for the treated firms in Table 2.2.

To test whether the results are different between SOEs and non-SOEs, I separate the sample based on whether a firm is a SOE or non-SOE and re-examine the results. Following prior research, I define SOEs as firms with government as the ultimate controlling owner, and the other types of firms are non-SOEs. Panel A of Table 2.8 shows the distribution of SOEs and non-SOEs in the cross-border acquirer group and the benchmark group. There are more SOEs than non-SOEs in the sample and the cross-border acquirer group.

<Insert Table 2.8 about here>

Panel B of Table 2.8 shows the results of the regression. The coefficient on CBA is insignificant for the SOE subsample (Column (1)), but significantly positive at the 1% level for non-SOEs (Column (2)). These results indicate that non-SOEs engaging as cross-border acquirers tend to have better CSR performance than those non-SOEs that do not acquire overseas firms, but there is no significant difference in the CSR performance for SOEs that make cross-border acquisitions abroad or not. Column (3) reports the regression result of CSR on CBA, the interaction between CBA and SOE,[16] and the controls. The coefficient on CBA remains significantly positive at the 1% level. The interaction between CBA and SOE is negative and significant at the 10% level. The result is consistent with the expectation that non-SOEs conducting cross-border acquisitions are more likely to improve their CSR performance to preserve their image of legitimate business with legitimate aims and methods of achieving it.

However, SOEs are more likely to be in the polluting industries. To exclude the effects of industries, I keep only firms in the polluting industries.[17] The results are shown in Columns (4) and (5) of Panel B in Table 2.8. The coefficient on CBA remains

[16] I have included government ownerships in the control variables, which are highly correlated with the dummy variable SOE (the correlation between them is 50.3%, significant at the 1% level). To mitigate the collinearity, in the model shown in Column (3) of Table 2.8, SOE is not added.
[17] The most polluting industries were classified by the Environmental Protection Administration in China in 2008.

insignificant for SOEs in the polluting industries, and significantly positive at the 5% level for non-SOEs. The findings are consistent with the findings in Columns (1) and (2). Non-SOEs encounter more uncertainties in cross-border acquisitions and will improve CSR performance to overcome these. In addition, I keep only non-SOEs and examine the results of non-SOEs in the non-polluting industries. The coefficient on CBA is insignificant in Column (6). Combing the results in Columns (4)–(6), non-SOEs in the polluting industries have the highest need to improve CSR practices. For these firms, cross-border acquisitions can be the driver to improve CSR performance.

2.6 Conclusion

The study examines whether cross-border acquisitions are associated with better CSR performance for Chinese acquirers. I find that Chinese acquirers significantly improve their CSR performance following their cross-border acquisitions, compared with control firms. This result is robust to several alternative research designs including a DiD estimation, DiD estimation with PSM procedure and the Heckman two-stage regressions. The results are also robust when comparing cross-border acquirers separately with acquirers pursuing domestic acquisition deals only or non-acquiring firms, or when excluding firms that are cross-listed. Furthermore, I do not find an increasing trend in CSR performance of Chinese acquirers prior to the completion of their cross-border acquisitions, confirming the parallel trend assumption.

I also find evidence that the positive effect of cross-border acquisitions on the CSR performance of Chinese acquirers is stronger for the acquirers exposed to multiple host countries, host countries with common and French civil law origins, or host countries with high social norms. The study has an important policy implication. The Chinese government's Go Global policy aims at advancing domestic economic, social, and environmental development. I provide micro-level evidence supporting that, under the guidance of such a policy, Chinese firms are able to develop better CSR practices through

cross-border acquisitions. This should help achieve the social and environmental objective of the Go Global policy. Other developing countries may consider similar policies and guidance assisting in the cross-border acquisition activities of domestic firms to facilitate domestic social and environmental development.

Reference

Acharya, V. V., R. P. Baghai, and K. V. Subramanian. 2014. Wrongful Discharge Laws and Innovation. *The Review of Financial Studies* 27 (1):301-346.

Aghion, P., Y. Algan, P. Cahuc, and A. Shleifer. 2010. Regulation and Distrust*. *Quarterly Journal of Economics* 125 (3):1015-1049.

Ahern, K. R., D. Daminelli, and C. Fracassi. 2015. Lost in translation? The effect of cultural values on mergers around the world. *Journal of Financial Economics* 117 (1):165-189.

Andersson, U., M. Forsgren, and U. Holm. 2001. Subsidiary Embeddedness and Competence Development in MNCs A Multi-Level Analysis. *Organization Studies* 22 (6):1013-1034.

Andrade, G., M. Mitchell, and E. Stafford. 2001. New evidence and perspectives on mergers. *Journal of economic perspectives* 15 (2):103-120.

Argote, L., and P. Ingram. 2000. Knowledge Transfer: A Basis for Competitive Advantage in Firms. *Organizational Behavior and Human Decision Processes* 82 (1):150-169.

Berry, H., M. F. Guillén, and N. Zhou. 2010. An institutional approach to cross-national distance. *Journal of International Business Studies* 41 (9):1460-1480.

Bertrand, M., and S. Mullainathan. 2003. Enjoying the Quiet Life? Corporate Governance and Managerial Preferences. *Journal of Political Economy* 111 (5):1043-1075.

Boubakri, N., S. El Ghoul, H. Wang, O. Guedhami, and C. C. Y. Kwok. 2016. Cross-listing and corporate social responsibility. *Journal of Corporate Finance* 41:123-138.

Campbell, J. T., L. Eden, and S. R. Miller. 2012. Multinationals and corporate social responsibility in host countries: Does distance matter? *Journal of International Business Studies* 43 (1):84-106.

Carroll, A. B., and K. M. Shabana. 2010. The Business Case for Corporate Social Responsibility: A Review of Concepts, Research and Practice. *International Journal of Management Reviews* 12 (1):85-105.

Chen, Y.-C., M. Hung, and Y. Wang. 2018. The effect of mandatory CSR disclosure on firm profitability and social externalities: Evidence from China. *Journal of Accounting and Economics* 65 (1):169-190.

Collins, J. D., T. R. Holcomb, S. T. Certo, M. A. Hitt, and R. H. Lester. 2009. Learning by doing: Cross-border mergers and acquisitions. *Journal of Business Research* 62 (12):1329-1334.

Crandall, R. W., and C. Winston. 2003. Does antitrust policy improve consumer welfare? Assessing the evidence. *Journal of economic perspectives* 17 (4):3-26.

Cuervo-Cazurra, A., and R. Ramamurti. 2014. *Understanding multinationals from emerging markets*. Cambridge: Cambridge University Press.

Deng, X., J.-k. Kang, and B. S. Low. 2013. Corporate social responsibility and stakeholder value maximization: Evidence from mergers. *Journal of Financial Economics* 110 (1):87-109.

Dessaint, O., A. Golubov, and P. Volpin. 2017. Employment protection and takeovers. *Journal of Financial Economics* 125 (2):369-388.

Drezner, D. W. 2000. Bottom Feeders. *Foreign Policy* (121):64-70.

Dyck, A., K. V. Lins, L. Roth, and H. F. Wagner. 2018. Do institutional investors drive corporate social responsibility? International evidence. *Journal of Financial Economics*:https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2708589.

Erel, I., R. C. Liao, and M. S. Weisbach. 2012. Determinants of cross-border mergers and acquisitions. *The Journal of Finance* 67 (3):1045-1082.

Ghoul, S. E., O. Guedhami, and Y. Kim. 2017. Country-level institutions, firm value, and the role of corporate social responsibility initiatives. *Journal of International Business Studies* 48 (3):360-385.

Godfrey, P. C., C. B. Merrill, and J. M. Hansen. 2009. The relationship between corporate social responsibility and shareholder value: an empirical test of the risk management hypothesis. *Strategic Management Journal* 30 (4):425-445.

Gugler, P., and J. Y. J. Shi. 2008. Corporate Social Responsibility for Developing Country Multinational Corporations: Lost War in Pertaining Global Competitiveness? *Journal of Business Ethics* 87 (S1):3-24.

Gupta, A. K., and V. Govindarajan. 2000. Knowledge flows within multinational corporations. *Strategic Management Journal* 21 (4):473-496.

Heckman, J. J. 1979. Sample Selection Bias as a Specification Error. *Econometrica* 47 (1):153-161.

Huizinga, H., J. Voget, and W. Wagner. 2018. Capital gains taxation and the cost of capital: Evidence from unanticipated cross-border transfers of tax base. *Journal of Financial Economics* forthcoming.

Ioannou, I., and G. Serafeim. 2012. What drives corporate social performance? The role of nation-level institutions. *Journal of International Business Studies* 43 (9):834-864.

Kim, H., K. Park, and D. Ryu. 2017. Corporate Environmental Responsibility: A Legal Origins Perspective. *Journal of Business Ethics* 140 (3):381-402.

Klasa, S., H. Ortiz-Molina, M. Serfling, and S. Srinivasan. 2018. Protection of trade secrets and capital structure decisions. *Journal of Financial Economics* 128 (2):266-286.

Koh, P.-S., C. Qian, and H. Wang. 2014. Firm litigation risk and the insurance value of corporate social performance. *Strategic Management Journal* 35 (10):1464-1482.

Kostova, T., and S. Zaheer. 1999. Organizational Legitimacy under Conditions of Complexity: The Case of the Multinational Enterprise. *The Academy of Management Review* 24 (1):64-81.

La Porta, R., F. Lopez-De-Silanes, and A. Shleifer. 2008. The economic consequences of legal origins. *Journal of Economic Literature* 46 (2):285-332.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. W. Vishny. 1998. Law and Finance. *Journal of Political Economy* 106 (6):1113-1155.

Lee, C. M. C., S. T. Sun, R. Wang, and R. Zhang. 2018. Technological Links and Predictable Returns. *Journal of Financial Economics* (Forthcoming):https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3036241.

Lennox, C. S., J. R. Francis, and Z. Wang. 2012. Selection Models in Accounting Research. *The Accounting Review* 87 (2):589-616.

Liang, H., and L. Renneboog. 2017. On the Foundations of Corporate Social Responsibility. *The Journal of Finance* 72 (2):853-910.

Libby, R., and J. Luft. 1993. Determinants of judgment performance in accounting settings: Ability, knowledge, motivation, and environment. *Accounting, Organizations and Society* 18 (5):425-450.

Luo, X. R., D. Wang, and J. Zhang. 2017. Whose Call to Answer: Institutional Complexity and Firms' CSR Reporting. *Academy of Management Journal* 60 (1):321-344.

Luo, Y., and R. L. Tung. 2017. A general theory of springboard MNEs. *Journal of International Business Studies* 49 (2):129-152.

Marano, V., and T. Kostova. 2016. Unpacking the Institutional Complexity in Adoption of CSR Practices in Multinational Enterprises. *Journal of Management Studies* 53 (1):28-54.

Marano, V., P. Tashman, and T. Kostova. 2017. Escaping the iron cage: Liabilities of origin and CSR reporting of emerging market multinational enterprises. *Journal of International Business Studies* 48 (3):386-408.

Marquis, C., and C. Qian. 2014. Corporate Social Responsibility Reporting in China: Symbol or Substance? *Organization Science* 25 (1):127-148.

McGuinness, P. B., J. P. Vieito, and M. Wang. 2017. The role of board gender and foreign ownership in the CSR performance of Chinese listed firms. *Journal of Corporate Finance* 42:75-99.

Miska, C., M. A. Witt, and G. K. Stahl. 2016. Drivers of Global CSR Integration and Local CSR Responsiveness: Evidence from Chinese MNEs. *Business Ethics Quarterly* 26 (03):317-345.

Moeller, S. B., F. P. Schlingemann, and R. M. Stulz. 2004. Firm size and the gains from acquisitions. *Journal of Financial Economics* 73 (2):201-228.

Moeller, S. B., F. P. Schlingemann, and R. M. Stulz. 2005. Wealth Destruction on a Massive Scale? A Study of Acquiring-Firm Returns in the Recent Merger Wave. *The Journal of Finance* 60 (2):757-782.

Nelson, M., and H. T. Tan. 2005. Judgment and Decision Making Research in Auditing: A Task, Person, and Interpersonal Interaction Perspective. *AUDITING: A Journal of Practice & Theory* 24 (s-1):41-71.

Nyborg, K., J. M. Anderies, A. Dannenberg, T. Lindahl, C. Schill, M. Schluter, W. N. Adger, K. J. Arrow, S. Barrett, S. Carpenter, F. S. Chapin, 3rd, A. S. Crepin, G. Daily, P. Ehrlich, C. Folke, W. Jager, N. Kautsky, S. A. Levin, O. J. Madsen, S. Polasky, M. Scheffer, B. Walker, E. U. Weber, J. Wilen, A. Xepapadeas, and A. de Zeeuw. 2016. Social norms as solutions. *Science* 354 (6308):42-43.

Rathert, N. 2016. Strategies of legitimation: MNEs and the adoption of CSR in response to host-country institutions. *Journal of International Business Studies* 47 (7):858-879.

Roberts, M. R., and T. M. Whited. 2013. Endogeneity in empirical corporate finance1. In *Handbook of the Economics of Finance*. Amsterdam: Elsevier, 493-572.

Schweizer, D., T. Walker, and A. Zhang. 2017. Cross-border acquisitions by Chinese enterprises: The benefits and disadvantages of political connections. *Journal of Corporate Finance* forthcoming:https://www.sciencedirect.com/science/article/pii/S0929119917301335.

Sethi, S. P. 1979. A Conceptual Framework for Environmental Analysis of Social Issues and Evaluation of Business Response Patterns. *The Academy of Management Review* 4 (1):63-74.

Shleifer, A., and R. W. Vishny. 2003. Stock market driven acquisitions. *Journal of Financial Economics* 70 (3):295-311.

Suchman, M. C. 1995. Managing Legitimacy: Strategic and Institutional Approaches. *Academy of Management Review* 20 (3):571-610.

Symeou, P. C., S. Zyglidopoulos, and P. Williamson. 2018. Internationalization as a driver of the corporate social performance of extractive industry firms. *Journal of World Business* 53 (1):27-38.

Tallman, S., and A. S. Chacar. 2011. Knowledge accumulation and dissemination in MNEs: a practice-based framework. *Journal of Management Studies* 48 (2):278-304.

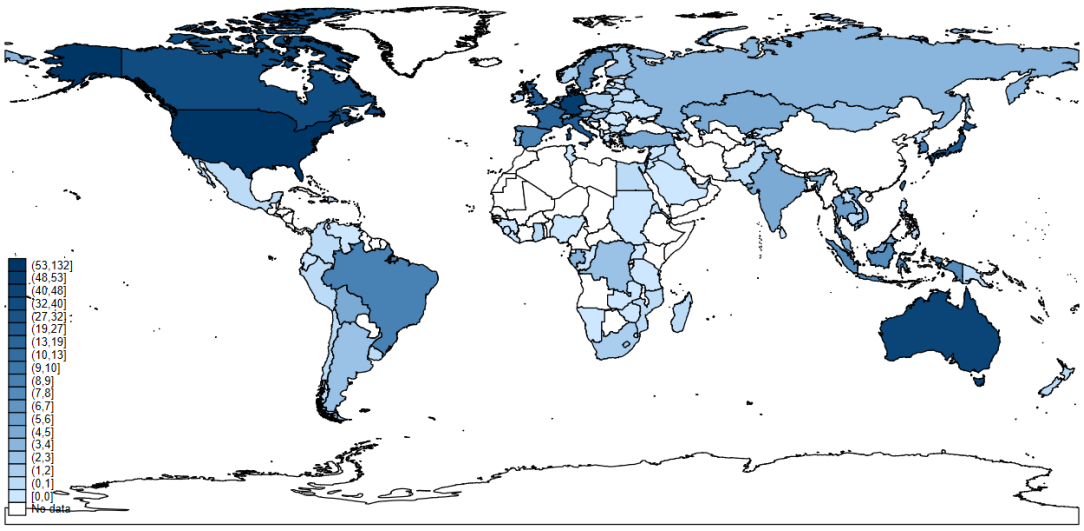
Tashman, P., V. Marano, and T. Kostova. 2018. Walking the walk or talking the talk? Corporate social responsibility decoupling in emerging market multinationals. *Journal of International Business Studies* forthcoming:https://doi.org/10.1057/s41267-41018-40171-41267.

Welzel, C. 2013. *Freedom rising: Human empowerment and the quest for emancipation*. New York: Cambridge University Press.

Zahra, S. A., R. D. Ireland, and M. A. Hitt. 2000. International Expansion by New Venture Firms: International Diversity, Mode of Market Entry, Technological Learning, and Performance. *Academy of Management Journal* 43 (5):925-950.

Figure 2.1

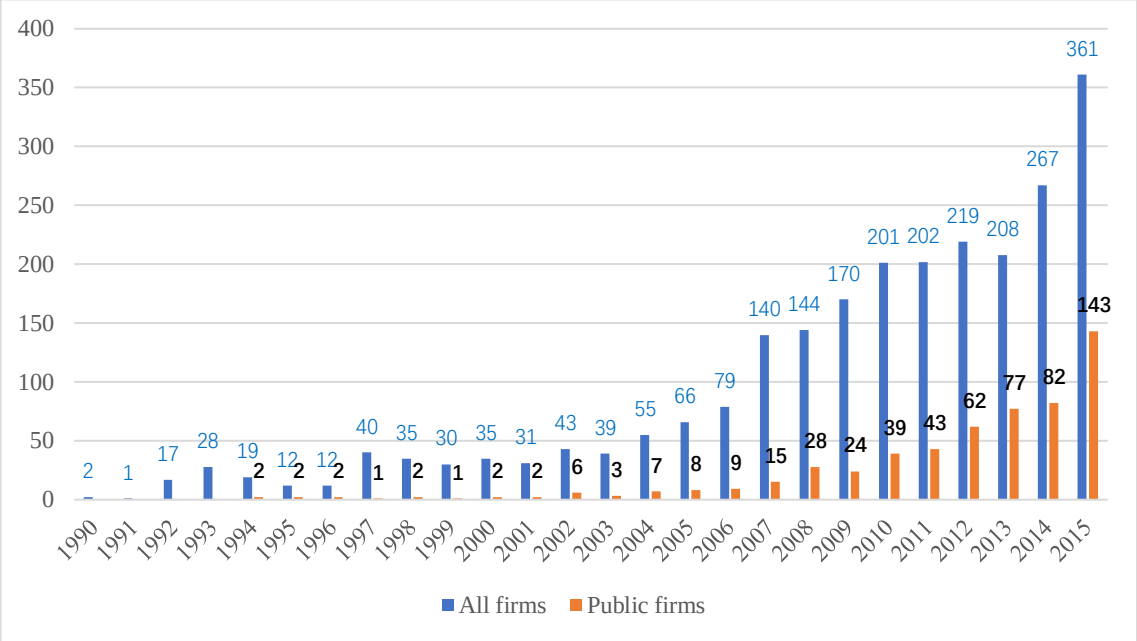
Distribution of the destinations of cross-border acquisitions of Chinese firms



This figure presents the distribution of the destinations of the cross-border acquisitions of Chinese firms on a world map and includes 113 host countries. The darker shading indicates a greater number of cross-border acquisitions completed in that country.

Figure 2.2

Cross-border acquisitions by Chinese firms (1990–2015)



This figure depicts the number of completed cross-border acquisitions by Chinese firms from 1990 to 2015.

Table 2.1

Firm-year distribution by industry

	CSR score					
	Firm years after cross-border acquisition completion (Treatment group)			Firms years before or without cross-border acquisition completion (Control group)		
Industry	*N*	*Mean*	*SD*	*N*	*Mean*	*SD*
Agriculture	4	36.575	11.919	55	32.159	8.997
Mining	49	53.306	16.826	123	40.505	13.068
Food and beverage	27	41.229	9.246	147	36.242	9.117
Textile, clothing, and leather	24	29.990	8.202	114	32.660	8.002
Wood and furniture	8	34.161	3.242	1	37.622	n/a
Paper making and printing	11	40.947	11.389	87	31.981	8.073
Petroleum, chemistry, and plastic	34	34.424	7.521	314	35.788	9.696
Electronic	41	44.281	11.165	124	34.520	10.814
Mental and non-mental	78	41.824	14.505	348	37.067	10.250
Machine, facility, and instrument	122	40.210	11.184	544	35.229	9.532
Medicine and biological product	32	47.845	21.990	182	38.029	10.555
Others	n/a	n/a	n/a	78	30.145	7.644
Electricity, gas, and water production and supply	11	33.007	3.330	182	40.472	12.943
Architecture	54	40.170	15.935	80	40.806	11.390
Transportation and warehouse	28	59.214	17.779	214	36.633	12.844
Information technology	69	40.586	13.846	218	35.489	10.078
Wholesale and retail	20	50.070	13.920	138	39.312	12.015
Real estate	20	50.087	18.589	146	32.723	10.330
Social service	n/a	n/a	n/a	88	37.829	9.832
Communication and culture	9	25.833	7.369	29	33.482	7.973
Comprehensive industry	11	34.028	11.361	142	31.091	7.516
Total	652	42.351	15.090	3,354	35.957	10.627

Notes: This table presents the distribution of CSR scores for firm-years after the completion of cross-border acquisitions (the treatment group), and for firm-years before or without the completion of cross-border acquisitions (the control group) by industry based on the China Security Regulatory Commission industry classification.

Table 2.2

Descriptive statistics and correlations

Panel A Descriptive statistics of the full sample

	N	*Mean*	*SD*	*Min*	*P25*	*Median*	*P75*	*Max*
CSCORE	4,006	36.998	11.710	13.330	29.050	34.580	42.138	87.950
CBA	4,006	0.114	0.317	0.000	0.000	0.000	0.000	1.000
SIZE	4,006	22.796	1.332	18.811	21.824	22.687	23.657	25.681
AGE	4,006	2.310	0.629	0.000	1.946	2.485	2.773	3.258
SGR	4,006	0.171	0.474	-0.686	-0.028	0.106	0.262	4.666
LEV	4,006	0.498	0.202	0.046	0.350	0.513	0.654	1.501
TOBINQ	4,006	1.825	1.838	0.227	0.676	1.283	2.244	14.563
ROA	4,006	0.045	0.054	-0.263	0.016	0.038	0.070	0.226
CASH	4,006	0.170	0.122	0.006	0.086	0.137	0.221	0.742
GOV	4,006	0.083	0.174	0.000	0.000	0.000	0.034	0.718
DUAL	4,006	0.154	0.361	0.000	0.000	0.000	0.000	1.000
RD	4,006	0.003	0.011	0.000	0.000	0.000	0.000	0.082
RN	4,006	0.021	0.043	0.000	0.000	0.004	0.019	0.263
BIG4	4,006	0.115	0.319	0.000	0.000	0.000	0.000	1.000

Panel B Descriptive statistics the treatment and control groups

	Treatment group		Control group		*t*-stat. of difference in means	*Chi*^{2} of difference in medians
	N = 652		*N* = 3,354			
	Mean	*Median*	*Mean*	*Median*		
CSCORE	42.351	38.914	35.957	33.899	-6.394***	66.585***
SIZE	23.569	23.569	22.645	22.526	-0.923***	162.679***
AGE	2.312	2.485	2.310	2.485	-0.002	2.122
SGR	0.173	0.113	0.170	0.105	-0.003	0.359
LEV	0.539	0.567	0.490	0.502	-0.049***	39.049***
TOBINQ	1.625	1.016	1.864	1.334	0.239***	23.807***
ROA	0.045	0.038	0.045	0.038	-0.001	0.000
CASH	0.176	0.145	0.169	0.135	-0.007	2.118
GOV	0.079	0.000	0.084	0.000	0.004	0.851
DUAL	0.189	0.000	0.147	0.000	-0.042***	7.396***
RD	0.003	0.000	0.003	0.000	-0.001	42.099***
RN	0.019	0.005	0.021	0.004	0.002	6.595**
BIG4	0.278	0.000	0.083	0.000	-0.194***	202.007***

Table 2.2 - Continued

Panel C Pearson Correlations						
	CSCORE	*CBA*	*SIZE*	*AGE*	*SGR*	*LEV*
CSCORE						
CBA	0.252***					
SIZE	0.442***	0.219***				
AGE	0.036**	0.030***	0.239***			
SGR	-0.024	-0.001	0.037***	-0.009		
LEV	0.101***	0.023***	0.249***	0.408***	0.027***	
TOBINQ	-0.113***	-0.032***	-0.452***	-0.148***	0.069***	-0.276***
ROA	-0.004	-0.003	0.036***	-0.209***	0.189***	-0.398***
CASH	-0.062***	-0.025***	-0.203***	-0.439***	0.017**	-0.438***
GOV	-0.020	-0.044***	0.134***	0.018***	0.073***	0.100***
DUAL	-0.045***	0.007	-0.170***	-0.218***	0.003	-0.136***
RD	0.0160	0.034***	-0.047***	-0.087***	-0.009	-0.138***
DN	-0.066***	-0.006	-0.056***	-0.098***	0.010	-0.094***
BIG4	0.315***	0.163***	0.364***	0.044***	-0.016**	0.060***

	TOBINQ	*ROA*	*CASH*	*GOV*	*DUAL*	*RD*	*DN*
CSCORE							
CBA							
SIZE							
AGE							
SGR							
LEV							
TOBINQ							
ROA	0.174***						
CASH	0.215***	0.286***					
GOV	-0.106***	-0.008	-0.081***				
DUAL	0.134***	0.049***	0.148***	-0.152***			
RD	0.131***	0.028***	0.116***	-0.052***	0.064***		
DN	0.068***	0.150***	0.068***	-0.044***	0.032***	0.016**	
BIG4	-0.098***	0.042***	-0.068***	0.078***	-0.073***	-0.019***	-0.034***

Notes: Panel A of this table presents the descriptive statistics for the full sample. Panel B of this table presents the descriptive statistics for firm years after the completion of cross-border acquisition activities (the treatment group), and for firm years before or without the completion of cross-border acquisition activities (the control group). Panel C of this table presents the Pearson correlations among the main regression variables. Continuous variables are winsorized at the 1st and 99th percentiles of their distributions. Variable definitions are provided in Appendix 2.1. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 2.3

Effect of cross-border acquisitions on the CSR performance of Chinese acquirers

	Full sample	PSM sample	Heckman two-stage regression	
			First-stage	Second-stage
	(1)	(2)	(3)	(4)
CBA	**1.943****	**1.894****		**1.996*****
	(2.482)	**(2.609)**		**(2.533)**
SIZE	1.174***	0.128	0.361***	0.887
	(3.286)	(0.148)	(15.366)	(2.317)
ROA	0.696***	1.660***	2.385***	0.632
	(3.087)	(3.050)	(4.642)	(3.064)
LEV	1.430	9.138	-2.277***	4.678
	(0.438)	(0.628)	(-3.879)	(1.326)
RD	-0.155	-0.553	0.029	-0.170
	(-0.320)	(-0.637)	(0.839)	(-0.333)
SGR	-0.462	-29.941	-0.555*	-0.173
	(-0.398)	(-0.162)	(-2.188)	(-0.146)
AGE	0.386	0.327		0.017
	(0.834)	(0.327)		(0.038)
CASH	-0.071	0.623**		-0.071
	(-0.694)	(2.540)		(-0.644)
TOBINQ	-0.874***	-1.728***		-0.866**
	(-6.332)	(-4.339)		(-5.962)
GOV	-0.002	-0.246		0.014
	(-0.025)	(-1.063)		(0.178)
DUAL	-0.661*	-1.106		-0.664
	(-1.918)	(-1.391)		(-1.960)
DN	6.077***	9.240**		6.169***
	(2.899)	(2.146)		(2.899)
BIG4	0.767	0.885		0.736
	(0.684)	(0.520)		(0.652)
MANDATE			3.237***	
			(45.942)	
CSRIND			3.016***	
			(5.588)	
Inverse Mills Ratio				-0.896***
				(-6.345)
Observations	4,006	1,435	15,435	4,006
Firm FE	Yes	Yes	No	Yes
Industry×Year FE	Yes	Yes	Yes	Yes
Pseudo R^2/Adjust R^2	0.470	0.530	0.500	0.472

Notes: Columns (1) and (2) of this table report DiD estimates from the regressions of the CSR performance of Chinese acquirers on their cross-border acquisitions for the period 2008–2015 using the full sample and PSM sample. Columns (3) and (4) of this table present coefficient estimates from the Heckman two-stage regression. Continuous variables are winsorized at the 1st and 99th percentiles of their distributions. The two-tailed t-statistics (t-statistics for the Heckman first-stage model in Column (3)) in parentheses are based on heteroscedasticity-robust standard errors clustered by country. Variable definitions are provided in Appendix 2.1. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 2.4

Testing for parallel trend assumption and robustness checks

Panel A Testing for parallel trend assumption		
	CSR score	
	Coeff.	*t*-stat.
CBA^{-5}	1.513	(1.054)
CBA^{-4}	0.421	(0.262)
CBA^{-3}	1.411	(1.008)
CBA^{-2}	1.439	(0.876)
CBA^{-1}	2.593	(1.563)
CBA^{0}	**3.078***	**(1.715)**
CBA^{+1}	**4.171****	**(2.200)**
CBA^{+2}	**3.861****	**(2.394)**
CBA^{+3}	**5.677*****	**(3.130)**
CBA^{+4}	**5.373****	**(2.274)**
CBA^{+5}	**5.432****	**(2.457)**
CBA^{+6}	**5.365*****	**(2.793)**
Control variables	Yes	
Observations	4,006	
Firm FE	Yes	
Industry×Year FE	Yes	
Adjust R^2	0.844	

Panel B Robustness checks using alternative samples

	Control: domestic-acquiring firms	Control: domestic-acquiring firms with acquiring dates matched	Control: non-acquiring firms	Control: firms with failed cross-border acquiring deals	Excluding cross-listed firms	Including firms with cross-border acquisitions only
	(1)	(2)	(3)	(4)	(5)	(6)
CBA	**1.891** **(2.357)**	**1.334** **(1.415)**	**1.675*** **(1.915)**	**1.851*** **(1.930)**	**2.234**** **(2.548)**	**1.961*** **(1.839)**
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,116	1213	1,542	580	3,671	652
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry×Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.487	0.586	0.544	0.699	0.484	0.658

Notes: Panel A of this table reports DiD estimates from regressions of the CSR performance of Chinese acquirers on their cross-border acquisitions for the period 2008–2015. I include 12 indicator variables (CBA^{-5}, CBA^{-4}, CBA^{-3}, CBA^{-2}, CBA^{-1}, CBA^{0}, CBA^{+1}, CBA^{+2}, CBA^{+3}, CBA^{+4}, CBA^{+5}, and CBA^{+6}) to examine the timing of changes in the CSR performance of Chinese acquirers relative to the timing of completion of their cross-border acquisitions. Panel B of this table reports the results of robustness checks using alternative samples. Continuous variables are winsorized at the 1st and 99th percentiles of their distributions. The two-tailed *t*-statistics in parentheses are based on heteroscedasticity-robust standard errors clustered by country. Variable definitions are provided in Appendix 2.1. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 2.5

Effect of multiple host countries on the CSR performance of Chinese acquirers

	Multiple host country group (1)	Single host country group (2)	Full sample (3)
CBA*×*Multiple			**2.439*** **(1.871)**
CBA×*Single*			-0.262 (-0.163)
CBA	**3.246***** **(3.651)**	1.023 (0.939)	1.261 (1.407)
Control variables	Yes	Yes	Yes
Observations	3,671	3,768	4,006
Firm FE	Yes	Yes	Yes
Industry×Year FE	Yes	Yes	Yes
Adjusted R^2	0.444	0.435	0.446

Notes: This table reports DiD estimates from regressions of the CSR performance of Chinese acquirers on their cross-border acquisitions grouped by multiple or a single host country for the period 2008–2015. I sort Chinese acquirers into multiple and single host country groups based on whether the cross-border deals pursued by these acquirers are located in multiple host countries during the sample period. Continuous variables are winsorized at the 1st and 99th percentiles of their distributions. The two-tailed *t*-statistics in parentheses are based on heteroscedasticity-robust standard errors clustered by country. Variable definitions are provided in Appendix 2.1. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 2.6

Effect of legal origins of host countries on the CSR performance of Chinese acquirers

	Civil	Common	French Civil	German Civil	Scandinavian Civil	Socialist	Full Sample
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CBA	**2.753***	**1.302***	**4.340***	-0.148	3.087	4.690	
	(1.737)	**(1.719)**	**(1.707)**	(-0.081)	(1.244)	(0.821)	
CBA×*Common*							**1.435***
							(1.872)
CBA×*French_Civil*							4.307
							(1.642)
CBA×*German_Civil*							-0.540
							(-0.277)
CBA×*Scandinavian_Civil*							3.260
							(1.225)
CBA×*Socialist*							4.779
							(0.817)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,604	3,756	3,447	3,462	3,372	3,385	4,006
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.465	0.469	0.465	0.463	0.460	0.459	0.472

Notes: This table reports DiD estimates from regressions of the CSR performance of Chinese acquirers on their cross-border acquisitions grouped by legal origins of host countries for the period 2008–2015. I sort Chinese acquirers into five groups based on the legal traditions of host countries: English common origin, French civil origin, German civil origin, Scandinavian civil origin, and socialist origin. I also combine three civil law origin groups into a broader group, civil origin. Continuous variables are winsorized at the 1st and 99th percentiles of their distributions. The two-tailed *t*-statistics in parentheses are based on heteroscedasticity-robust standard errors clustered by country. Variable definitions are provided in Appendix 2.1. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 2.7

Effect of social norms of the host country on the CSR performance of Chinese acquirers

Panel A Environmental Performance Index			
	High social norms group	Low social norms group	Full sample
	(1)	(2)	(3)
CBA×*High_EPI*			**2.192****
			(2.338)
CBA×*Low_EPI*			-2.341
			(-1.205)
CBA	**2.141****	-1.500	
	(2.278)	(-0.501)	
Control variables	Yes	Yes	Yes
Observations	3,865	3,387	3,898
Firm FE	Yes	Yes	Yes
Industry×Year FE	Yes	Yes	Yes
Adjust R^2	0.471	0.458	0.470
Panel B World Values E&S Index			
	High social norms group	Low social norms group	Full sample
	(1)	(2)	(3)
CBA×*High_WVS*			**1.558***
			(1.944)
CBA×*Low_WVS*			**-3.642*****
			(-2.761)
CBA	**1.551***	**-4.645*****	
	(1.935)	**(-3.039)**	
Control variables	Yes	Yes	Yes
Observations	3,938	3,372	3,956
Firm FE	Yes	Yes	Yes
Industry×Year FE	Yes	Yes	Yes
Adjust R^2	0.474	0.459	0.473

Notes: This table reports DiD estimates from regressions of the CSR performance of Chinese acquirers on their cross-border acquisitions grouped by the social norms of host countries for the period 2008–2015. In Panel A, I sort Chinese acquirers into high and low social norm groups based on whether the index value of the Environmental Performance Index (EPI) for the host country is higher than that of China in a given year. The EPI is obtained from the Yale Center for Environmental Law and Policy (Yale University) and the Center for International Earth Science Information Network (Columbia University) to measure a country's social norms in environment-related situations. In Panel B, I sort Chinese acquirers into high and low social norm groups based on whether the index value of World Values E&S Index constructed by Dyck et al. (2018) for the host country is higher than that of China in a given year. The World Values E&S Index uses data from the World Values Survey to access a society's values regarding environmental activism, lifestyle liberty, gender equality, personal autonomy, and the voice of the people. Continuous variables are winsorized at the 1st and 99th percentiles of their distributions. The two-tailed *t*-statistics in parentheses are based on heteroscedasticity-robust standard errors clustered by country. Variable definitions are provided in Appendix 2.1. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 2.8

Effect of cross-border acquisitions on the CSR performance of Chinese acquirers from SOEs vs. non-SOEs

Panel A Ownership of cross-border acquirers and non-cross-border acquirers

	Non-cross-border acquirers	Cross-border acquirers	Total
Non-SOE	1,228	272	1,500
SOE	2,126	380	2,506
Total	3,354	652	4,006

Panel B SOEs and Non-SOEs

	SOEs	Non-SOEs	Full sample	SOEs in polluting industries	non-SOEs in polluting industries	non-SOEs in non-polluting industries
	(1)	(2)	(3)	(4)	(5)	(6)
CBA	0.682	3.635***	2.894***	2.198	4.002**	0.678
	(0.560)	(3.778)	(2.979)	(1.346)	(2.199)	(0.759)
CBA×SOE			**-1.870***			
			(-1.849)			
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,506	1,500	4,006	1,409	698	802
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry×Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.470	0.561	0.471	0.369	0.466	0.328

Notes: All control variables are winsorized at the 1st and 99th percentile levels. The two-tailed *t*-statistics in parentheses are based on heteroscedasticity-robust standard errors clustered by country. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Appendix 2.1

Variable Definitions

Variable	Definition
Dependent variable	
CSCORE	A firm's CSR performance rating score provided by the Rankins CSR Ratings (RKS). The RKS is an independent and leading CSR rating agency in China. It covers all listed firms issuing CSR reports in China and provides yearly CSR ratings, with scores available from 2008. The RKS creates a rating system of CSR reports based on the Global Reporting Initiative (3.0) adapted to the Chinese context.
Variable of interest	
CBA	For firms that have completed cross-border acquisition deals, *CBA* is the dummy variable equal to 0 in all years preceding the date of the completion of the first cross-border acquisition, and equal to 1 in the year of the completion of the first cross-border acquisition and afterward. For firms that do not engage in cross-border acquisition activities, *CBA* is equal to 0 in all years.
Control variables	
SIZE	Natural logarithm of the total assets at the fiscal year end.
LEV	Total liability divided by the total assets at the fiscal year end.
ROA	Return on assets, defined as net income divided by total assets at the fiscal year end.
SG	Sales growth, defined as the sales in the current year minus the sales in the previous year, divided by the sales in the previous year.
RD	Research and development expenses divided by the total assets at the fiscal year end.
CASH	Cash and cash equivalents divided by the total assets at the fiscal year end.
TOBINQ	Book value of the equity divided by the market value of the equity at the fiscal year end.
AGE	Natural logarithm of a firm's age. A firm's age is defined as the difference between the current fiscal year and the establishment year of the firm.
GOV	Percentage of government shareholdings.
DUAL	Dummy variable that is equal to 1 if the CEO and chairman are the same person and is 0 otherwise.
DN	Annual donations divided by the total assets at the fiscal year end.
BIG4	Dummy variable that is equal to 1 if a firm is audited by a big 4 audit firm and is 0 otherwise.
MANDATE	Dummy variable that is equal to 1 if a firm is mandated to disclose a CSR report in a given year and is 0 otherwise.
CSRIND	Percentage of firms in an industry that issues CSR reports in a given year.
CBAIND	Percentage of firms that conduct cross-border acquisitions of the total listed firms in an industry.

SOE	Dummy variable that is equal to 1 if the firm is a state-owned enterprise and is 0 otherwise.
Country-level variables	
Multiple	Dummy variable that is equal to 1 for the firm having cross-border deals that are located in multiple host countries during the sample period and is 0 otherwise.
Single	Dummy variable that is equal to 1 minus *Multiple*.
Common	Dummy variable that is equal to 1 if the legal tradition of the host country is English common law origin and is 0 otherwise.
Civil	Dummy variable that is equal to 1 if the legal tradition of the host country is French civil law origin, German civil law origin, or Scandinavian civil law origin and is 0 otherwise.
French_Civil	Dummy variable that is equal to 1 if the legal tradition of the host country is French civil law origin and is 0 otherwise.
German_Civil	Dummy variable that is equal to 1 if the legal tradition of the host country is German civil law origin, and 1 otherwise.
Scandinavian_Civil	Dummy variable that is equal to 1 if the legal tradition of the host country is Scandinavian civil law origin and is 0 otherwise.
Socialist	Dummy variable that is equal to 1 if the host country is current or former socialist countries and is 0 otherwise.
High_EPI	Dummy variable that is equal to 1 if the index value of the Environmental Performance Index (EPI) for the host country is higher than that of China in a given year. The EPI is obtained from the Yale Center for Environmental Law and Policy (Yale University) and Center for International Earth Science Information Network (Columbia University) for the period 2008–2015 to measure a country's social norms in environment-related situations. The EPI is an observed-outcome metric and aggregates country-level data on 24 performance indicators across ten issue categories covering environmental health and ecosystem vitality.
Low_EPI	Dummy variable that is equal to 1 minus *High_EPI*.
High_WVS	Dummy variable that is equal to 1 if the index value of World Values E&S Index for the host country is higher than that of China in a given year. The World Values E&S Index was constructed by Dyck et al. (2018) and uses data from the World Values Survey to access a society's values regarding environmental activism, lifestyle liberty, gender equality, personal autonomy, and the voice of the people.
Low_WVS	Dummy variable that is equal to 1 minus *High_WVS*.

Appendix 2.2

Propensity score matching procedure

	Probit model	
	Coeff.	*z*-stat.
SIZE	0.531***	(7.243)
LEV	-1.081**	(-2.016)
ROA	-0.305	(-0.167)
TANG	-2.141***	(-4.560)
TOBINQ	0.146***	(2.650)
CBAPER	-18.071***	(-3.423)
GOV	-0.637	(-1.408)
Observations	3,137	
Pseudo R^2	0.123	

Notes: This table reports the coefficient estimates and robust *t*-statistics (in parentheses) from the probit model used to find propensity scores. Variable definitions are provided in Appendix 2.1. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

3 CHAPTER THREE

SHORT SELLING, MARGIN TRADING, AND CORPORATE SOCIAL RESPONSIBILITY

3.1 Introduction

Short sellers and margin traders are the most informative speculators and investors in the capital market. Despite contributing to increasing stock-price informativeness, short sellers are disliked by firms for depressing stock prices by exposing adverse information and undermining the confidence of investors, and margin traders are often blamed for producing excess volatility and destabilizing the market (Massa et al. 2015b; Karpoff and Lou 2010; Seguin 1990). Firms have incentives to take actions to shield against threats from them. Recent studies have investigated how firms respond to potential risks from short selling and margin trading by reducing earnings management, corporate misconduct, and the precision of management forecasts (Massa et al. 2015b; Grullon et al. 2015; Li and Zhang 2015). However, few studies focus on the non-financial responses regarding short sellers and/or margin traders. In this paper, I examine whether firms adjust their CSR activities in response to the potential effect of short selling and/or margin trading on their stock prices under a pilot program in China that lifted the ban on

short selling and margin trading for stocks on a designated list as a quasi-natural experiment.

The stock market in China has been highly regulated, and short selling and margin trading were completely banned until recently. On March 31, 2010, the China Securities Regulatory Commission (CSRC) launched a pilot program permitting short selling and margin trading in China for stocks on a designated list. After several rounds of list revisions regarding qualification, more than one-third of the total listed stocks in China have been included in the CSRC pilot program; hence, the ban on short selling and margin trading on these stocks has been lifted. The dual design of the CSRC pilot program in China provides an ideal setting to examine the joint effect of short selling and margin trading on the CSR performance of pilot firms relative to that of the non-pilot firms. Short selling and margin trading are integral parts of market mechanisms. Short selling can reduce overpricing and play a disciplinary role as an external governance mechanism, while margin traders have a speculative nature to exacerbate observed overpricing (Bhojraj et al. 2009). Moreover, the setting of the CSRC pilot program also allows me to distinguish the effect on CSR performance caused by short selling from that caused by margin trading. Thus, the separate effect of short selling and margin trading on CSR performance during the CSRC pilot program can be investigated. Furthermore, the CSRC pilot program represents an exogenous shock to examine whether the pilot firms respond to the threats of short selling and margin trading from non-financial aspects. These pilot firms are selected gradually by the CSRC from 2010 to the present, creating both the time-series and cross-sectional variations in short-selling and margin-trading restrictions for firms. Finally, the CSRC pilot program provides a good opportunity to examine whether market mechanisms, such as short selling and/or margin trading, that encourage socially responsible practices and disciplined managerial practices would affect the CSR performance of the pilot firms relative to that of non-pilot firms in an emerging market.

The issue of CSR is of growing interest and has become prevalent worldwide for the past decades. Many firms engage in CSR activities and issue CSR reports as customers, employees, and other stakeholders require firms to be socially responsible. I argue that managers act strategically to deter the attentions of short sellers and mitigate the effect of short-selling threats by adopting CSR practices for several reasons. First, CSR practices can enhance the corporate image and send a positive signal to the market that firms refrain from opportunistic behaviors, leaving a lower likelihood of uncovering bad news or value-destroying events by short sellers. The positive image established by engaging in CSR can help firms protect themselves against risks of adverse political, regulatory, and social penalties brought by negative corporate events (Godfrey 2005; Godfrey et al. 2009; Hoi et al. 2013). Next, the potential downward price pressure from short selling gives managers an incentive to take insurance actions to discourage short selling (Servaes and Tamayo 2013; Lins et al. 2017; Hong and Liskovich 2016). Lins et al. (2017) documented that firms with high CSR intensity experience higher stock returns than firms with low CSR intensity during the 2008–2009 financial crisis. Their findings support that CSR activities bring an enhanced insurance benefit during a crisis of trust.

On the other hand, margin trading is often viewed as a non-binding constraint in China (Chang et al. 2014; Li et al. 2017). Investors can easily avoid the ban on margin trading by borrowing from various sources and creating leveraged positions. Margin trading has always existed in the market, and the formal introduction of margin trading by the CSRC pilot program will not give managers an incentive to undertake actions to encourage or discourage margin trading. Thus, lifting the ban on margin trading is not expected to affect the CSR performance of the pilot firms.

Using 3,408 firm-year observations covering both the pilot firms and non-pilot firms in the China A-share stock market between 2008 and 2015, I employ a DiD research design to examine the effect of short selling and margin trading on the CSR performance

of firms. I find that the removal of short-selling constraints leads to a larger increase in CSR performance for pilot firms compared to non-pilot firms, while margin trading is insignificantly associated with CSR performance. The result indicates the signal and insurance effects of CSR performance. Managers improve CSR performance to build a positive corporate image and maintain the confidence of investors to shield against short-selling threats and prevent downward price pressure. The results are robust when I replace the dependent variable with the industry-adjusted CSR score and use a PSM approach with the DiD test to ensure that the result is not driven by potential endogeneity concerns. I also find the parallel trend assumption holds for the DiD test.

An alternative explanation could be simply that the pilot firms improve their CSR performance because of confronting more both external and internal risks. After controlling for actual short interest positions as a signal of these risks, the inferences continue to hold. Moreover, I explore the cross-sectional variations in the effect of short-selling threats on CSR performance and find that the positive effect of increasing short-elling pressure on CSR performance is more pronounced for firms with additional downward price pressure, bad news disclosures, high bankruptcy risk, and highly concentrated ownerships and for SOEs.

This study contributes to the literature in several ways. First, it provides evidence on the real effects of the secondary financial markets on corporate behaviors in an emerging market. Prior research shows that short-selling threats affect corporate behaviors, such as reducing earnings management and insider trading (Massa et al. 2015a; Massa et al. 2015b; Fang et al. 2016) and improving the quality of financial information to deter short-selling threats (Jin et al. 2018; Cheng et al. 2018). This study focuses on the effect of short selling and margin trading on non-financial performance and finds that lifting the short-selling ban leads to a larger increase in the CSR performance for pilot firms compared to non-pilot firms. The findings from this study advance the

understanding of the relationship between increasing short-selling pressure and the CSR performance of firms. Short sellers play a disciplinary role in emerging markets with a weak institutional environment, prompting firms to engage in CSR practices as insurance actions to mitigate the potential adverse effect on stock prices.

Next, the study contributes to the literature that examines the determinants and strategic roles of CSR. While most studies focus on the value consequences of CSR, this study extends the line of research of the determinants of CSR using a quasi-natural experiment that relaxes short-selling and margin-trading constraints. The results of this study show that well-informed and sophisticated investors can be the driving force behind CSR practices. Unlike other market participants who influence CSR directly, short sellers affect CSR indirectly by promoting managers to take CSR initiatives to shield firms against the market risk of short selling. In addition, this study adds new evidence on the signal and insurance role of CSR. Prior literature shows managers can send signals through various corporate activities, such as dividends, capital structure (Myers 1984), IPO underpricing, or advertising (Chemmanur and He 2011). This study shows that managers can use CSR to build relations with stakeholders to stay competitive and create a positive corporate image to deter short-selling threats.

Last, the findings from this study contribute to the policy debate on the benefits and costs of short selling. Previous research suggests that short sellers are good at identifying the overpriced shares of firms with opportunistic behaviors and that short sellers' trading accelerates the discovery of corporate misconduct (Karpoff and Lou 2010). This study finds that short selling can bring additional benefits to stakeholders by prompting firms to improve CSR performance.

This paper organized as follows. Section 3.2 describes the institutional background and reviews the prior research on CSR, short selling, and margin trading. Section 3.3 develops the hypotheses. Section 3.4 describes the sample selection and

research methodology. Section 3.5 reports the empirical results. Section 3.6 shows the results of the additional analysis. Finally, Section 3.7 presents the conclusion.

3.2 Institutional Background and Literature Review

3.2.1 Short selling and margin trading pilot program in China

Short selling and margin trading of stocks were prohibited in the Chinese stock market until recently. On March 31, 2010, the CSRC introduced the pilot program to lift the ban on short selling and margin trading in the SSE and SZSE. The program aimed to incorporate more information into stocks prices. Initially, 90 constituent stocks in the SSE 50 Index and SZSE Component Index were selected into the program by meeting the requirements of market value, liquidity, volatility, and so on. The CSRC pilot program has gradually revised and expanded the list of pilot firms from 2010 and allows qualified investors to buy eligible stocks on margin and/or to short-sell the stocks of those pilot firms. On September 22, 2014, the stocks in the program list comprised a total of 900 stocks, accounting for one-third of the total listed stocks in China. Appendix 3.1 shows the timeline of the CSRC pilot program. There were five major qualification list revisions between 2010 and 2014, with several minor revisions between the major revisions. Unlike capital markets in developed countries in which a one-time removal of the short-selling restriction takes effect, the CSRC gradually enlarged the number of "designated" pilot stocks several times.

It is worth noting that the supply of security lending is quite limited in China and short sellers in China face more obstacles in shorting stocks than those in the developed capital markets. From March 2010 to August 2012, qualified investors can borrow money or stock only from security companies. After August 27, 2012, qualified investors can borrow from other financial institutions, such as banks and insurance companies, under the refinancing policy introduced by the CSRC. The CSRC expects that the refinancing policy expands sources of securities to borrow and further relaxes short sale constraints.

These specific regulations in China increase the cost of short selling. Although short selling in China has some limitations, short sellers still can actively participate and build their positions in the market and exert a similar effect as their peers in the developed markets.

3.2.2 Short selling

Short sellers are the most informed and sophisticated outside investors, who contribute to market efficiency and facilitate the price discovery process (Hope et al. 2017; Karpoff and Lou 2010). Prior literature suggests that they are more knowledgeable than financial analysts (Christophe et al. 2010; Drake et al. 2011) and can front-run insider trading (Khan and Lu 2013). Although short selling contributes to market efficiency (Miller 1977; Diamond and Verrecchia 1987; Engelberg et al. 2012), short selling also places downward pressure on the stock price (Massa et al. 2015b). Recent studies show that after the removal of short-selling restrictions on pilot firms in the U.S., short-selling pressure on these firms' stock prices increases significantly, damaging the confidence of investors and other stakeholders and affecting other market participants' decisions (Grullon et al. 2015). For example, Khanna and Mathews (2012) argue that the initial stock-price decline due to short-selling affects the decisions made by existing creditors or other counterparties of the firms, which not only amplifies the price drop but also makes it more permanent.

Given that short selling can bring substantial costs to the affected firms, short selling threats can affect corporate decision makings. De Angelis et al. (2017) find that the exogenous removal of short-selling constraints causes firms to change the design of executive incentive contracts by granting more stock options to discipline managerial behaviors. Managers are sensitive to short-sellers and the threats that they have on stock prices (Grullon et al. 2015; Fang et al. 2016). They have incentives to undertake actions to discourage short sellers and to shield their firms and their jobs from the potential

downward pressure on stock prices. Khanna and Mathews (2012) find that blockholders buy a disproportionately large amount to prevent value destruction due to short selling threats. Recent studies have investigated the short selling pilot program (Reg SHO) in the U.S. that generates exogenous increases in short-selling pressure and found that managers respond to the external shock by decreasing earnings management (Fang et al. 2016), cutting overinvestment (Chang et al. 2015), reducing equity issues and investment (Grullon et al. 2015), and decreasing the precision of bad news forecasts (Li and Zhang 2015).

In other words, short sellers play the role of an external monitor to discipline managers. Karpoff and Lou (2010) find that the short sellers are proficient at identifying financial misrepresentation before it becomes public. Massa et al. (2015b) show that short selling disciplines manager behaviors to reduce earnings management. Using the CSRC pilot program in China as a quasi-experiment, several studies support that short selling has a disciplinary effect. The deregulation of short selling increases conditional accounting conservatism (Jin et al. 2018), reduces insider trading (Wang et al. 2018), improves price efficiency and stock liquidity, and reduces stock volatility (Chang et al. 2014; Li et al. 2017). Existing literature focuses on short-selling in the developed markets and its implication on financial performance, while the effect of short selling on non-financial performance in emerging markets remains unexplored.

3.2.3 Margin trading

Margin trading allows investors to build up a leveraged long position by borrowing capital (or stocks) from registered security companies or other sources. Prior research suggests that margin-traders are potentially informative speculators who trade to destabilize the market and produce excess volatility (Chang et al. 2014). However, the empirical evidence is mixed. Hardouvelis and Peristiani (1992) find that the margin requirements are negatively related to the changes in stock prices and market instability

in Japan. Hirose et al. (2009) show that individual investors dominate margin trading in Japan and their trades can positively predict future returns for small firms. Seguin (1990) examines the inception of margin trading for U.S. over-the-counter stocks and finds that margin trading increases stock price informativeness and reduce volatility and noise, leading to an increase in the market value. Hsieh and Miller (1990) find that the changes in margin requirements by the Federal Reserve have tended to follow rather than lead changes in market volatility. Limited literature examines the implication of margin trading in China and the findings are inconsistent. Chang et al. (2014) find improved price efficiency and lower return volatility for the pilot firms after the ban on margin trading is lifted by the CSRC pilot program. Chen et al. (2017) find that the discretionary accruals of pilot firms increase relative to the non-pilot firms, as the removal of the ban on margin trading provides managers with incentives for earnings management.

3.2.4 Corporate social responsibility

CSR is regarded as involving "actions that appear to further some social good, beyond the interests of the firm and that which is required by law" (McWilliams and Siegel 2001, p. 117). Prior studies suggest that CSR practices provide a form of insurance and help firms establish a positive corporate image of caring for society and refraining from corporate greed (McWilliams et al. 2006; Godfrey et al. 2009). The socially responsible image of a firm can constrain opportunistic behaviors, such as earnings management, tax avoidance, and insider trading (Kim et al. 2012; Gao et al. 2014; Hoi et al. 2013), because reputation can be an informal enforcement mechanism against opportunism as documented in the literature (Klein and Leffler 1981; Gao et al. 2014). For example, Kim et al. (2012) find that socially responsible firms are less likely to manage earnings. Hoi et al. (2013) provide evidence that socially responsible firms have a lower likelihood of engaging in tax-sheltering activities. Gao et al. (2014) find that

executives of firms with high CSR are less likely to engage in insider trading than executives of firms with low CSR.

This socially responsible image benefits firms by creating reputational capital and extending organizational networks (Fombrun and Shanley 1990), facilitating talent attraction and retention (Greening and Turban 2000), increasing the price premium of products (Eichholtz et al. 2010), improving consumer evaluations (Brown and Dacin 1997), and reducing the threat of regulation (Maxwell et al. 2000). The belief that CSR practices can help promote the public image of a firm is widespread among corporate managers. Adam Friedman Associates (2012) survey CSR executives at Fortune 1000 firms and identify reputation building as the primary motivation behind CSR initiatives. Similarly, Parsa et al. (2016) interviews executives and senior managers of the top 11 largest companies in China in 2016 and reports that all participating managers state that CSR is essential for their corporate image and reputation.

Moreover, recent studies suggest that the positive image created by engaging in CSR can help firms protect themselves against the risk of adverse political, regulatory, and social penalties in case of negative corporate events (Godfrey 2005; Godfrey et al. 2009; Hoi et al. 2013; Lins et al. 2017). Godfrey (2005) theorizes that a positive CSR reputation is particularly important when negative corporate events occur because it provides some degree of insurance protection by increasing the likelihood of positive attributions from society's arbiters. Flammer (2012) argue that CSR is a resource with insurance-like features and finds that firms with stronger environmental CSR performance experience a smaller stock-price decrease following the announcement of eco-harmful behaviors. Hong and Liskovich (2016) investigate the influence of firms' CSR on penalties issued by the U.S. Department of Justice and the Securities and Exchange Commission (SEC) for violation of the Foreign Corrupt Practices Act and find that socially responsible firms receive more lenient settlements from prosecutors. Finally,

Lins et al. (2017) document that firms with high CSR intensity had higher stock returns than firms with low CSR intensity during the 2008–2009 financial crisis. Their findings support that CSR activities create an enhanced insurance benefit during a crisis of trust.

While the above discussions focus on the image of firms caused by CSR, several studies view CSR as reflecting the managerial personal preferences for good citizenship or ethics, which indicates less managerial opportunistic behaviors (Lanis and Richardson 2012; Kim et al. 2012). Conversely, managers could engage in CSR activities at the expense of shareholders for self-interests (Moser and Martin 2012). That is investment in CSR practices could be a signal of agency problems in firms. Moser and Martin (2012) suggest that field managers might invest in CSR projects because this boosts their reputation in the community or among special interest groups whose admiration they value. Moreover, when a firm builds an image of being socially responsible, their executives, especially those who are vocal about social responsibility, are likely to receive the credit (Hemingway and Maclagan 2004). If managers obtain other private benefits from CSR practices, they will overinvest (Masulis and Reza 2015; Cheng et al. 2016).

3.3 Hypothesis Development

3.3.1 Effect of short selling on CSR performance

The removal of the short-selling ban inspired strong public reactions, indicating that the deregulation is important to investors, managers, and other stakeholders. Short sellers are the most informed and sophisticated investors in the capital market. Short selling facilitates the flow of unfavorable information into stock prices, increases stock price efficiency, and dampens price inflation (Fang et al. 2016; Miller 1977; Karpoff and Lou 2010). It could make uninformed investors and important stakeholders misinterpret such negative price pressure as worsening fundamentals, which exposes pilot firms to a high likelihood of bear raid risk. Prior research demonstrates that the stock price is related to manager compensation, job security, and personal gain through stock sales (Burns and

Kedia 2006; Beneish and Vargus 2002; DeFond and Park 1997), which implies that the benefit to managers decrease with the prospect of short selling.

I argue that managers act strategically to deter short sellers' attention and mitigate the effect of short selling threats by adopting CSR performance for several reasons. First, CSR practices can enhance the corporate image and send a positive signal to the market that firms refrain from opportunistic behaviors, leaving the lower likelihood of uncovering bad news or value-destroy events by short sellers (Servaes and Tamayo 2013; Lins et al. 2017; Hong and Liskovich 2016). Next, the potential downward price pressure from short sellers gives managers incentives to take insurance actions to prevent them from becoming the target of short sellers. Moreover, CSR practices provide a form of insurance, shielding firms against the risk of market, political, regulatory, and social sanctions when negative events occur (Godfrey 2005; Minor and Morgan 2011; Servaes and Tamayo 2013). According to Koh et al. (2014), if a firm is at high risk of experiencing negative events, it has a greater need for insurance protection and is more likely to benefit from CSR practices to the extent that CSR functions as an insurance mechanism. Fombrun et al. (2000) also suggest that CSR can develop goodwill and trust with investors and stakeholders that insures firms by mitigating negative reactions of shareholders to the announcement of negative events. The pilot program lifts the ban of short selling constraints, significantly increasing short selling pressures on pilot firms. To alleviate the increased short selling pressures, managers of the pilot firms have the incentives to improve firms' CSR performance.

On the other hand, it is possible that managers could cut CSR expenditures when facing increased short selling pressures. In addition, CSR is a long-term investment with uncertain returns to firm value (Fieseler 2011). In the short term, CSR cannot generate returns for firms but can increase corporate expenditure. The short selling threat may lead managers to cut CSR investment to improve the short-term financial performance and

stock price. Moreover, firms may engage in CSR due to managerial self-interests (Moser and Martin 2012; Masulis and Reza 2015). Short sellers have been considered an external governance mechanism to discipline management by curbing earnings management, corporate misconducts, and insider trading (Fang et al. 2016; Karpoff and Lou 2010). Managers may cut CSR investment motivated by self-interest when facing the threats of shorting shares in their firms. I propose and test the following hypothesis in an alternative form:

Hypothesis 1: The removal of the short selling ban is associated with the change in CSR performance of the pilot firms.

3.3.2 Effect of margin trading on CSR performance

In China, margin trading is often viewed as a non-binding constraint (Chang et al. 2014; Li et al. 2017). Investors can easily avoid the ban on margin trading by borrowing from various sources and creating leveraged positions. Margin trading has always existed in the market, and the formal introduction of margin trading by the CSRC pilot program will not give managers incentives to undertake actions to attract or discourage margin traders. Thus, lifting the ban on margin trading is not expected to affect the CSR performance of the pilot firms. I form the following hypothesis in the null form:

Hypothesis 2: The removal of the margin trading ban is not associated with a change in the CSR performance of the pilot firms.

3.4 Research Design

3.4.1 Sample

The information of the pilot list collected from the SSE and SZSE websites. Data on short selling and margin trading are obtained from the CSMAR database. The CSR score data are from RKS, which is a third independent CSR rating agency. It covers the firms that issue CSR reports in China. The RKS provides yearly CSR ratings based on

the last year information of the firm, with scores available from 2009.[18] Thus, the starting year of the sample is 2008. Firm-level financial information is also from the CSMAR database. Panel A in Table 3.1 illustrates the sample selection procedures. The initial sample consists of all A-share listed firms on the SSE and SZSE from 2008 to 2015. Because the exchanges expand or revise the list of stocks included in the CSRC pilot program throughout the year, I exclude the pilot firm observations in the first year when they were included in the pilot program to eliminate the announcement effect. I also exclude observations of 2010 for the pilot firms, as 2010 is the starting year of the CSRC pilot program. In addition, I exclude firms in the financial industry and firm-years without CSR scores or sufficient data to calculate control variables. The sample size is substantially reduced due to the unavailability of CSR scores. The final sample includes 2,275 pilot firms-year observations and 1,133 non-pilot firm-year observations. Panel B in Table 3.1 illustrates the yearly distribution of the fiscal sample. The number of firms with CSR scores increases over time. Panel C in Table 3.1 shows the distribution of the pilot firm observations before and during the CSRC pilot program. The number of observations peaks closer to the year when the pilot program starts and decreases in the year before and during the inclusion of the firms in the pilot list.

<Insert Table 3.1 about here>

3.4.2 Models and variables

Following Li and Zhang (2015) and Hope et al. (2017), I first examine the effects of short selling and margin trading on CSR performance by estimating the following DiD regression:

$$CSRscore_{it}=\beta_0+\beta_1 PILOT_i \times DURING_t+\beta_2 PILOT_i+\beta_k Controls_{it}+Industry\ FE +Year\ FE+\varepsilon_{it} \quad (3.1)$$

[18] In other words, the scores disclosed in 2009 represent the CSR performance of firms in 2008.

where the subscript *i* refers to firm *i*, and the subscript *t* refers to year *t*. The dependent variable, *CSRscore*, is CSR performance rating score provided by the RKS. Following Dhaliwal et al. (2011), I also replace *CSRscore* with *CSR_ADJ*, the adjusted CSR scores by industry and year median to make them comparable across industries as a robustness check. *PILOT* is a dummy variable that is equal to 1 for firms on the designated list in the CSRC pilot program and is 0 otherwise. *DURING* is a dummy variable equal to 1 if the fiscal year end falls after the date when the firm is included in the pilot program.[19] The variable of interest is the DiD estimator, β_1. A positive/negative and significant β_1 supports the hypotheses that the removal of the short selling and marginal trading ban by the CSRC pilot program causes a greater change in CSR performance for the pilot firms than for the control firms. I include industry and year fixed effects in Eq. (3.1) to control all time-invariant firm-level omitted variables, and cluster the robust standard errors at the firm level in all empirical analyses conducted in this study.

Following prior literature on CSR performance (Dhaliwal et al. 2011; Lu et al. 2016), I control for other firm-level characteristics factors including firm size (*SIZE*), leverage (*LEV*), property, plant and equipment (*PPE*), firm age (*AGE*), return on assets (*ROA*), sales growth (*GROWTH*), market-to-book ratio (*TOBINQ*), share liquidity over the fiscal year (*LIQUIDITY*), capital expenses (*CAPEX*), analyst following (*ANALYST*), big 4 auditors (*BIG4*), and whether the CEO is also in the chairman position (*DUAL*) that might be associated with CSR performance. All continuous variables are winsorized at 1st and 99th levels to mitigate the effect of outliers. The definitions of all variables are provided in Appendix 3.2.

The main concern with the DiD design is the risk of confounding effects that would cause the treatment group to change its behavior absent a change in short selling

[19] In the robust test, I also set *DURING* equals to1 for observations in control firms from 2010 to 2015 and equal to 0 otherwise.

and margin trading restrictions. The concern is exacerbated when the treatment occurs at only one point in time (e.g., Reg SHO pilot program in the U.S.) compared with staggered changes. The CSRC pilot program in China contains multiple exogenous changes during the sample period, which can help mitigate the risk of confounding effects (Li et al. 2017; Wang et al. 2018).

Next, following Chen et al. (2017), I apply the pool regression with fixed effects to test the separate effects of margin trading and short selling on CSR performance. The models are specified as follows:

$$CSRscore=\alpha_0+\alpha_1 MARGIN_{it}+\alpha_2 SHORT_{it}+\alpha_k Controls_{it}+Industry\ FE+Year\ FE +Firm\ FE+\epsilon_{it} \quad (3.2)$$

where *MARGIN* is the remaining balance of margin trading and *SHORT* is the remaining balance of short selling. *MARGIN (SHORT)* implies the potential borrowing (lending) amount of the underlying stock at the fiscal year-end. *Controls* are the same set of control variables specified in Eq. (3.1).

Furthermore, I attempt to address the potential endogeneity concern by adopting a change specification of Eq. (3.2) to infer the direction of causality for the relation between short selling, margin trading, and CSR performance respectively. The first change model is shown as follows:

$$\Delta CSRscore=\gamma_0+\gamma_1 \Delta MARGIN_{it}+\gamma_2 \Delta SHORT_{it}+\gamma_k Controls+Industry\ FE+Firm\ FE +Year\ FE+\sigma_{it} \quad (3.3)$$

where $\Delta CSRscore$ is the difference in *CSRscore* between the current and prior fiscal years, $\Delta SHORT$ is the net sells of securities lending and $\Delta MARGIN$ is the net purchase of margin trading. In addition, $\Delta MARGIN$ and $\Delta SHORT$ imply the realized change in the borrowing (lending) amount of the underlying stock within the year. Eq. (3.3) allows me to use each firm as its own control and is less susceptible to the endogeneity problem than the level model (Berger et al. 1997).

3.5 Results

3.5.1 Summary statistics

Table 3.2 summarizes the variables used in the main test. Panel A provides statistics for all variables used in the empirical tests, and these are generally consistent with those reported in prior research (Chen et al. 2018; McGuinness et al. 2017). CSR performance ranges from 13.330 to 87.950, with an average of 37.567 and a standard deviation of 12.271, indicating a considerable variation in CSR performance. Panel B compares the differences in the means between pilot firms with non-pilot firms in the sample. The pilot firms have a significantly higher CSR performance than non-pilot firms. Panel C shows the Pearson correlation matrix and Spearman rank correlation. The upper-triangular cells are Spearman rank correlation. The lower-triangular cells are Pearson correlation matrix. The correlation between *DURING* and *CSRscore* is significantly positive, indicating the initial support of the motivation for the valuation creation of CSR. Moreover, the correlation coefficients between the control variables are low, and the multicollinearity is not significant and is unlikely to affect the final results.

<Insert Table 3.2 about here>

3.5.2 Main results

3.5.2.1 Univariate difference-in-differences test

As a preliminary analysis, Table 3.3 reports the results of the univariate DiD tests examining the effects of the CSRC pilot program on CSR performance. I capture the change in CSR performance from the pre-program period to the during-program period separately for both pilot and non-pilot firms. I then take a second difference between the two groups to obtain the DiD estimates.

Panel A in Table 3.3 reports the cross-sectional comparison for the sample. As for pilot firms, I define the period before the pilot firms are added into the pilot list as *PRE*, and the period after entering the pilot list as *DURING*. As for non-pilot firms, I define the

two years before the pilot program (2008 and 2009) as *PRE*, and the years after the pilot program (2011 to 2015) as *DURING*. The mean CSR performance for the period before the pilot program is 34.252 for pilot firms and 28.341 for non-pilot firms. The *t*-statistic for the difference (the cross-sectional estimator 5.911) in means is -7.202, and the Wilcoxon *z*-statistic for the difference in medians is -7.885, both significant at the 1% level. The result indicates that CSR performance for pilot firms is better than non-pilot firms before the implementation of the pilot program. During the period of the pilot program, the mean CSR performance increase to 43.997 for pilot firms and to 35.876 for non-pilot firms. The mean difference is 8.121 (*t*-statistic = 15.760) and the median difference is 6.981 (Wilcoxon *z*-statistic = -14.854), both significant at the 1% level.

<Insert Table 3.3 about here>

The first two columns in Panel B of Table 3.3 show the time-series estimators, which track the change in CSR performance within each group of firms across the years before the pilot program and the years during the pilot program. The second column shows that the average CSR performance for pilot firms drops by 9.745 (significant at 1% level) from before the pilot period to during the pilot period. The CSR performance for non-pilot firms also increases significantly by 7.535 (significant at the 1% level). The potential time trend in the Chinese experiment would be well controlled in the DiD analysis. The last column of Panel B in Table 3.3 reports on the univariate DiD estimators. The mean DiD estimator for CSR performance from before to during the pilot program is 2.210 with a t-statistic of 2.234. The difference is statistically significant at the 5% level. The univariate DiD results indicate that compared with control firms, pilot firms experience a significant increase in CSR performance due to the exogenous shocks of the deregulation of margin trading and short selling. Overall, these findings provide the initial evidence that the removal of short selling and margin trading can affect CSR performance.

3.5.2.2 Multivariate difference-in-differences tests

Table 3.4 reports the estimation results of Eq (3.1) using observations from both pilot firms and non-pilot firms for the window period between 2008 and 2015. Column (1) and Column (4) of Table 3.4 show the results without controlling any firm characteristics. Columns (2)–(3) and Columns (5)–(6) of Table 3.4 report the results with control variables. The coefficient on *PILOT*×*DURING*, β_1, is positive and significant at the 1% level (using two-sided tests) for all six regressions, suggesting that the pilot firms experience an improvement in CSR performance relative to non-pilot firms after the removal of the short selling and margin trading bans. The magnitude of β_1 is consistent with the univariate DiD results reported in Table 3.3. In terms of economic significance, Column (2) shows that the removal of short selling and margin trading constraints economically improve CSR performance by 3.07% under short selling pressure.[20]

<Insert Table 3.4 about here>

The coefficients on *PILOT* in Column (2) Column (5) of Table 3.4 capture the time-invariant difference between the pilot firms and non-pilot firms, which is insignificant, indicating no significant time-invariant difference between pilot firms and non-pilot firms. Most control variables that are statistically significant have the same signs as in prior studies. Firm size, return on assets, property, plant and equipment investment, analyst following and big 4 auditors are positively related to CSR performance, while sales growth and firm age are negatively associated with CSR performance.

To mitigate the concerns of potentially omitting related variables, I perform an alternative DiD estimation including firm, year and industry fixed effects and excluding *PILOT* because there is no inter-firm variation of pilot firms. The result in Column (3)

[20] Note that 3.07% = 1.201/39.101, where 1.201 is the coefficient β_1 on the interaction iterm *PILOT*×*DURING* in Panel A of Table 3.4, and 39.101 is the mean *CSRscore* for the pilot firms in Panel A of Table 3.2.

and Column (6) in Table 3.4 shows that β_1 remains significantly positive. Furthermore, Panel B shows the results using the industrial adjusted CSR score to measure CSR performance. The inference is still unchanged, suggesting that the results are not driven by industrial characteristics or other omitted firm-level correlated variables. Overall, the results in Table 3.4 suggest that the removal of short selling and margin trading restrictions by the CSRC pilot program positively affects CSR performance for the pilot firms.

3.5.3 The separate impact of short selling and margin trading on CSR performance

In this section, I investigate the separate effects of short selling and margin trading on firms' CSR performance. Given that short selling and margin trading are allowed simultaneously for stocks in the CSRC pilot program, the main results are jointly affected by both market mechanisms. I employ Eq. (3.2) and Eq. (3.3) to disentangle the effect of short selling from that of margin trading on CSR performance.

Table 3.5 represents the results of the effects of short selling and margin trading on CSR performance, respectively. Columns (1)–(3) report the results of Eq. (3.2). Columns (4)–(6) show the results of Eq. (3.3). The coefficients of *SHORT* and Δ*SHORT* are significantly positive in Columns (1), (3), (4), and (6), while the coefficients of *MARGIN* and Δ*MARGIN* are insignificant in Columns (2), (3), (5), and (6). The coefficients on short selling are not only statistically but also economically significant. These results indicate that short selling pressure positively affects the CSR performance of firms. Margin trading, however, does not affect the CSR performance, which supports Hypothesis 2. In China, margin trading is viewed as a non-binding constraint (Chang et al. 2014; Li et al. 2017). Investors can borrow from other resources for trading when margin trading is constrained. Thus, the formal introduction of margin trading in China does not result in any significant change in CSR performance as expected. On the other

hand, the external disciplinary role played by potential short sellers has a positive effect on incentives for managers to pursue CSR activities.

<Insert Table 3.5 about here>

To summarize, the results in Table 3.4 imply that, the pilot firms improve CSR performance to enhance the positive firm image and create firm value against short selling threats. Because the effects of short selling on CSR performance are significantly positive, but margin trading does not affect CSR performance, the overall effects of lifting the short selling and margin trading bans by the CSRC pilot program in Table 3.4 is primarily driven by short selling.

3.5.4 Robust checks

3.5.4.1 Parallel trend test

I perform several robustness checks. First, I perform a test to examine the validity of the parallel trend assumption underlying the DiD estimation. Following Chen et al. (2018b), I track the effects of the pilot program on CSR performance before and after it took effects. I re-examine Eq. (3.1) by adding 10 indicator variables: *BEFORE5*, *BEFORE4*, *BEFORE3*, *BEFORE2* and *BEFORE1* for the period before being added to the pilot list, and *AFTER1*, *AFTER2*, *AFTER3*, *AFTER4*, and *AFTER5*, for the period after being added into the pilot list. The variables *BEFORE1*, *BEFORE2*, *BEFORE3*, *BEFORE4* and *BEFORE5* represent one year, two years, three years, four years, and five years before the firm is added to the pilot list. In addition, *AFTER1*, *AFTER2*, *AFTER3*, *AFTER4*, and *AFTER5* are dummy variables that represent one year, two years, three years, four years, and five years after the firm is added to the pilot list. Then I also replace the *PILOT×DURING* dummy with 10 interaction items, *PILOT×BEFORE5*, *PILOT×BEFORE4*, *PILOT×BEFORE3*, *PILOT×BEFORE2*, *PILOT×BEFORE1*,

PILOT×AFTER1, *PILOT×AFTER2*, *PILOT×AFTER3*, *PILOT×AFTER4*, and *PILOT×AFTER5*.[21]

Panel A in Table 3.6 shows that coefficients on the interactions *PILOT×BEFORE5*, *PILOT×BEFORE4*, *PILOT×BEFORE3*, *PILOT×BEFORE2* and *PILOT×BEFORE1* are insignificant, while the coefficients on *PILOT×AFTER1*, *PILOT×AFTER2*, *PILOT×AFTER3*, *PILOT×AFTER4* and *PILOT×AFTER5* are significantly positive. The results are satisfied with the parallel trend assumption of the DiD model and the effects of the pilot program on CSR performance occur after becoming a pilot firm.

<Insert Table 3.6 about here>

3.5.4.2 Constructing control firms using propensity score matching

Second, I use a PSM method to construct a balanced sample. The PSM method can mitigate the inherent endogeneity issue, as the pilot firms are among the main exchange index, and are usually the firms with larger size, higher liquidity, lower volatility, and better CSR performance compared to non-pilot firms. Following Li et al. (2017), I first conduct a logistic regression analysis using the sample before the introduction of short selling and margin trading (the year before 2010) with the dependent variable *PILOT*, which is equal to 1 if a firm belongs to a treatment group and is 0 otherwise. The independent variables include several predictors, including firm size (*SIZE*), return on assets (*ROA*), percentage of shares owned by the government (*GOV*), shares turnover (*TURNOVER*), book-to-market ratio (*BM*) and stock exchange (*STOCKMARKET*). These predictors are predominantly used by CSRC to evaluate the eligibility of a stock to participate in the short selling and margin trading pilot program. In addition, I include industry fixed effects and year fixed effects. Panel A of Appendix

[21] As the panel period ranges from six years before being a pilot firm to five years after becoming a pilot firm, I also include the interaction *PILOT×BEFORE6*, which is omitted automatically in regression.

3.3 shows the result of the logistic model. Then, I predict the probabilities of participating in the program or the propensity score for all firms and match each treatment firm to a benchmark firm using the nearest neighbor matching technique with replacement and setting the caliper to 0.25×the standard error of the propensity score (Dehejia and Wahba 2002). Panel B of Appendix 3.3 reports the effectiveness of the matching procedure. These results suggest that the PSM procedure reduces differences between the treatment and control firms before the pilot program.

Panel B of Table 3.6 reports the results using the PSM sample. The coefficient on *PILOT*×*DURING* is significantly positive at the 10% level in both Columns (1) and (2). These results are consistent with the results using the full sample, suggesting that, relative to non-pilot firms, pilot firms enhance their CSR performance after the removal of short selling and margin trading constraints.

3.5.4.3 Placebo tests

I perform three sets of placebo tests to ensure the validity of the analysis. First, I include the firm-year observations for the year when firms are added to the pilot list. I set the year when firms enter the pilot program as before the pilot program period and during the pilot program period because several major revisions of the pilot list of the firms took place midway through the year, as shown in Appendix 3.1. Columns (1)–(4) of Panel C in Table 3.6 show the regression results when setting that year as before the period or during the period. The coefficient on *PILOT*×*DURING* remains significantly positive.

In the second test, following prior studies (Chen et al. 2017; Jin et al. 2018; Li et al. 2017), I assign 2010 as the deregulation year of the non-pilot firms, classifying the firm-year observations of the non-pilot firms as during the pilot program period from 2010 to 2015. Column (5) of Panel C in Table 3.6 shows that the result remains unchanged.

Moreover, I evaluate the extent to which the pilot program in China is exogenous using the post reversal test. The removal of the short selling and margin trading bans in

China changes the list of firms eligible for short selling and margin trading over time, which help to mitigate the issue from other omitted effects over the time trend. Some of the pilot firms were removed from the pilot list and reinserted in the list afterwards. I create a dummy variable (*POST*) to indicate the period for the pilot firms subsequent to exclusion from the pilot list. The post-period sample is composed of 40 observations. I report the results in Table 3.7. In Columns (1) and (2), I exclude the observations that have removal experiences. Then, I include the post-period in Columns (3) and (4). In Columns (5) and (6), I exclude the years during the pilot program and directly compare the difference in CSR performance between the period prior to the pilot program and the period following the end of the program. The results clearly show that the removal of short-selling constraints improves the CSR performance of firms and, more importantly, that this effect disappears after pilot firms are removed from the pilot list.

<Insert Table 3.7 about here>

This test ensures that the findings primarily represent the signal effect of CSR for the concerns regarding of short selling threats. The removal of short selling and margin trading bans in China per se changes the list of firms eligible for short-selling over the time trend.

3.6 Additional Analysis

3.6.1 Short interest as a signal of risk

Prior literature indicates that short sellers are a source of information about firm risk and are able to predict a variety of negative corporate events (Cassell et al. 2011). Around the announcement of the pilot program, short interest increases, which is a measure of the long-term short-selling positions (Grullon et al. 2015). If the private information about the stock is likely to be negative, abnormally high levels of short interest predict significantly higher profitability for short sellers and indicate higher risk for the pilot firms (Purnanandam and Seyhun 2018). The disclosure of short interest

provides investors with information about the financial health, viability, and future securities prices of firms. I examine whether the short sellers are a source of risk per se and whether they will affect CSR practices. I report the result in Table 3.8, including *SHORTINTEREST* in Eq. (3.1). Moreover, *SHORTINTEREST* is measured by the ratio of shares in a short position to the total shares outstanding in the fiscal year multiplied by 1,000. The coefficient on *SHORTINTEREST* is insignificant in the table. More importantly, the coefficient estimate for the test variable remains significantly positive after controlling for *SHORTINTEREST*. Therefore, I conclude that the result is not driven by short interest.

<Insert Table 3.8 about here>

3.6.2 Effect of downward price pressure on CSR performance

Short selling may exert downward pressure on prices, further destabilizing the fundamental value of a firm. As informed investors in the market, short sellers have a strong incentives to exploit bad news about firms as a mean to reap profits, especially given the speculative nature of the Chinese stock market (Mei et al. 2009). Chang et al. (2014) find that stocks experience negative returns when they are added to the pilot list of the short selling and margin trading program.

The downward price pressure of short selling may increase the negative effect of failing to meet market expectations. Therefore, any additional downward price pressure arising from short selling may incentivize managers to send a positive signal through CSR activities. When the firm becomes a real target firm for short selling, they could have more incentive to prevent short selling activities (Jin et al. 2018). I expect that managers improve CSR performance when their firms become a real target of short sellers in response to increased downward stock price pressure.

To measure downward price pressure (*SHORTPRESS*), I calculate the abnormal short sales following Jin et al. (2018), which are the short sales of a firm at a certain fiscal

year minus the median level of annual short sales of all eligible firms, multiplied by 1,000. I re-examine Eq. (3.1) by adding *SHORTPRESS*×*PILOT*×*DURING* and *SHORTPRESS*×*PILOT*. The results are reported in Table 3.9. In Column (1), the coefficient on *SHORTPRESS*×*PILOT*×*DURING* is positive and significant at the 5% level. When I replace the dependent variable with the industry adjusted CSR score, *CSRscore_ADJ*, the coefficient on *SHORTPRESS*×*PILOT*×*DURING* is positive and significant at the 1% level. The results support the view that managers improve the CSR performance of firms in response to the increasing downward price pressure when their firms become a target of short sellers.

<Insert Table 3.9 about here>

3.6.3 Effect of earnings news

The pilot program of short selling represents an exogenous reduction in short-selling constraints, leading to an increase in short selling activities for the pilot firms (Diether et al. 2009). The increased trading activities of pessimistic investors make the prices of the pilot stocks more sensitive to negative news (Grullon et al. 2015). Prior literature finds that the sensitivity of market prices to forecast news has an effect on the strategic disclosure choices of managers who aim to reduce the prediction of bad news to maintain the current stock-price level (Li and Zhang 2015). I predict that the effect of the removal of the short selling constraints on CSR performance is more pronounced for pilot firms with bad earnings news because short sellers can detect and release bad news to induce a downward stock price.

I examine the effect of short selling on CSR performance separately for firms with negative earnings news and positive earnings news. Following Li and Zhang (2015), I classify an annual report as containing bad (or good) news if the firm's annual ROA is lower (or higher) than the industry median *ROA*. Table 3.10 presents the results. Consistent with the prediction, Column (1) shows that the coefficient on

PILOT×*DURING* is insignificant for the sample of firms with good earnings news, while Column (2) shows that the coefficient of *PILOT*×*DURING* is positive and significant for the sample of firms with bad earnings news. The magnitude of the coefficient indicates that pilot firms with lower earnings increase their CSR performance by 5.458% around the implementation of the margin trading and short selling pilot program.[22] The magnitude is also economically significant. I also compare the difference of coefficient on *PILOT*×*DURING* between the two groups by applying a Chow test and the result shows that the effect of the removal of the short selling ban on CSR performance is larger for pilot firms with bad news disclosures than for firms with good news disclosures (*Chi2* = 4.900 and *P-value* = 0.027).

<Insert Table 3.10 about here>

3.6.4 Effect of bankruptcy risk

Although short selling constraints have been removed, the searching costs to discover target stocks and loan fees are still high. Short sellers tend to target certain firms to lower shorting costs for profit maximization. Prior research has documented that short sellers are more likely to target firms experiencing high bankruptcy risk, as these firms have financial distress and face high litigation risk (Hope et al. 2017; Chen et al. 2018a). Therefore, short selling threats following the removal of the constraints are greater for firms with high bankruptcy risk than other firms. These firms with high bankruptcy risk will be more likely to improve their CSR performance to shield against the potential short selling threats. Overall, I predict that the effect of short selling on CSR performance is more salient for firms with high bankruptcy risk.

I examine whether the effect of short selling threats on CSR performance only exists in the high bankruptcy risk subsample. Following Guan et al. (2016), I use

[22] Note that 5.458 % = 2.134/39.101. where 2.134 is the coefficient on *PILOT*×*DURING* in Column (2) of Table 3.10, and 39.101 is the mean *CSRscore* for the pilot firms in Panel A of Table 3.2.

$Z_{China}Score$, the Altman *Z-Score* for Chinese firms, which was defined by Zhang et al. (2010), to measure bankruptcy risk. A lower $Z_{China}Score$ indicates firms with more severe financial distress. Specifically, I classify firm-year observations with $Z_{China}Score$ that are lower than 0.9 as the high bankruptcy risk subsample and the other observations as the low bankruptcy risk subsample.[23]

Table 3.11 presents the results. Columns (1) and (2) show the results for high bankruptcy risk subsample and low bankruptcy risk subsample, respectively. The coefficient on *PILOT*×*DURING* is positive and significant at the 5% level for the high bankruptcy subsample, but positive and insignificant for the low bankruptcy subsample. The result of Chow test is significant (*Chi2* =3.555 and *P-value* = 0.0670), indicating that compared with firms with low bankruptcy risk, firms with high bankruptcy risk improve their CSR performance more to protect themselves from short selling threats.

<Insert Table 3.11 about here>

3.6.5 Effect of firm ownership: SOE vs. non-SOE

A unique feature of Chinese listed firms is that they are generally classified into SOEs and non-SOEs based on their ownership structure (Jin et al. 2018). The ownership structure could influence the relation between the margin trading and short selling pilot program and CSR performance. Prior literature finds that the ownership dispersion is positively associated with CSR performance for Chinese firms, while concentrated ownership is positively related to CSR for SOEs (Li and Zhang 2010). Marquis and Qian (2014) argue that non-SOEs have more motivations than SOEs to disclose their CSR information for political considerations. This difference in exerting efforts in CSR can be

[23] Following Zhang et al. (2010), I compute the $Z_{China}Score$ using the following formula: $0.517-0.460X_6+9.320X_7+0.388X_8+1.158X_9$, where X_6 is the total liabilities/total assets, X_7 is the net profit/average total assets, X_8 is the working capital/total assets, and X_9 is the retained earnings/total assets. Zhang et al. (2010) recommended cut-offs of 0.5 and 0.9 to identify financially distressed firms and financially healthy firms. Firms with a $Z_{China}Score$ between 0.5 and 0.9 are classified as potentially distressed companies requiring a close watch, suggesting that these firms are likely to attract the attention of short sellers and become the shorting target. Therefore, I classify them as the high bankruptcy risk subsample.

attributed to the different business objectives of SOEs and non-SOEs. In particular, SOEs have more social and environmental goals and strong political connections with the government. Therefore, SOEs do not care much about shareholder value and are less sensitive to bad news or economic losses (Chen et al. 2010). The introduction of short selling serves as a monitoring tool to detect financial misconduct (Karpoff and Lou 2010), earnings management (Fang et al. 2016), and insider trading (Massa et al. 2015a), especially for SOEs. Jin et al. (2018) and Chen et al. (2018a) find that the disciplinary effect is more pronounced for firms with higher ownership concentration in China such as SOEs. Hence, I expect that the positive effect of short selling pressure on CSR performance improvement is more salient for SOEs than non-SOEs. This is because SOEs generally exhibit poorer performance and they are more likely to manage earnings through tunneling activities (Jin et al. 2018). Moreover, SOEs might rely more on the insurance role of CSR to reduce the short selling risk.

To investigate the effects of firm ownership on changes in CSR performance, I first divide the full sample into the sub-samples of SOEs and non-SOEs. A firm is classified as a SOE if its ultimate controlling shareholder is the state government; otherwise, it is classified as a non-SOE. The information on state ownership is obtained from the CSMAR database. Next, I estimate Eq. (3.1) using the subsample of SOEs and non-SOEs and report the results in Table 3.12. The coefficient on *PILOT*×*DURING* in Column (1) is positive and significant, while it is insignificant and positive in Column (2). The Chow test result is also significant at 10% level (*Chi2* = 3.500 and *P-value* = 0.080). The results suggest that the positive effect of short selling pressure on CSR performance is more pronounced for SOEs than for non-SOEs. The economic magnitude

of the improvement of CSR performance for SOEs is pronounced with an increase in the CSR score by 3.946% for pilot SOEs.[24]

<Insert Table 3.12 about here>

3.6.6 Effect of ownership concentration

Well-dispersed ownership is relatively rare outside of the U.S., and the presence of large shareholders with substantial blocks of shares is more common for European and Asian companies (La Porta et al. 2002). The major agency problem is the conflict of interest between controlling and minority shareholders. Specifically, the controlling shareholders expropriate the minority investors, referred to as "tunneling" (Djankov et al. 2008; Jiang et al. 2010). Chen et al. (2018a) find that short sellers can play a disciplinary role in monitoring the tunneling behavior among controlling shareholders, as short selling targets and attacks the misconduct of firms to lower the value of controlling ownership of shareholders. Therefore, controlling shareholders confront higher risks if they hold high ownership stakes of their firms. They might preserve the corporate image to send signals that they are socially responsible and less likely to tunnel. I predict that the effect of lifting the short selling ban on CSR performance is more pronounced for firms with a high ownership concentrations.

I separately examine the effect of short selling threats on CSR performance for the high ownership concentration group and the low ownership concentration group. I divide the sample based on the ownership of the top ten controlling shareholders. Specifically, if the ownership of the top ten controlling shareholders is higher than the median ownership of the top ten controlling shareholders of the industry at the fiscal year, I classify the firm-year observation as having a high ownership concentration and otherwise as having a low ownership concentration. Table 3.13 reports the results.

[24] Note that 3.946 % = 1.543/39.101. where 1.543 is the coefficient on the interaction item *GOODNEWS* × *SHORT* in Column (1) of Table 3.12, 39.101 is the mean *CSRscore* for the pilot firms in Panel A of Table 3.2.

Column (1) shows that the coefficient on *PILOT*×*DURING* is significantly positive at the 10% level, while the coefficient on *DURING* is positive but insignificant in Column (2). By applying Chow test, I find that firms with high concentrated ownership improve their CSR performance more significantly after the introduction of short selling than firms with low concentrated ownership (*Chi2* = 9.256 and *P-value* = 0.002).

<Insert Table 3.13 about here>

3.7 Conclusion

In this study, I examine the effect of the introduction of the short selling and margin trading pilot program in China on the CSR performance of firms. Using a pilot program as a source of exogenous shock to the removal of the constraints of margin trading and short selling, I find that the pilot firms improve CSR performance more substantially than the non-pilot firms upon introduction of the pilot program. Specifically, managers of the pilot firms significantly increase firms' CSR performance when facing increasing short selling pressure, while margin trading does not affect CSR performance. Pilot firms only improve CSR performance during the pilot period. Moreover, the positive effect of the pilot program on the performance of Chinese firms is more pronounced when firms confront higher downward prices pressures, worse earnings news, or higher bankruptcy risk. Furthermore, the disciplinary effect of short selling on CSR performance is more pronounced for firms with a high ownership concentration and on SOEs. Overall, these results are consistent with the prediction that as a response to short selling pressure, managers strategically adjust their CSR behaviors to create a positive corporate image. Therefore, firms can reduce the risk of becoming a target and deter the declining price risk when becoming a real target of short selling.

This study has policy implications for other emerging markets. Short selling is generally not allowed by the regulators in some emerging markets, as such selling is considered risky, and it can increase market volatility while undermining market

confidence. The findings suggest a positive effect of short selling on corporate engagement in CSR; and thus, these findings can have important policy implications for other countries that are planning to lift their short-selling constraints.

Reference

Adam Friedman Associates. 2012. Corporate social responsibility: Who's responsible? Summary Available at: http://www.prweb.com/releases/ prweb2012/11/prweb10144917.htm.

Beneish, M. D., and M. E. Vargus. 2002. Insider Trading, Earnings Quality, and Accrual Mispricing. *The Accounting Review* 77 (4):755-791.

Berger, P. G., E. L. I. Ofek, and D. L. Yermack. 1997. Managerial Entrenchment and Capital Structure Decisions. *The Journal of Finance* 52 (4):1411-1438.

Bhojraj, S., R. J. Bloomfield, and W. B. Tayler. 2009. Margin Trading, Overpricing, and Synchronization Risk. *Review of Financial Studies* 22 (5):2059-2085.

Brown, T. J., and P. A. Dacin. 1997. The Company and the Product: Corporate Associations and Consumer Product Responses. *Journal of Marketing* 61 (1):68-84.

Burns, N., and S. Kedia. 2006. The impact of performance-based compensation on misreporting. *Journal of Financial Economics* 79 (1):35-67.

Cassell, C. A., M. S. Drake, and S. J. Rasmussen. 2011. Short Interest as a Signal of Audit Risk*. *Contemporary Accounting Research* 28 (4):1278-1297.

Chang, E. C., T.-C. Lin, and X. Ma. 2015. Does short selling discipline overinvestment? *SSRN*:https://hub.hku.hk/bitstream/10722/215627/215621/Content.pdf?accept=215621.

Chang, E. C., Y. Luo, and J. Ren. 2014. Short-selling, margin-trading, and price efficiency: Evidence from the Chinese market. *Journal of Banking & Finance* 48:411-424.

Chemmanur, T. J., and J. He. 2011. IPO waves, product market competition, and the going public decision: Theory and evidence. *Journal of Financial Economics* 101 (2):382-412.

Chen, H., J. Z. Chen, G. J. Lobo, and Y. Wang. 2010. Association Between Borrower and Lender State Ownership and Accounting Conservatism. *Journal of Accounting Research* 48 (5):973-1014.

Chen, S., B. Lin, R. Lu, and H. Ma. 2018a. The disciplinary effects of short sales on controlling shareholders. *Journal of Empirical Finance* 46:56-76.

Chen, Y.-C., M. Hung, and Y. Wang. 2018b. The effect of mandatory CSR disclosure on firm profitability and social externalities: Evidence from China. *Journal of Accounting and Economics* 65 (1):169-190.

Chen, Z., G. N. Dong, M. Gu, and I. Hasan. 2017. The Causal Effects of Margin Trading and Short Selling on Earnings Management: A Natural Experiment from China. *SSRN*:https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2795640.

Cheng, C. S. A., H. Shyu, and C. Wang. 2018. Accounting Comparability, Short Selling, and Price Efficiency. *SSRN*:https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbnxqYWFmY29uZmVyZW25jZTIwMTh28Z23g26NmUwMzJlYjdjYTAyNTliYQ.

Cheng, I.-H., H. Hong, and K. Shue. 2016. Do Managers Do Good With Other People's Money? *SSRN*:https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1962120.

Chow, G. C. 1960. Tests of Equality Between Sets of Coefficients in Two Linear Regressions. *Econometrica* 28 (3).

Christophe, S. E., M. G. Ferri, and J. Hsieh. 2010. Informed trading before analyst downgrades: Evidence from short sellers. *Journal of Financial Economics* 95 (1):85-106.

De Angelis, D., G. Grullon, and S. Michenaud. 2017. The Effects of Short-Selling Threats on Incentive Contracts: Evidence from an Experiment. *The Review of Financial Studies* 30 (5):1627-1659.

DeFond, M. L., and C. W. Park. 1997. Smoothing income in anticipation of future earnings. *Journal of Accounting and Economics* 23 (2):115-139.

Dehejia, R., and S. Wahba. 2002. Propensity Score-Matching Methods For Nonexperimental Causal Studies. *The Review of Economics and Statistics* 84 (1):151-161.

Dhaliwal, D. S., O. Z. Li, A. Tsang, and Y. G. Yang. 2011. Voluntary Nonfinancial Disclosure and the Cost of Equity Capital: The Initiation of Corporate Social Responsibility Reporting. *The Accounting Review* 86 (1):59-100.

Diamond, D. W., and R. E. Verrecchia. 1987. Constraints on short-selling and asset price adjustment to private information. *Journal of Financial Economics* 18 (2):277-311.

Diether, K. B., K.-H. Lee, and I. M. Werner. 2009. Short-Sale Strategies and Return Predictability. *The Review of Financial Studies* 22 (2):575-607.

Djankov, S., R. La Porta, F. Lopez-de-Silanes, and A. Shleifer. 2008. The law and economics of self-dealing. *Journal of Financial Economics* 88 (3):430-465.

Drake, M. S., L. Rees, and E. P. Swanson. 2011. Should Investors Follow the Prophets or the Bears? Evidence on the Use of Public Information by Analysts and Short Sellers. *The Accounting Review* 86 (1):101-130.

Eichholtz, P., N. Kok, and J. M. Quigley. 2010. Doing Well by Doing Good? Green Office Buildings. *American Economic Review* 100 (5):2492-2509.

Engelberg, J. E., A. V. Reed, and M. C. Ringgenberg. 2012. How are shorts informed? *Journal of Financial Economics* 105 (2):260-278.

Fang, V. W., A. H. Huang, and J. M. Karpoff. 2016. Short Selling and Earnings Management: A Controlled Experiment. *The Journal of Finance* 71 (3):1251-1294.

Fang, V. W., A. H. Huang, and W. Wang. 2017. Imperfect Accounting and Reporting Bias. *Journal of Accounting Research* 55 (4):919-962.

Fieseler, C. 2011. On the corporate social responsibility perceptions of equity analysts. *Business Ethics: A European Review* 20 (2):131-147.

Flammer, C. 2012. Corporate Social Responsibility and Shareholder Reaction: The Environmental Awareness of Investors. *Academy of Management Journal* 56 (3):758-781.

Fombrun, C., and M. Shanley. 1990. What's in a Name? Reputation Building and Corporate Strategy. *Academy of Management Journal* 33 (2):233-258.

Fombrun, C. J., N. A. Gardberg, and M. L. Barnett. 2000. Opportunity Platforms and Safety Nets: Corporate Citizenship and Reputational Risk. *Business and Society Review* 105 (1):85-106.

Gao, F., L. L. Lisic, and I. X. Zhang. 2014. Commitment to social good and insider trading. *Journal of Accounting and Economics* 57 (2-3):149-175.

Godfrey, P. C. 2005. The Relationship between Corporate Philanthropy and Shareholder Wealth: A Risk Management Perspective. *Academy of Management Review* 30 (4):777-798.

Godfrey, P. C., C. B. Merrill, and J. M. Hansen. 2009. The relationship between corporate social responsibility and shareholder value: an empirical test of the risk management hypothesis. *Strategic Management Journal* 30 (4):425-445.

Greening, D. W., and D. B. Turban. 2000. Corporate Social Performance As a Competitive Advantage in Attracting a Quality Workforce. *Business & Society* 39 (3):254-280.

Grullon, G., S. Michenaud, and J. P. Weston. 2015. The Real Effects of Short-Selling Constraints. *The Review of Financial Studies* 28 (6):1737-1767.

Guan, Y., L. Su, D. Wu, and Z. Yang. 2016. Do school ties between auditors and client executives influence audit outcomes? *Journal of Accounting and Economics* 61 (2):506-525.

Hardouvelis, G. A., and S. Peristiani. 1992. Margin Requirements, Speculative Trading, and Stock Price Fluctuations: The Case of Japan. *The Quarterly Journal of Economics* 107 (4):1333-1370.

Hemingway, C. A., and P. W. Maclagan. 2004. Managers' Personal Values as Drivers of Corporate Social Responsibility. *Journal of Business Ethics* (50):33-44.

Hirose, T., H. K. Kato, and M. Bremer. 2009. Can margin traders predict future stock returns in Japan? *Pacific-Basin Finance Journal* 17 (1):41-57.

Hoi, C. K., Q. Wu, and H. Zhang. 2013. Is Corporate Social Responsibility (CSR) Associated with Tax Avoidance? Evidence from Irresponsible CSR Activities. *The Accounting Review* 88 (6):2025-2059.

Hong, H., and I. Liskovich. 2016. Crime, Punishment and the Value of Corporate Social Responsibility. *SSRN*:https://ssrn.com/abstract=2492202.

Hope, O.-K., D. Hu, and W. Zhao. 2017. Third-party consequences of short-selling threats: The case of auditor behavior. *Journal of Accounting and Economics* 63 (2-3):479-498.

Hsieh, D. A., and M. H. Miller. 1990. Margin Regulation and Stock Market Volatility. *The Journal of Finance* 45 (1):3-29.

Jiang, G., C. M. C. Lee, and H. Yue. 2010. Tunneling through intercorporate loans: The China experience☆. *Journal of Financial Economics* 98 (1):1-20.

Jin, Z., B. Lin, X. Yang, and T. Zhang. 2018. Accounting conservatism and short selling: Evidence from China. *Journal of Business Finance & Accounting* 45 (3-4):352-394.

Karpoff, J. M., and X. Lou. 2010. Short Sellers and Financial Misconduct. *The Journal of Finance* 65 (5):1879-1913.

Khan, M., and H. Lu. 2013. Do Short Sellers Front-Run Insider Sales? *The Accounting Review* 88 (5):1743-1768.

Khanna, N., and R. D. Mathews. 2012. Doing battle with short sellers: The conflicted role of blockholders in bear raids. *Journal of Financial Economics* 106 (2):229-246.

Kim, Y., M. S. Park, and B. Wier. 2012. Is Earnings Quality Associated with Corporate Social Responsibility? *The Accounting Review* 87 (3):761-796.

Klein, B., and K. B. Leffler. 1981. The Role of Market Forces in Assuring Contractual Performance. *Journal of Political Economy* 89 (4):615-641.

Koh, P.-S., C. Qian, and H. Wang. 2014. Firm litigation risk and the insurance value of corporate social performance. *Strategic Management Journal* 35 (10):1464-1482.

La Porta, R., F. Lopez-De-Silanes, and A. Shleifer. 2002. Government Ownership of Banks. *The Journal of Finance* 57 (1):265-301.

Lanis, R., and G. Richardson. 2012. Corporate social responsibility and tax aggressiveness: An empirical analysis. *Journal of Accounting and Public Policy* 31 (1):86-108.

Li, W. J., and R. Zhang. 2010. Corporate Social Responsibility, Ownership Structure, and Political Interference: Evidence from China. *Journal of Business Ethics* 96 (4):631-645.

Li, Y., and L. Zhang. 2015. Short Selling Pressure, Stock Price Behavior, and Management Forecast Precision: Evidence from a Natural Experiment. *Journal of Accounting Research* 53 (1):79-117.

Li, Z., B. Lin, T. Zhang, and C. Chen. 2017. Does short selling improve stock price efficiency and liquidity? Evidence from a natural experiment in China. *The European Journal of Finance*:1-23.

Lins, K. V., H. Servaes, and A. Tamayo. 2017. Social Capital, Trust, and Firm Performance: The Value of Corporate Social Responsibility during the Financial Crisis. *JOURNAL OF FINANCE* 72 (4):1785-1823.

Lu, L. Y., Y. Yu, and L. Zhang. 2016. Short Selling Pressure and Corporate Social Responsibility Performance: Evidence from a Natural Experiment. *SSRN*:https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3166472.

Marquis, C., and C. Qian. 2014. Corporate Social Responsibility Reporting in China: Symbol or Substance? *Organization Science* 25 (1):127-148.

Massa, M., W. Qian, W. Xu, and H. Zhang. 2015a. Competition of the informed: Does the presence of short sellers affect insider selling? *Journal of Financial Economics* 118 (2):268-288.

Massa, M., B. Zhang, and H. Zhang. 2015b. The Invisible Hand of Short Selling: Does Short Selling Discipline Earnings Management? *The Review of Financial Studies* 28 (6):1701-1736.

Masulis, R. W., and S. W. Reza. 2015. Agency Problems of Corporate Philanthropy. *Review of Financial Studies* 28 (2):592-636.

Maxwell, John W., Thomas P. Lyon, and Steven C. Hackett. 2000. Self-Regulation and Social Welfare: The Political Economy of Corporate Environmentalism. *The Journal of Law and Economics* 43 (2):583-618.

McWilliams, A., and D. Siegel. 2001. Corporate Social Responsibility: A Theory of the Firm Perspective. *Academy of Management Review* 26 (1):117-127.

McWilliams, A., D. S. Siegel, and P. M. Wright. 2006. Corporate Social Responsibility: Strategic Implications*. *Journal of Management Studies* 43 (1):1-18.

Mei, J., J. Scheinkman, and W. Xiong. 2009. Speculative Trading and Stock Prices: Evidence from Chinese A-B Share Premia: China Economics and Management Academy, Central University of Finance and Economics.

Miller, E. M. 1977. Risk, Uncertainty, and Divergence of Opinion. *The Journal of Finance* 32 (4):1151-1168.

Minor, D., and J. Morgan. 2011. CSR as Reputation Insurance: Primum Non Nocere. *California Management Review* 53 (3):40-59.

Moser, D. V., and P. R. Martin. 2012. A Broader Perspective on Corporate Social Responsibility Research in Accounting. *The Accounting Review* 87 (3):797-806.

Myers, S. C. 1984. The Capital Structure Puzzle. *The Journal of Finance* 39 (3):574-592.

Parsa, S., G. L. Tang, and N. Dai. 2016. How do Chinese businesses view corporate social responsibility? BRIEFING. The Institute of Chartered Accountants in England and Wales. Available at: https://www.icaew.com/-/media/corporate/files/technical/research-and-academics/tecpln14774-charities-chinese-web.ashx. Accessed: Jan 23, 2019

Purnanandam, A., and H. N. Seyhun. 2018. Do Short Sellers Trade on Private Information or False Information? *Journal of Financial and Quantitative Analysis* 53 (03):997-1023.

Seguin, P. J. 1990. Stock volatility and margin trading. *Journal of Monetary Economics* 26 (1):101-121.

Servaes, H., and A. Tamayo. 2013. The Impact of Corporate Social Responsibility on Firm Value: The Role of Customer Awareness. *Management Science* 59 (5):1045-1061.

Wang, K., R. Wang, K. C. J. Wei, B. Zhang, and Y. Zhou. 2018. Insider Sales under the Threat of Short Sellers: New Hypothesis and New Tests. *SSRN*:https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2724532.

Zhang, L., E. I. Altman, and J. Yen. 2010. Corporate financial distress diagnosis model and application in credit rating for listing firms in China. *Frontiers of Computer Science in China* 4 (2):220-236.

Table 3.1

Sample selection and composition

Panel A Sample selection			
	Pilot	Non-pilot	Total
All A share firm-year observations	7,784	10,673	18,457
Exclude firms in financial industry	7,429	10,484	17,913
Exclude observations with a missing *CSRscore* or other variables	3,107	1,315	4,422
Exclude observations of the year when the firm is first included in the pilot program	2,275	1133	3,408
Panel B Sample distribution by year			
Year	*Freq.*	*Percent*	*Cum.*
2008	307	9.01%	9.01%
2009	385	11.30%	20.31%
2010	369	10.83%	31.13%
2011	371	10.89%	42.02%
2012	539	15.82%	57.83%
2013	372	10.92%	68.75%
2014	497	14.58%	83.33%
2015	568	16.67%	100.00%
Total	3,408	100.00%	
Panel C Sample distribution of the pilot firms before and during the pilot program			
	Freq.	*Percent*	*Cum.*
6 years before included in the pilot list	21	0.92%	0.92%
5 years before included in the pilot list	98	4.31%	5.23%
4 years before included in the pilot list	126	5.54%	10.77%
3 years before included in the pilot list	217	9.54%	20.31%
2 years before included in the pilot list	308	13.54%	33.85%
1 year before included in the pilot list	358	15.74%	49.58%
1 year after included in the pilot list	401	17.63%	67.21%
2 years after included in the pilot list	344	15.12%	82.33%
3 years after included in the pilot list	176	7.74%	90.07%
4 years after included in the pilot list	164	7.21%	97.27%
5 years after included in the pilot list	62	2.73%	100.00%
Total of pilot firm-year observations	2,275	100.00%	

Notes: Panel A shows the sample selection process. Panel B shows the sample distribution by year. Panel C shows the sample distributions of the pilot firms before and during the pilot program.

Table 3.2

Descriptive statistics and correlations

Panel A Descriptive statistics of the full sample

Variable	*N*	*SD*	*Mean*	*Min*	*P25*	*P50*	*P75*	*Max*
CSRscore	3,408	12.271	37.567	13.330	28.967	34.910	43.097	87.950
SIZE	3,408	1.373	22.900	18.878	21.884	22.789	23.804	25.726
LEV	3,408	0.199	0.492	0.043	0.345	0.506	0.648	1.215
PPE	3,408	0.188	0.255	0.002	0.104	0.212	0.378	0.741
ROA	3,408	0.051	0.048	-0.243	0.019	0.041	0.074	0.220
AGE	3,408	5.010	14.251	0.000	11.000	14.000	17.000	32.000
GROWTH	3,408	1.237	0.371	-0.796	-0.045	0.109	0.361	12.785
TOBINQ	3,408	1.673	1.694	0.208	0.628	1.208	2.108	13.126
LIQUIDITY	3,408	0.249	0.796	0.149	0.600	0.927	1.000	1.000
CAPEX	3,408	0.052	0.061	0.000	0.023	0.048	0.086	0.256
ANALYST	3,408	0.884	2.304	0.693	1.609	2.398	2.996	4.190
BIG4	3,408	0.363	0.156	0	0	0	0	1
DUAL	3,408	0.362	0.155	0	0	0	0	1

Panel B Comparison between pilot and non-pilot firms (full sample)

	Non-Pilot Firms		Pilot Firms		
Variables	*N*	*Mean*	*N*	*Mean*	*Difference*
CSRscore	1,133	34.486	2,275	39.101	-4.614***
SIZE	1,133	21.994	2,275	23.351	-1.357***
LEV	1,133	0.461	2,275	0.508	-0.047***
PPE	1,133	0.280	2,275	0.242	0.038***
ROA	1,133	0.042	2,275	0.051	-0.009***
AGE	1,133	13.475	2,275	14.638	-1.163***
GROWTH	1,133	0.292	2,275	0.411	-0.119***
TOBINQ	1,133	1.744	2,275	1.669	0.076
LIQUIDITY	1,133	0.734	2,275	0.827	-0.093***
CAPEX	1,133	0.065	2,275	0.059	0.006***
ANALYST	1,133	1.919	2,275	2.495	-0.575***
BIG4	1,133	0.048	2,275	0.210	-0.162***
DUAL	1,133	0.174	2,275	0.145	0.028**

Table 3.2 - Continued

Panel C Pearson's correlation coefficients and Spearman's rank correlation

	CSRscore	*SHORT*	*SIZE*	*LEV*	*PPE*	*ROA*	*AGE*
CSRscore		0.374***	0.363***	0.071***	0.030*	-0.020	0.113***
SHORT	0.364***		0.481***	0.095***	-0.080***	-0.067***	0.264***
SIZE	0.442***	0.486***		0.540***	0.058***	-0.218***	0.185***
LEV	0.106***	0.092***	0.540***		-0.003	-0.523***	0.147***
PPE	0.055***	-0.075***	0.122***	0.063***		-0.168***	-0.060***
ROA	-0.027	-0.052***	-0.171***	-0.483***	-0.177***		-0.112***
AGE	0.066***	0.253***	0.159***	0.158***	-0.048***	-0.093***	
GROWTH	-0.062***	0.036**	0.028*	0.105***	-0.232***	0.009	0.112***
TOBINQ	-0.117***	-0.057***	-0.488***	-0.523***	-0.190***	0.413***	-0.095***
LIQUDITY	0.123***	0.291***	0.207***	0.211***	0.076***	-0.156***	0.304***
CAPEX	-0.022	-0.136***	-0.050***	-0.081***	0.357***	0.071***	-0.178***
ANALYST	0.158***	0.124***	0.296***	-0.062***	0.006	0.398***	-0.156***
BIG4	0.325***	0.162***	0.447***	0.121***	0.060***	0.028	-0.006
DUAL	-0.051***	-0.013	-0.157***	-0.143***	-0.107***	0.092***	-0.016

	GROWTH	*TOBINQ*	*LIQUDITY*	*CAPEX*	*ANALYST*	*BIG4*	*DUAL*
CSRscore	-0.024	-0.111***	0.111***	-0.015	0.117***	0.247***	-0.018
SHORT	0.057***	-0.112***	0.232***	-0.123***	0.118***	0.162***	-0.013
SIZE	-0.032*	-0.630***	0.191***	-0.067***	0.281***	0.419***	-0.162***
LEV	0.049***	-0.686***	0.184***	-0.140***	-0.065***	0.112***	-0.137***
PPE	-0.333***	-0.141***	0.077***	0.475***	0.006	0.038**	-0.095***
ROA	0.001	0.526***	-0.179***	0.079***	0.427***	0.029*	0.115***
AGE	0.052***	-0.133***	0.272***	-0.193***	-0.170***	-0.002	-0.017
GROWTH		0.091***	-0.012	-0.205***	-0.037**	-0.066***	0.010
TOBINQ	0.019		-0.227***	0.070***	0.112***	-0.195***	0.195***
LIQUDITY	0.025	-0.176***		-0.131***	-0.140***	0.073***	-0.100***
CAPEX	-0.159***	-0.002	-0.128***		0.221***	0.065***	0.030*
ANALYST	-0.045***	0.100***	-0.094***	0.199***		0.188***	0.030*
BIG4	-0.035**	-0.155***	0.055***	0.044***	0.188***		-0.077***
DUAL	-0.023	0.183***	-0.089***	0.037**	0.030*	-0.077***	

Notes: Panel A of this table presents the descriptive statistics for the full sample. Panel B of this table presents the comparison between the pilot and non-pilot firms. Panel C of this table presents Pearson's correlation coefficients and Spearman's rank correlation among the main regression variables. Specifically, the lower-triangular cells report Pearson's correlation coefficients, and the upper-triangular cells are Spearman's rank correlation. Continuous variables are winsorized at the 1st and 99th percentiles of their distributions. Variable definitions are provided in Appendix 3.2. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 3.3

Univariate Analysis

Panel A Cross-sectional Comparison

	Pilot Firms		Non-Pilot Firms		Cross-sectional Estimator	
CSR performance	*Mean*	*Median*	*Mean*	*Median*	*Difference in Mean*	*Difference in Median*
PRE	34.252	31.380	28.341	27.050	5.911 (t = -7.202)	4.330 (z = -7.885)
DURING	43.997	41.087	35.876	34.106	8.121 (t = -15.760)	6.981 (z = -14.854)

Panel B Univariate DiD Test

	Pilot Diff	*Non-Pilot Diff*	*DiD Estimator*
CSR performance (DURING – PRE)	9.745***	7.535***	2.210**
t-statistics	-18.558	-11.294	2.234

Notes: Panel A reports the summary statistics on the level of annual CSR performance for the sample of pilot firms and non-pilot firms for the period before and during the deregulation of the short selling and margin trading pilot program and the differences in the mean and median. Panel B shows the univariate results of the difference-in-differences (DiD) tests. The sample comes from the list of pilot programs and contains firms that have data available to calculate firm characteristics and CSR performance over the entire sample period (2008 to 2015). A firm is classified into the treatment group if its stock is designated as a pilot stock during the program and into the benchmark group otherwise. As for pilot firms, I define the period before the pilot firms are added into the pilot list as *PRE*, and the period after entering the pilot list as *DURING*. As for non-pilot firms, I define the two years before the pilot program (2008 and 2009) as *PRE*, and the years after the pilot program (2011 to 2015) as *DURING*. Variable definitions are provided in Appendix 3.2. ***, **, and * indicate the significance at the .01, .05 and .10 levels, respectively (two-tailed test).

Table 3.4

Effect of the removal of the short-selling and margin-trading bans on CSR performance (full sample)

	CSRscore			*ΔCSRscore*		
	(1)	(2)	(3)	(4)	(5)	(6)
PILOT* × *DURING	**1.603*** (3.484)**	**1.201*** (2.576)**	**1.422*** (2.984)**	**1.920*** (4.092)**	**1.499*** (3.152)**	**1.732*** (3.552)**
PILOT	2.934*** (4.409)	-0.030 (-0.042)		2.898*** (4.399)	-0.020 (-0.029)	
SIZE		2.109*** (6.046)	0.772 (1.268)		2.040*** (5.923)	0.613 (0.994)
LEV		0.692 (0.452)	2.053 (1.081)		0.948 (0.614)	2.634 (1.359)
PPE		3.260** (2.252)	3.204* (1.737)		2.653* (1.832)	2.702 (1.440)
ROA		9.563** (2.510)	10.679** (2.571)		5.848 (1.528)	6.864 (1.641)
AGE		-0.149** (-1.982)	1.623*** (11.153)		-0.152** (-2.049)	-0.094 (-0.650)
GROWTH		-0.332*** (-4.120)	-0.300*** (-3.504)		-0.294*** (-4.024)	-0.272*** (-3.496)
TOBINQ		-0.005 (-0.047)	0.005 (0.039)		-0.039 (-0.336)	-0.046 (-0.351)
LIQUIDITY		0.270 (0.387)	0.182 (0.250)		0.523 (0.728)	0.435 (0.580)
CAPEX		-0.752 (-0.243)	-0.823 (-0.249)		-1.420 (-0.455)	-1.140 (-0.344)
ANALYST		0.381* (1.692)	0.371 (1.516)		0.416* (1.846)	0.397 (1.631)
BIG4		3.741*** (3.668)	1.660 (1.263)		3.663*** (3.630)	1.394 (1.084)
DUAL		-0.633 (-1.303)	-0.426 (-0.760)		-0.748 (-1.577)	-0.564 (-1.034)
Constant	22.462*** (11.429)	-22.074*** (-3.039)	-10.967 (-0.880)	-0.466 (-0.305)	-43.393*** (-6.050)	-12.033 (-0.967)
Observations	3,408	3,408	3,408	3,408	3,408	3,408
Adjusted R^2	0.450	0.456	0.461	0.045	0.051	0.060
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	No	Yes	No	No	Yes

Notes: This table reports the results of regressions estimating the difference-in-differences (DiD) in the CSR performance of pilot firms and non-pilot firms for the periods before and during the pilot program. I estimate the following model using annual data: $CSRscore_{i,t}\ (CSR\_ADJ_{i,t}) = \beta_0 + \beta_1 PILOT_i \times DURING_t + \beta_2 PILOT_i + \beta_k Controls_{i,t} + \varepsilon_{i,t}$ in Columns (2) and (5). I only keep $PILOT_i \times DURING_t$ and $PILOT_i$ in Columns (1) and (4), and omit $PILOT_i$ in Columns (3) and (6) to avoid multicollinearity. Fixed effects for industry level and year level are included in all regressions but are not reported. Variables definitions are provided in Appendix 3.2. The *z*-statistics are based on robust standard errors clustered by firm and are displayed in parentheses. ***, **, and * indicate the significance at the .01, .05 and .10 levels, respectively (two-tailed test).

Table 3.5

Separate effects of short selling and margin trading on CSR performance

	CSRscore			Δ*CSRscore*		
	(1)	(2)	(3)	(4)	(5)	(6)
SHORT	**4.961*** (3.213)**		**4.888*** (3.140)**			
MARGIN		**0.006 (0.948)**	**0.001 (0.207)**			
Δ*SHORT*				**2.391** (2.005)**		**2.326* (1.962)**
Δ*MARGIN*					**0.009 (1.218)**	**0.008 (1.114)**
SIZE	0.800	0.973	0.792	0.411	0.432	0.402
	(1.321)	(1.623)	(1.306)	(0.716)	(0.754)	(0.702)
LEV	1.775	1.683	1.804	-1.469	-1.452	-1.505
	(0.949)	(0.897)	(0.959)	(-0.764)	(-0.755)	(-0.782)
PPE	3.068*	3.059*	3.085*	1.931	1.806	1.917
	(1.672)	(1.661)	(1.683)	(1.014)	(0.946)	(1.007)
ROA	10.600**	10.344**	10.631**	3.840	3.582	3.720
	(2.563)	(2.499)	(2.571)	(0.893)	(0.832)	(0.870)
AGE	1.723***	1.695***	1.717***	-0.585***	-0.615***	-0.589***
	(11.700)	(11.332)	(11.489)	(-4.046)	(-4.291)	(-4.059)
GROWTH	-0.299***	-0.305***	-0.298***	-0.233**	-0.227**	-0.229**
	(-3.520)	(-3.528)	(-3.510)	(-2.514)	(-2.471)	(-2.473)
TOBINQ	-0.026	-0.001	-0.026	0.135	0.177	0.137
	(-0.206)	(-0.007)	(-0.206)	(0.866)	(1.148)	(0.880)
LIQUIDITY	0.341	0.376	0.361	1.803**	1.872**	1.878**
	(0.465)	(0.510)	(0.491)	(2.039)	(2.089)	(2.096)
CAPEX	-1.346	-0.915	-1.331	5.134	5.365	5.165
	(-0.409)	(-0.276)	(-0.404)	(1.499)	(1.565)	(1.510)
ANALYST	0.357	0.366	0.358	-0.027	-0.034	-0.031
	(1.455)	(1.489)	(1.460)	(-0.106)	(-0.134)	(-0.122)
BIG4	1.655	1.544	1.656	-3.143*	-3.170*	-3.132*
	(1.266)	(1.167)	(1.267)	(-1.764)	(-1.789)	(-1.764)
DUAL	-0.466	-0.390	-0.463	-0.101	-0.077	-0.101
	(-0.832)	(-0.690)	(-0.827)	(-0.194)	(-0.148)	(-0.195)
Constant	-12.548	-16.092	-12.331	0.961	0.729	1.251
	(-1.018)	(-1.310)	(-0.997)	(0.076)	(0.058)	(0.099)
Observations	3,408	3,408	3,408	2,734	2,734	2,734
Adjusted R^2	0.461	0.458	0.461	0.069	0.068	0.069
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table shows that the effects of short selling and margin trading on CSR performance using pooling regression with fixed effects for industry, year, and firm. I test the effects of short selling and margin trading by estimating the following model: $CSRscore[\Delta CSRscore]=\alpha_0+\alpha_1 MARGIN[\Delta MARGIN]+\alpha_2 SHORT[\Delta SHORT]+\alpha_k Controls+Industry\ FE+Year\ FE+Firm\ FE+\epsilon$. Columns (1)–(3) report the results of the pool regression with fixed effects. Columns (4)–(6) report the results of the first difference model. Variable definitions are provided in Appendix 3.2. The *z-statistics* are based on robust standard errors clustered by firm and are displayed in parentheses. ***, **, and * indicate the significance at the .01, .05, and .10 levels, respectively (two-tailed test).

Table 3.6

Robust checks

Panel A Parallel trend test		
	CSRscore	*t-value*
	(1)	(2)
PILOT	-4.408***	(-2.658)
PILOT×BEFORE5	-1.476	(-0.959)
PILOT×BEFORE4	0.685	(0.442)
PILOT×BEFORE3	0.732	(0.486)
PILOT×BEFORE2	0.728	(0.468)
PILOT×BEFORE1	1.881	(1.177)
PILOT×AFTER1	**4.454*** **	**(2.649)**
PILOT×AFTER2	**4.223** **	**(2.470)**
PILOT×AFTER3	**7.181*** **	**(4.037)**
PILOT×AFTER4	**6.996*** **	**(3.840)**
PILOT×AFTER5	**7.123*** **	**(3.678)**
Control variables	Yes	
Observations	3,408	
Adjusted R^2	0.432	
Industry FE	Yes	
Year FE	No	
Firm FE	No	

Panel B Effect of short selling and margin trading on CSR performance (PSM sample)		
	(1)	(2)
PILOT×DURING	**1.168*** **(1.707)**	**1.351*** **(1.920)**
PILOT	0.676 (0.792)	
Control variables	Yes	Yes
Observations	1,853	1,853
Adjusted R^2	0.457	0.460
Industry FE	Yes	Yes
Year FE	Yes	Yes
Firm FE	No	Yes

Table 3.6 - Continued

Panel C Placebo tests

	Including the pilot entry year: *during period*		Including the pilot entry year: *before period*		Years after 2010 set as *during* for non-pilot firms
	(1)	(2)	(3)	(4)	(5)
PILOT×DURING	**0.698***	**0.831****	**1.099*****	**1.262*****	**2.275*****
	(1.739)	**(2.048)**	**(2.979)**	**(3.368)**	**(2.808)**
PILOT	0.170		0.107		-0.990
	(0.242)		(0.155)		(-1.240)
DURING					-1.416*
					(-1.934)
Control Variables	Yes	Yes	Yes	Yes	Yes
Observations	3,790	3,790	3,790	3,790	3,408
Adjusted R^2	0.435	0.439	0.437	0.441	0.458
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Firm FE	No	Yes	No	Yes	No

Notes: Panel A of this table reports DiD estimates from regressions of the CSR performance of pilot firms on the Chinese margin-trading and short-selling pilot program for the period 2008–2015. I include 10 indicator variables (*BEFORE1, BEFORE2, BEFORE3, BEFORE4, BEFORE5, AFTER1, AFTER2, AFTER3, AFTER4,* and *AFTER5*) to examine the timing of changes in the CSR performance of pilot firms relative to the timing of the completion of their cross-border acquisitions. Panel B reports the DiD results with propensity score matching. Panel C shows the results of the placebo tests, when including the year of entering the pilot program in the "during" period and "before" period and manually sets the year after 2010 as the "during" period for the non-pilot firms. Variable definitions are provided in Appendix 3.2. The *z*-statistics are based on robust standard errors clustered by firm and are displayed in parentheses. ***, **, and * indicate the significance at the .01, .05, and .10 levels, respectively (two-tailed test).

Table 3.7

Effects of the pilot program on CSR performance before, during, and after the pilot program

	Before vs. During		Before vs. During vs. After		Before vs. After	
	(1)	(2)	(3)	(4)	(5)	(6)
PILOT	-0.168 (-0.237)		-0.173 (-0.245)		0.359 (0.522)	
PILOT×DURING	**1.362***** **(2.639)**	**1.639***** **(3.113)**	**1.392***** **(2.698)**	**1.667***** **(3.169)**		
PILOT×POST			**1.960** **(1.334)**	**2.482** **(1.580)**	**0.799** **(0.941)**	**1.078** **(1.358)**
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,368	3,368	3,408	3,408	3,408	3,408
Adjusted R^2	0.453	0.458	0.457	0.462	0.453	0.458
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	Yes	No	Yes	No	Yes

Notes: The table presents the results from the placebo test. I include variables representing both the during period and post-period of the pilot program (*DURING* and *POST*) to examine the effects of the pilot program on the CSR performance of firms after the firm is excluded from the pilot list. Continuous variables are winsorized at the 1st and 99th percentiles of their distributions. The two-tailed *z*-statistics in parentheses are based on heteroscedasticity-robust standard errors clustered by country. Variable definitions are provided in Appendix 3.2. ***, **, and * indicate the significance at the .01, .05, and .10 levels, respectively.

Table 3.8

Effects of the pilot program on CSR performance for short interest

	CSRscore	*CSRscore_ADJ*
	(1)	(2)
PILOT×DURING	**0.979***	**1.332*****
	(1.948)	**(2.616)**
PILOT	-0.013	-0.008
	(-0.018)	(-0.012)
SHORTINTEREST	**1.782**	**1.338**
	(1.095)	**(0.784)**
Control variables	Yes	Yes
Observations	3408	3408
Adjusted R^2	0.344	0.201
Industry FE	Yes	Yes
Year FE	Yes	Yes

Notes: The table reports the regression results on the differences in the CSR performance of pilot and non-pilot firms for the periods before and during the pilot program controlling for short interest. Continuous variables are winsorized at the 1st and 99th percentiles of their distributions. The two-tailed *z*-statistics reported in parentheses are based on heteroscedasticity-robust standard errors clustered by firm. ∗∗∗, ∗∗, and ∗ indicate the statistical significance at the .01, .05, and .10 levels (two-sided), respectively. Appendix 3.2 contains the variable definitions.

Table 3.9

Effects of downward price pressure on CSR performance when firms become targets of short-selling

	CSRscore	*CSRscore_ADJ*
	(1)	(2)
PILOT×DURING	1.166**	1.464***
	(2.500)	(3.079)
SHORTPRESS×PILOT×DURING	**0.139*** **	**0.113** **
	(3.025)	**(2.320)**
PILOT	-0.063	-0.051
	(-0.090)	(-0.074)
SHORTPRESS×PILOT	-0.135***	-0.110**
	(-2.968)	(-2.259)
Control variables	Yes	Yes
Observations	3,408	3,408
Adjusted R^2	0.343	0.201
Industry FE	Yes	Yes
Year FE	Yes	Yes

Notes: The table presents results on the regression analysis of downward price pressure on CSR performance when firms become the target of short sellers. *SHORTPRESS* measures downward price pressure. The two-tailed *z*-statistics reported in parentheses are based on heteroscedasticity-robust standard errors clustered by firm. ∗∗∗, ∗∗, and ∗ indicate the statistical significance at the .01, .05, and .10 levels (two-sided), respectively. Appendix 3.2 contains the variable definitions.

Table 3.10

Effects of earnings news on the relation between the margin-trading and short-selling pilot program and CSR performance: good earnings news vs. bad earnings news

	Good earnings news	Bad earnings news
	(1)	(2)
PILOT×DURING	**-0.550**	**2.134***
	(-0.517)	**(1.811)**
PILOT	-0.774	-0.724
	(-0.633)	(-0.616)
Control variables	Yes	Yes
Observations	1,921	1,487
Adjusted R^2	0.312	0.400
Industry FE	Yes	Yes
Year FE	Yes	Yes
Chow test		
Chi2	4.900**	
P-value	0.027	

Notes: The table presents the results on the changes in CSR performance regarding the margin-trading and short-selling pilot program in good earnings news and bad earnings news groups. Good (or bad) earnings news is defined as the ROA above (or below) the industry median. The *z*-statistics reported in the parentheses are based on heteroscedasticity-robust standard errors clustered by firm. ∗, ∗∗,and ∗∗∗ indicate the statistical significance at the .10, .05, and .01 levels (two-sided), respectively. Appendix 3.2 contains the variable definitions.

Table 3.11

Effects of bankruptcy risk on the relation between the margin-trading and short-selling pilot program and CSR performance: high bankruptcy risk vs. low bankruptcy risk

	High bankruptcy risk	Low bankruptcy risk
	(1)	(2)
PILOT×DURING	**1.559****	**0.263**
	(2.156)	**(0.451)**
PILOT	0.437	-1.224
	(0.493)	(-1.248)
Control variables	Yes	Yes
Observations	1,742	1,666
Adjusted R^2	0.440	0.487
Industry FE	Yes	Yes
Year FE	Yes	Yes
Chow test		
Chi2	3.355*	
P-value	0.0670	

Notes: The table presents the results on the changes in CSR performance regarding the margin-trading and short-selling pilot program in firms with high bankruptcy risk and low bankruptcy risk. Bankruptcy risk is measured based on the $Z_{China}Score$, which is to identify financially distressed firms in China according to Zhang et al. (2010): $Z_{China}Score = 0.517\text{-}0.460X_6+9.320X_7+0.388X_8+1.158X_9$, where X_6 is the total liabilities/total assets, X_7 is the net profit/average total assets, X_8 is the working capital/total assets, and X_9 is the retained earnings/total assets. Firm years that have a $Z_{China}Score$ value greater than 0.9 (lower than 0.5) are classified as financially healthy (distressed), and firm years with a $Z_{China}Score$ value between 0.5 and 0.9 are classified as potentially distressed companies, and a close watch is required (Zhang et al. 2010). I classify firm-year observations with a $Z_{China}Score$ larger than 0.9 in the low bankruptcy risk subsample and firm-year observations with a $Z_{China}Score$ lower than 0.9 in the high bankruptcy risk subsample. The *z*-statistics reported in the parentheses are based on heteroscedasticity-robust standard errors clustered by firm. ∗, ∗∗,and ∗∗∗ indicate the statistical significance at the .10, .05, and .01 levels (two-sided), respectively. Appendix 3.2 contains the variable definitions.

Table 3.12

Effects of firm ownership on the relation between the margin-trading and short-selling pilot program and CSR performance: SOEs vs. non-SOEs

	SOE	non-SOE
	(1)	(2)
PILOT×DURING	**1.543*** (2.666)**	**0.200 (0.262)**
PILOT	-0.038 (-0.039)	0.583 (0.569)
Control variables	Yes	Yes
Observations	2,156	1,252
Adjusted R^2	0.453	0.496
Industry FE	Yes	Yes
Year FE	Yes	Yes
Firm FE	No	No
Chow test		
Chi2	1.500*	
P-value	0.080	

Notes: The table presents the results on the changes in CSR performance regarding the margin-trading and short-selling pilot program for SOEs and non-SOEs. A firm is defined as an SOE if the ultimate controlling shareholder is a state government; otherwise, it is classified as a non-SOE. The *z*-statistics reported in parentheses are based on heteroscedasticity-robust standard errors clustered by firm. *, **, and *** indicate the statistical significance at the .10, .05, and .01 levels (two-sided), respectively. Appendix 3.2 contains the variable definitions.

Table 3.13

Effects of ownership concentration on the relation between the margin-trading and short-selling pilot program and CSR performance: high concentrated vs. low concentrated ownership

	High concentrated ownership	Low concentrated ownership
	(1)	(2)
PILOT×DURING	**1.797****	**0.064**
	(2.422)	**(0.105)**
PILOT	0.366	-0.331
	(0.386)	(-0.357)
Control variables	Yes	Yes
Observations	1,823	1,585
Adjusted R^2	0.439	0.449
Industry FE	Yes	Yes
Year FE	Yes	Yes
Chow test		
Chi2	9.256***	
P-value	0.002	

Notes: The table presents the results on the changes in CSR performance regarding the margin-trading and short-selling pilot program in the high concentrated ownership and low concentrated ownership groups. High concentrated ownership is defined as the top ten shareholders above (below) the industry median. The *z*-statistics are reported in the parentheses and are based on heteroscedasticity-robust standard errors clustered by firm. ∗∗∗, ∗∗, and ∗ indicate the statistical significance at the .01, .05, and .10 levels (two-sided), respectively. Appendix 3.2 contains the variable definitions.

Appendix 3.1

The timeline of CSRC pilot program

Effective Day	Announcement Day	Firms Added	Firms Deleted	Firms on List
03/31/2010	02/12/2010	90	0	90
Between 03/2010 and 11/2011		*6*	*6*	*90*
12/05/2011	11/25/2011	189	1	278
01/31/2013	01/25/2013	222	0	500
Between 01/2013 and 09/2013		0	6	494
09/16/2013	09/06/2013	206	0	700
Between 09/2013 and 09/2014		0	5	695
09/22/2014	09/12/2014	205	0	900

Notes: The table summarizes changes in the qualification list from the initial implementation of the pilot program (February 12, 2010) to the latest major revision (September 22, 2014) in China. The effective date refers to the date on which a designated stock can perform margin trading and/or short selling. The announcement date refers to the date on which the China Securities Regulatory Commission (CSRC) announced a change in the list of qualified stocks. I do not count ETF in the table (*source: http://www.sse.com.cn/market/othersdata/margin/sum/ and http://www.szse.cn/disclosure/margin/margin/index.html*).

Appendix 3.2

Variable Definition

Variable	Definition
Dependent Variables	
CSRscore	The overall CSR score of Chinese listed firms from RKS.
Δ*CSRscore*	The change in *CSRscore* at the end of fiscal year *t* Δ*CSRscore* = *CSRscore* (*t*) – *CSRscore* (*t*-1).
Experiment-related Variables	
PILOT	Dummy variable that equals 1 if the stock is designated as a pilot stock in the margin-trading and short-selling program and is 0 otherwise.
DURING	Dummy variable that equals 1 after the year a firm is selected as a pilot firm and is 0 otherwise (Wang et al. 2018).
POST	Dummy variable that equals 1 for the year a pilot firm is excluded from the pilot list and is 0 otherwise (Wang et al. 2018).
SHORT	The total remaining balance of a firm's short selling at the end of fiscal year *t*, standardized by the total market capitalization (Chen et al. 2017).
Δ*SHORT*	The net RMB value change of a firm's short sales at the end of fiscal year *t*, standardized by the total market capitalization (Chen et al. 2017) Δ*SHORT* = *SHORT*(*t*) – *SHORT*(*t*-1).
MARGIN	Total remaining balance of a firm's margin buying at the end of fiscal year *t*, standardized by the total market capitalization (Chen et al. 2017).
Δ*MARGIN*	The net RMB value change of a firm's margin buying at the end of fiscal year *t*, standardized by the total market capitalization (Chen et al. 2017) Δ*MARGIN* = *MARGIN*(*t*) – *MARGIN*(*t*-1).
Control Variables	
SIZE	Natural logarithm of total assets at the end of the fiscal year.
LEV	Ratio of total liability to total assets at the end of the fiscal year.
PPE	Ratio of cash paid to purchase and construct fixed assets, intangible assets, and other long-term assets to total assets.
ROA	Ratio of net income to total assets at the end of the fiscal year.
AGE	The difference between the current fiscal year and the first fiscal year when the firm was established.
GROWTH	The growth of total sales at the end of the fiscal year.
TOBINQ	Market-to-book ratio at the end of the fiscal year.
LIQUIDITY	Ratio of the total outstanding shares to the total shares at the end of the fiscal year.
CAPEX	Ratio of the total capital expenditure to the total assets at the end of the fiscal year.

ANALYST	Number of forecasting agencies for the fiscal year.
BIG4	Dummy variable is 1 for big 4 auditors and is 0 otherwise.
DUAL	Dummy variable is 1 if the CEO is also the chairman of a firm and is 0 otherwise.
Other Variables	
SHORTINTEREST	The ratio of the shares in a short position to the total shares outstanding in the fiscal year multiplied by 1,000.
SHORTPRESS	Abnormal short sales, estimated as a firm's short-sales volume in a certain year minus the median level of annual short sales of all eligible firms. I multiple this number by 1,000,000.
GOODNEWS	Dummy variable is 1 if the ROA at the end of the fiscal year is below the industry median ROA and is 0 otherwise.
SOE	Dummy variable is 1 if the ultimate controlled shareholders are state governments and is 0 otherwise.
BANKRUPTCY	Ordered variable is 0 for firm-year observations with a $Z_{China}Score$ larger than 0.9 ($Z \geq 0.9$); 1 for firm-year observations with a $Z_{China}Score$ lower than 0.9 but larger than 0.5 ($0.5 \leq Z < 0.9$); and is 2 for firm-year observations with a $Z_{China}Score$ lower than 0.5 ($Z \leq 0.5$).
$Z_{China}Score$	Follow Zhang et al. (2010), to calculate the *Z*-Score for Chinese firms to identify financial distress: $Z_{China}Score = 0.517\text{-}0.460X_6+9.320X_7+0.388X_8+1.158X_9$, where X_6 is the total liabilities/total assets, X_7 is the net profit/average total assets, X_8 is the working capital/total assets, and X_9 is the retained earnings/total assets.
LARGESH	Dummy variable is 1 if the ownership of the top 10 shareholders are above the median ownership of the top 10 shareholders in that industry in the fiscal year and is 0 otherwise.

Appendix 3.3

Propensity Score Matching (PSM)

Panel A Logit model to calculate propensity scores

	LIST	*t-value*
	(1)	(2)
SIZE	1.7102***	(17.2025)
BM	-1.2393***	(-11.7132)
GOV	-0.4121	(-1.2226)
ROA	3.7186**	(2.3075)
TURNOVER	0.0000	(0.1271)
SM	0.0154	(0.1217)
Constant	-35.6795***	(-16.7776)
Observations	2,295	
Industry	Yes	
Year	Yes	
Pseudo R^2	0.395	

Panel B Balance test

	Unmatched			Matched		
	Treated	*Control*	*Diff.*	*Treated*	*Control*	*Diff.*
SIZE	21.994	22.867	-0.873***	22.281	22.181	0.099
BM	1.112	1.122	-0.011	1.202	1.182	0.020
GOV	0.076	0.143	-0.067***	0.112	0.110	0.003
ROA	0.042	0.058	-0.015***	0.047	0.050	-0.003
TURNOVER	605.051	501.285	103.766***	540.358	534.848	5.509
BM	0.517	0.638	-0.121***	0.626	0.632	-0.006

Sample	*Ps* R^2	*LR* chi^2	*P>*chi^2
Unmatched	0.205	629.71	0.000
Matched	0.004	5.58	0.472

Notes: The table reports the propensity score matching results. Panel A shows the results of the logit model to calculate the propensity score. Panels B shows the balance test of the PSM sample.

4 CHAPTER FOUR

MANDATORY CSR DISCLOSURE AND FINANCIAL CONSTRAINTS

4.1 Introduction

In recent years, there has been an upsurge in regulation around the world that requires companies to disclose information on their CSR activities, stemming from an acknowledgment that CSR information is increasingly relevant both for company stakeholders and shareholders by a growing number of regulatory bodies. Between 2013 and 2016, the number of CSR or CSR-related mandates around the world increased from 130 to almost 250 (Bartels et al. 2016). The global trend of mandatory CSR reporting amplifies the need to better understand the consequences of mandatory CSR reporting (Grewal et al. 2017; Ioannou and Serafeim 2016). In this study, I examine the effect of mandatory CSR disclosure on firms' financial constraints in the Chinese context.

China as a transitional economy provides an ideal setting to examine mandatory CSR reporting and financial constraints for several reasons. First, China has mandatory CSR reporting guidelines issued by SSE and SZSE that have required a subset of listed companies to provide CSR reports since 2008. Moreover, the economic development of China has heavily relied on the large SOEs for a long time, which have both political

duties and economic targets under the control of central or local governments, and acquire financial supports and political resources as well. The CSR activities are regarded as a way of exchanging interests between the governments and companies. Meanwhile, companies not owned by the state also seek to build political connections with the government by taking on more social responsibilities. Therefore, the disclosure of CSR activities is important for stakeholders to assess the political risks of the firms. Finally, based on the World Business Environment Survey of the investment climate in 2006, 75% of firms in China cite financial constraints as a major obstacle. This figure ranked China as the most financially constrained country among 80 countries where the survey was conducted (Claessens and Tzioumis 2006).

According to the shareholder expense view that focuses on shareholder value maximization, CSR engagement requires the use of corporate resources and hence is considered a cost to shareholders. Under mandatory CSR reporting, Chinese firms are obliged to engage in charity, environmental protection, community development, and other CSR activities. These social accomplishments may be achieved by diverting firm resources that otherwise could be deployed for identifying and funding profitable projects. Chen et al. (2018) find that the firms with mandatory CSR reporting experience a decrease in profitability subsequent to the mandate in China because they engage in reducing industrial pollution at the expense of shareholders. I argue that mandatory CSR disclosure potentially distorts the optimal allocation of corporate resources, reduces profitability, and thus restrains the access to external financing. In addition to the direct costs of CSR engagement, CSR is viewed as the result of agency conflicts and moral hazard since managers or controlling shareholders might engage in CSR to further their own agendas, in particular when resources constraints are slack. I hypothesize that firms with mandatory CSR reporting face greater financial constraints subsequent to the CSR disclosure mandate in China.

I also explore political connections as a possible mechanism through which mandatory CSR reporting affects financial constraints. Firms that are mandated to report CSR activities are expected to pursue CSR to meet the expectations of the Chinese government. The Chinese government has incentives to divert wealth to obtain social stability (Bai et al. 2005). Specifically, firms with mandatory CSR reporting are under pressure from the government to achieve social or political objectives related to government policy, such as infrastructure development and resolution of the region's fiscal and unemployment challenges (See 2008). For those firms with mandatory CSR reporting that are politically connected, they can enjoy preferential treatment and support from the government (Lin et al. 2015; Li et al. 2006). In contrast, firms that are subject to the CSR mandate but without political connections do not gain these privileges but are under pressure to meet non-financial goals related to government policy at the expense of corporate profitability. I expect that firms under mandatory CSR reporting without political connections confront greater financial constraints than those that are politically connected subsequent to the CSR disclosure mandate.

Using a panel dataset for the Chinese listed firms during the period from 2006 to 2013, I examine the effect of mandatory CSR reporting on financial constraints. I employ the DiD regression approach with the PSM procedure to compare the changes of the control and treatment groups subsequent to the mandate. This research design can solve the endogenous problems and control other macro factors that affect financial constraints but are unrelated to the mandate.

I find that compared with firms that are not mandated to provide CSR reports, firms that are subject to mandatory CSR reporting experience an increase in financial constraints subsequent to the CSR mandate, consistent with the shareholder expense view on CSR. That is, CSR is used as a means to demonstrate self-serving behavior by managers or controlling shareholders (e.g., enhancing their private benefit) at the cost of

shareholder wealth (Barnea and Rubin 2010). I further investigate the possible mechanism through which mandatory CSR reporting affects the ability of firms to access financing. I find that the effects of mandatory CSR reporting on financial constraints are more pronounced for firms without political connections than political-connected firms, suggesting that investing scarce resources on CSR is perceived to be costly. Nevertheless, the political connections of these firms appear to alleviate the financial constraints imposed by mandatory CSR disclosure.

Moreover, I investigate the mediating effect of agency conflicts on the relation between mandatory CSR reporting and financial constraints. The result shows that mandatory CSR reporting do not increase the first type of agency conflict between managers and shareholders, but increases the agency conflict between major shareholders and minor shareholders, which furthermore increases financial constraints. The additional analyses show that the observed increase in financial constraints is not driven by CSR performance of firms. That is, CSR performance of firms do not affect the relationship between mandatory CSR reporting and financial constraints. Finally, I test the effects of voluntary CSR reporting on financial constraints, but I do not find any significant results. The result suggests that voluntary CSR reports may not attract enough attention among stakeholders.

This study makes several contributions to the literature. First, while prior literature focuses on the ability to access financing using the voluntary CSR disclosure setting in developed economies, I examine the effect of CSR reporting on the financial constraints in the context of the mandatory CSR disclosure regime in emerging economies. Although government-mandated CSR disclosure in emerging economies has received considerable attention because of the severity of social, environmental, and governance problems, empirical evidence on the effect of mandatory CSR reporting is limited. The results suggest that firms that are mandated to disclose CSR activities

experience an increase in financial constraints in China, the largest emerging economy. The results are contrary to those studies using the setting of voluntary CSR disclosure (Cheng et al. 2014), highlighting the distinction between voluntary and mandatory CSR disclosures.

Second, this study contributes to the growing literature that investigates the effect of underlying economies and institutions on the effectiveness of government intervention through legislation/regulation of corporate practices. As government and stock exchanges move to incorporate CSR into disclosure requirements worldwide, this study suggests that CSR activities that can be valuable for seeking political connections in emerging economies come at the expense of shareholders, with increasing agency problem and financial constraints. The results complement prior research, suggesting that CSR activities are motivated by political affiliations of stakeholders (Hong and Kostovetsky 2012; Di Giuli and Kostovetsky 2014).

Finally, this study extends the literature that examines the determinants of financial constraints. I show that mandatory CSR reporting negatively affects stakeholder investment and lending decisions in emerging economies, suggesting that investors and lenders may have governance concerns with the non-financial information associated with mandatory CSR disclosure and are less willing to allocate scarce capital resources to firms with mandatory CSR disclosure requirements.

4.2 Institutional Background and Hypotheses Development

4.2.1 CSR reporting and institutional background in China

Pressing social and environmental problems such as the severe smog in Northern China have caused many concerns for the public and government. As an air quality measure, an annual average density of PM2.5 in the urban area of China is 65 $\mu g/m^3$, and is over 100 $\mu g/m^3$ in some cities in Northern China (People's Bank of China and United Nations Environment Programme 2015), far exceeding the benchmark of 25 $\mu g/m^3$ set in

air quality guidelines by the World Health Organization. Given that the economic development of China has excessively relied on the traditional high energy consuming industries that generate almost one-third of the GDP annually in the past, the economic losses caused by environmental pollutions account for approximately 3.05% of China's GDP (SEPA and NBS 2004). As a result of growing concerns of social and environmental problems and the global advocacy of carbon emission reduction, central and local governments have issued a number of CSR reporting guidelines to balance China's extensive economic growth with the social and environmental effects of that growth.[25]

Specifically, Article 5 of the amended China Company Law that was effective from 2006 explicitly states that firms should take social responsibility and accept the supervision of stakeholders, including the government and public. In 2006 SZSE issued *Guidelines on Social Responsibility of Companies Listed on the Shenzhen Stock Exchange*. In December 2008, the SSE and SZSE issued the *Notice for Better Preparing 2008 Annual Reports*, which mandates a subset of listed firms to issue CSR reports from the fiscal year 2008. In particular, the SSE enforces three types of its listed firms to make mandatory CSR reports: (1) firms included in the SSE Corporate Governance Section Index; (2) firms with shares listed overseas; and (3) firms in the financial sector. The SZSE requires firms that are included in the SZSE 100 Index to disclose CSR activities. Other listed firms are encouraged to provide CSR reports voluntarily.[26]

[25] The China Securities Regulatory Commission (CSRC) issued the first guideline about CSR in the Code of Corporate Governance for Listed Companies in 2002. In 2003, the Ministry of Environmental Protection of China announced the first regulation concerning corporate environmental disclosure that requires heavily polluting companies to publish environmental information and encourages voluntary disclosure. In 2008, the State-Owned Assets Supervision Administration Commission of the State Council (SASAC) required central-state-owned enterprises (CSOEs) to establish reporting systems for CSR fulfilment mechanisms and mandatory CSR information reporting. Number 4 of the Application Guidelines for Auditing of Enterprise Internal Controls released in 2010 is called "Social Responsibilities" regulating the responsibilities that companies should bear.

[26] Both SSE and SZSE have issued guidelines with respect to the content of the CSR reports, related supporting documents, etc. For example, the CSR report should include, but not be limited to, the following: (1) information on social responsibility activities related to stakeholders, environmental protection, and community relationships; (2) implementation and compliance with standards; and (3) implementation problems and related improvement plans.

4.2.2 Access to financing in China

The inability to obtain financing directly relates to firms' financial constraints, which refer to market frictions that prevent firms from funding all desired investments (Denis and Sibilkov 2010; Lamont et al. 2001). Based on the World Business Environment Survey of the investment climate, 75% of firms in China cite financial constraints as a major obstacle. This figure ranked China as the most financially constrained country among 80 countries where the survey was conducted (Claessens and Tzioumis 2006).

In China, firms rely on both formal and informal external financing in addition to internal channels to fund investments (Allen et al. 2005; Ayyagari et al. 2010). As a major part in the Chinese financial system, the formal financial sector consists of financial intermediaries who operate with state charters, including the banking sector, stock and corporate bond markets, and other types of formal financial lending channels (Dong et al. 2016). The informal financial system including self-fundraising, private money houses, and underground lending houses plays a complementary role to service the lower end of the market.

Lending by banks, especially by the four dominant state-owned banks, is the primary source of financing for Chinese firms (Bailey et al. 2011; La Porta et al. 2002). Financing through bond and equity markets is difficult in China due to capital market imperfections (Cull et al. 2015). Bond and equity markets in China are smaller and less sophisticated than those of developed economies regarding both market capitalization and total value traded as a percentage of the GDP (Allen et al. 2012).[27] The corporate bond

[27] For instance, compared to bank credit equivalent to 128% of China's GDP in 2012, bond sales constitute a small fraction of the total funds raised by firms, equivalent to approximately 41% of China's GDP in 2012 (Elliott and Yan 2013).

market in China is less than one-fourth of the size of the government bond market.[28] The stock market in China is largely a vehicle for privatization by the government rather than a market for raising capital by firms with growth opportunities (Wang et al. 2004).[29] Finally, firms are less likely to finance through other forms of formal financial institutions, such as factoring and leasing, that are relatively underdeveloped in China (Gregory and Tenev 2001).

While the formal financial system cannot provide sufficient funds for the growth of Chinese firms, informal financing systems, such as interpersonal lending and trade credit, private money houses, and underground lending houses, have becomes the main sources of funding (Allen et al. 2005). However, informal financing typically consists of small, unsecured, short-term loans, meaning if borrowers cannot repay loans from underground lending houses on time, they may suffer from coercion and violence (Ayyagari et al. 2010). Moreover, financing via private money houses or underground lending organizations results in high interest rates above the state-mandated interest rate ceilings and is not sanctioned by the People's Bank of China (Cheng and Degryse 2009). Given that the informal financial system is dependent on interpersonal relationships and lack legal security, it cannot provide sufficient funds for Chinese firms in cost-effective ways, and it increases financial risks.

4.2.3 CSR and financial constraints

Prior literature on the performance implications of CSR has presented different viewpoints: the stakeholder value maximization view and the shareholder expense view. The stakeholder value maximization view emphasizes that the effective management of

[28] Underdevelopment of the bond market in China can be attributed to excessive government regulation and the lack of institutional investors and high-quality credit rating agencies to help price the debt accurately (Ayyagari et al. 2010).

[29] The China Securities Regulation Committee monitors and regulates the stock exchanges and listed firms and has exercised its control to limit the size of initial public offerings. Moreover, the stock market in China is dominated by speculators and has not been effective in allocating economic resources given ineffective regulation and poor investor protection (Bruton and Ahlstrom 2003; Morck et al. 2000; Durnev et al. 2004).

stakeholder relationships can provide net benefits to firms. For example, CSR can have a positive effect by providing better access to finance (Cheng et al. 2014), attracting and retaining high quality employees (Greening and Turban 2000), and improving customer awareness (Servaes and Tamayo 2013). Using a voluntary CSR disclosure setting, Cheng et al. (2014) investigate whether CSR performance affects the ability to access financing and find that firms with better CSR performance face lower financial constraints. They attribute better access to financing to two mechanisms: (1) voluntary CSR disclosure practices and transparency reduce the information asymmetry, and (2) enhanced stakeholder engagement stemming from superior CSR performance lessens agency costs.

However, Bhandari and Javakhadze (2017) argue that the allocation of scarce corporate resources to CSR activities could siphon off valuable resources from profitable investment projects and find that CSR aggravates financial constraints to some extent. Their findings are consistent with the shareholder expense view that focuses on shareholder value maximization and contends that expending limited resources on CSR decreases the competitive position of a firm by unnecessarily increasing its costs (Bénabou and Tirole 2010; Friedman, 1970).

The literature presents mixed evidence on whether CSR affects the ability of firms to access financing in capital markets. Given that the Chinese government advocates CSR practices and has mandated CSR disclosure since 2008 and that China was among the group of countries that had the worst financing obstacles (Claessens and Tzioumis 2006), the study is motivated to investigate the effect of mandatory CSR disclosure on financial constraints in China.

4.2.4 Hypothesis development

Reflected by the shareholder expense view, the trade-off hypothesis (Preston and O'Bannon 1997) assumes that, by investing in CSR activities, firms incur unnecessary costs and consequently reduce their profitability, thus putting them at a disadvantage

when compared to firms that are less active in CSR. Consistent with the trade-off hypothesis, Bhandari and Javakhadze (2017) find that CSR activities distort firm-level resource allocation efficiency and negatively affect firm performance, restricting access to external financing. Mandatory CSR disclosure increases political and social pressures regarding a firm's CSR activities. Therefore, under mandatory CSR disclosure regulation, firms increase the CSR spending in charity, environmental protection, community development, and other CSR activities for political and social purposes rather than economic considerations ,especially for firms in anticipation of adverse stakeholder reactions and SOEs in China (Fiechter et al. 2018; Chen et al., 2018). Christensen et al. (2017) document that mandatory disclosure of mine-safety records in financial reports decreases mining-related citations and injuries. These social accomplishments may be achieved by diverting firm resources that otherwise could be deployed for identifying and funding profitable projects. Prior literature suggests that mandatory CSR disclosure potentially distorts the optimal allocation of corporate resources, reduces labor productivity (Christensen et al. 2017) and financial profitability (Chen et al. 2018), and thus restrains access to external financing.

Moreover, Friedman (1970) asserts that engaging in CSR that detracts from shareholders' wealth signals an agency problem and is socially irresponsible. He argues that managers pursue CSR for personal gain, such as advancing their own social, political, or career agendas, at the expense of shareholders. From the agency theory perspective, the benefits from engaging in CSR accrue to managers instead of shareholders (Jensen and Meckling 1976). Cheng et al. (2016) find that investing in CSR activities disproportionately raises costs by diverting firm resources to undertake CSR activities that benefit some stakeholders but do not necessarily add value to the firm. Similarly, Krüger (2015) find that investors react slightly negatively when positive news about a firm's CSR is revealed, implying that positive news about CSR is bad news for

shareholders from the agency theory perspective and that CSR primarily benefits managers who use CSR to boost their personal reputations among key stakeholders (e.g., government) and to advance their careers at the expense of shareholders.

In the Chinese context, the main agency problem is the risk of controlling shareholder expropriation of minority investors given the weak legal system and corporate governance mechanisms, prevalence of dominant/controlling shareholders, and high restriction of the trading of controlling shares (Guariglia and Yang 2016; Jiang et al. 2010).[30] As a result, controlling shareholders have incentives to obtain benefits through other channels as their ownership benefits of price appreciation are restricted. Lin et al. (2011) and Masulis et al. (2009) argue that dominant/controlling shareholders expropriate other investors by diverting corporate resources for private benefits. Guariglia and Yang (2016) indeed find that controlling shareholders in Chinese firms are likely to make self-interested and entrenched decisions and prefer to spend free cash flows on unprofitable projects. In addition, CSR is a legitimate and desired activity that the Chinese government has been actively signaling to firms (Marquis and Qian 2014). By investing in CSR activities, controlling shareholders of those firms with mandatory CSR reporting can create goodwill with government agencies and regulators and thus enjoy preferential treatment from the government. In the pursuit of these private benefits, the controlling shareholders may seek to commit firm resources to CSR activities that otherwise could be deployed for funding profitable projects, distorting the optimal allocation of corporate resources and limiting the access to external financing. Thus, I formulate the following hypothesis:

Hypothesis 1: Firms with mandatory CSR reporting face greater financial constraints subsequent to the CSR disclosure mandate

[30] All listed Chinese firms have a dominant/controlling shareholder by heritage and design of corporate ownership structure, and the trading of controlling shareholder shares in China is highly restricted (Jiang et al. 2010).

I explore political connections as a possible mechanism through which mandatory CSR reporting affects firms' financial constraints. Firms that are mandated to report CSR activities are expected to pursue CSR to meet the expectations of the government. The government has incentives to divert wealth to obtain social stability (Bai et al. 2005). Specifically, mandatory CSR reporting firms are under pressure from the government to achieve social or political objectives related to government policy, such as infrastructure development and resolution of the region's fiscal and unemployment challenges (See 2008). Those mandatory CSR reporting firms that are politically connected, can enjoy preferential treatment and support from the government, including greater access to debt financing and greater propensity to receive government subsidies (Lin et al. 2015; Li et al. 2006). They are also less likely to incur severe penalties when violating labor and environmental standards (Calomiris et al. 2010). In contrast, firms that are subject to the CSR mandate but without political connections do not gain these privileges but are under pressure to meet non-financial goals related to government policy at the expense of corporate profitability. I expect that mandatory CSR reporting firms without political connections confront greater financial constraints than mandatory CSR reporting firms that are politically connected subsequent to the CSR disclosure mandate. Therefore, I hypothesize that:

Hypothesis 2: Firms with mandatory CSR reporting without political connections face greater financial constraints than mandatory CSR reporting firms with political connections subsequent to the CSR disclosure mandate.

4.3 Research Design

4.3.1 Measuring financial constraints

Given that the legal and financial system and institutional background in China are different from developed economies, it is not suitable to use the KZ index advocated by Kaplan and Zingales (1997) or Lamont et al. (2001) directly to measure financial

constraints in China. Instead, following Kaplan and Zingales's (1997) approach and using the accounting information of listed firms in China over the period 1998–2013, I estimate an ordered logit regression relating the degree of financial constraints and use the regression coefficients from the model to construct *KZ*, an index measure of financial constraints that consist of a linear combination of five financial ratios.[31] The details of the procedure to construct this index measure of financial constraints and variable definitions are provided in Appendix 4.1:

$$KZ_{it} = -10.283 \times \frac{CF_{it}}{A_{it-1}} - 47.961 \times \frac{D_{it}}{A_{it-1}} - 6.203 \times \frac{C_{it}}{A_{it-1}} + 5.043 \times LEV_{it} + 0.598 \times Q_{it} + Firm\ FE + Year\ FE + \varepsilon_{it}$$

The result of estimating the ordered logit regression is provided in Appendix 4.2 and shows that all the coefficients are statistically significant with expected signs, consistent with Kaplan and Zingales (1997) and Lamont et al. (2001). The likelihood of being classified as financially constrained is significantly greater for firms with higher leverage and Tobin's Q, and the likelihood is significantly lower if firms have higher levels of cash flows, cash holdings, and dividend payouts.

4.3.2 Difference-in-differences analysis

I conduct a DiD analysis to alleviate the concern that other concurrent events may affect financial constraints but are not related to mandatory CSR reporting. The DiD research design compares the changes in financial constraints of the treatment firms with the changes of the benchmark firms subsequent to the CSR disclosure mandate. If mandatory CSR reporting is detrimental to firms' ability to access to finance, then firms that are mandated to disclose their CSR activities will face greater financial constraints than firms without mandatory CSR reporting. I estimate the following DiD regression to test the hypothesis (with firm and year subscripts omitted for parsimony):

$$KZ = \beta_0 + \beta_1 MD \times POST + \beta_2 MD + \beta_3 POST + \sum Controls + \varepsilon \quad (4.1)$$

[31] The period starts from 1998 because cash flow information for Chinese listed firms is available from 1998 in the CSMAR database.

where *KZ* is the financial constraint measure defined in Section 4.3.1, *MD* is an indicator variable that takes a value of 1 for firms that are mandated to report CSR activities and 0 for firms that do not make CSR disclosures and *POST* is a dummy variable that takes a value of 1 for 2009–2013 (the post-mandatory CSR disclosure period), and 0 for 2006–2008 (the pre-mandatory CSR disclosure period).

The interaction term, *MD*×*POST*, is the variable of interest, capturing the incremental effect of mandatory CSR reporting on the treatment firms' financial constraints relative to the benchmark firms subsequent to the CSR disclosure mandate. If the coefficient on *MD*×*POST* in Eq. (4.1), β_1, is estimated to be positive, it is consistent with the prediction that mandatory CSR disclosure is detrimental to firms' ability to access financing, and the hypothesis is supported. A negative coefficient on β_1 suggests a decrease of financial constraints after the CSR reporting mandate.

I include several control variables that prior literature finds to be associated with financial constraints (Hung et al. 2015; Lin et al. 2011; Rajan and Zingales 1998; Wang et al. 2016): firm size (*SIZE*), trade credit (*TC*), sales growth (*SG*), debt (*LOAN*), stock return (*RETURN*), audit quality (*BIG4*), government ownership (*GOV*), institutional ownership (*INSH*), and corporate donation (*DONATION*). Variables definitions are provided in Appendix 4.1. I also estimate an alternative regression model that includes firm and year fixed effects to control for the effect of time-invariant firm characteristics and the time effect on financial constraints.

4.3.3 Propensity score matching approach

I use the PSM approach to mitigate the concern that the treatment firms are not randomly selected or the results may be driven by other observable differences between the treatment and benchmark firms. Using data from the pre-mandatory CSR disclosure period, I first apply a first-stage logit regression to estimate the probability of being a treatment firm on firm characteristics: market value (*MV*), share turnover (*TURNOVER*),

stock return (*RETURN*), accounting profitability (*ROE*), government ownership (*GOV*), political connection (*CONNECT*), corporate donation (*DONATION*), and analyst following (*ANALYST*).[32] Variable definitions are provided in Appendix 4.1.

Panel A of Appendix 4.3 presents the result of the first-stage logit regression, with a Pseudo R^2 of 31.2%. All explanatory variables except *TURNOVER* and *RETURN* are significantly associated with the probability of being a treatment firm. The likelihood of being a treatment firm is positively related to the market value of equity, accounting profitability, state ownership, political connection, and analyst following, and negatively related to corporate donation. Next, I estimate the propensity score for each treatment firm using the predicted probabilities from the logit model, and match each treatment firm to the benchmark firms using the nearest neighbor matching algorithm (with replacement and within a caliper width of 0.2×standard error of propensity score). Panel B of Appendix 4.3 indicates that the differences between the treatment and benchmark firms are substantially narrower after matching with propensity scores. The PSM approach yields the final sample of 3,772 firm-year observations, including 1,909 treatment firm-year observations and 1,863 benchmark firm-year observations, and representing 513 distinct firms.

4.3.4 Testing parallel trend assumption

The success of the DiD analysis hinges on the parallel trend assumption, which posits that the outcomes for the treatment and benchmark firms are expected to change at the same rate if there were no treatment. It means that firms' financial constraints would have evolved in a similar trend in pretreatment across the treatment and benchmark firms in the absence of the mandatory CSR disclosure requirement in the setting.

[32] Following Chen et al. (2018), I select these firm characteristics in accordance with the guidelines of the SSE Corporate Governance Index and SZSE 100 Index.

Figure 4.1 shows the financial constraints of the treatment and benchmark firms over the period 2006–2013. Trends of financial constraints in the pre-CSR disclosure mandate period are similar for the treatment and benchmark firms. That is, the financial constraints of the treatment and benchmark firms change at the same rate over the period 2006–2008 before the CSR disclosure mandate, supporting the parallel trend assumption on which DiD estimation relies Figure 4.1. also indicates that trends of financial constraints in the post-CSR disclosure mandate period are different for the treatment and benchmark firms. I conduct the DiD analysis to explore the unintended economic consequences of mandatory CSR disclosure in China.

<Insert Figure 4.1 about here>

4.4 Sample and Empirical Results

4.4.1 Sample selection

Financial data are obtained from the CSMAR database for all A-share (local shares) listed firms on the SSE and SZSE for the period 2006–2013.[33] I exclude financial firms, firms listed after 2008, and B-share (foreign shares) listed firms as they are subject to different regulations and market trading mechanisms. In addition, I exclude firm-year observations that make voluntary CSR disclosures[34] or carry the "Special Treatment" or "Particular Transfer" tag.[35] Finally, I exclude firm-year observations that have missing values for necessary data for the variables used in the analysis or have non-positive shareholders' equity. The sample yields 9,062 firm-years. Among them, I identify 1,933 treatment firm-years and 7,129 benchmark firm-years.

[33] This sample period covers three years before and five years after the mandatory CSR disclosure regulation as the effect of mandated CSR disclosure on financial constraints might be lagged (Chen et al., 2018).

[34] Firms with voluntary CSR disclosures are excluded from the sample for the main test and included in the benchmark firms for the robustness tests.

[35] If a listed company has a negative return on equity (ROE) for two consecutive years, it will be tagged for special treatment (ST) and face multiple transaction restrictions imposed by the China Securities Regulatory Commission (CSRC). A ST company will be tagged as a particular transfer (PT) company if it suffers a third consecutive financial loss, and its shares can only be traded on Fridays. It may be delisted at the discretion of the securities exchanges.

4.4.2 Descriptive statistics

Table 4.1, Panel A reports the distribution of the sample firms disclosing CSR activities and Panel B presents the distribution of sample firms making mandatory or voluntary CSR disclosure by year. The number of CSR reporting firms ranges from a low of 23 firms in 2006 to a high of 653 firms in 2013. The number of both mandatory and voluntary CSR reporting firms increases toward the later years, reflecting the influence of the CSR disclosure mandate enacted in 2008 on firms' CSR reporting behaviour. The growth of the number of CSR reporting firms outpaces that of listed firms in China during the sample period.

<Insert Table 4.1 about here>

Table 4.2, Panel A presents the descriptive statistics of the variables used in the analyses for the PSM sample, and Panel B reports the mean values of the variables for the treatment and benchmark firms and their differences. All continuous variables are winsorized at the 1st and 99th percentiles of their distributions. Panel A shows that the financial constraint measure, *KZ*, has a mean value of 1.097 for the sample firms. On average, 8.9% of the sample firms are audited by big 4 accounting firms. Government and Institutional investors hold 17% and 20.3% of the total outstanding shares, respectively. The descriptive statistics for the sample are consistent with those reported (Chen et al. 2018; Wang and Qian 2011). Panel B further reports that the mean value of *KZ* is 0.943 for the treatment firms and 1.255 for the benchmark firms, indicating a considerable variation in financial constraints between treatment and benchmark firms.

<Insert Table 4.2 about here>

Panel C of Table 4.2 presents the Pearson correlations among the variables. Significantly positive correlations between *TC* and *KZ* and between *LOAN* and *KZ* indicate that firms with higher levels of trade credit and debt are more financially constrained. Additionally, *BIG4*, *GOV*, *INSH*, and *DONATION* are significantly

negatively correlated with *KZ*, suggesting that firms audited by big 4 accounting firms, those with higher levels of government and institutional ownerships, and those making more donations face lower financial constraints.

4.4.3 Regression results

The results for estimating Eq. (4.1) using the PSM sample are presented in Table 4.3 of Panel A. In Column (1), a significantly negative coefficient on *MD* indicates that the treatment firms face lower financial constraints than the benchmark firms before the CSR disclosure mandate shock. An insignificant coefficient on *POST* suggests that the benchmark firms do not experience a change in financial constraints subsequent to the CSR disclosure mandate. The variable of interest, *MD*×*POST*, has a significantly positive coefficient, suggesting that mandatory CSR reporting firms experience an increase in financial constraints subsequent to the CSR disclosure shock relative to firms without CSR reporting. The result supports Hypothesis 1. The estimated effect of mandatory CSR reporting on financial constraints appears to be economically significant, with an increase of financial constraints of 38% for mandatory CSR reporting firms.[36] Column (2) reports the results of the alternative specification that includes firm and year fixed effects. As there is no within-firm variation of *MD* and no within-year variation of *POST*, I remove *MD* and *POST* from this specification. I obtain the results consistent with that reported in Column (1). The control variables such as *SIZE*, *TC*, *SG*, *LOAN*, *GOV*, *INSH*, and *DONATION* show expected signs and are generally highly significant across both columns, consistent with the prior literature.

<Insert Table 4.3 about here>

I use alternative measures of financial constraints to provide further validity to the findings. In particular, I follow Hadlock and Pierce (2010) to construct the *SA* Index. I

[36] Note that 38% = 0.359/0.943, where 0.359 is the estimated coefficient on *MD*×*POST* in Column (1) of Table 4.3, Panel A, and 0.943 is the mean value of *KZ* for the treatment firms in Panel B of Table 4.2.

also examine declines in cash flow (*CF*), investment (*IVT*) and cash dividends (*DIV*) for mandatory CSR reporting firms after the CSR disclosure shock relative to firms without CSR reporting given that firms that are financially constrained tend to experience drops in cash flow, investment and cash dividends (Chen and Wang 2012; Bodnaruk et al. 2015). The results reported in Panel B of Table 4.3 indicate that the inferences remain unchanged with these alternative measures of financial constraints.

To gage the sensitivity of the results, I re-run the analyses using three alternative samples: (1) a balanced sample that requires a firm to appear at least one year in the pre-period and one year in the post-period, (2) a modified sample that includes both the control PSM firms and firms making voluntary CSR disclosure, and (3) the full sample. I report the results in Table 4.3, Panels C and D. The results show that the coefficients on *MD*×*POST* continue to be significantly positive, suggesting that the findings are robust to the use of alternative samples.

I also run several tests for additional robustness check and report the results in Panel D of Table 4.3. A concern of the analysis is that the increase of financial constraints of the treatment firms may simply reflect a time trend. First, I perform a placebo test by assigning 2007 as the pseudo CSR disclosure mandate year, classifying 2006 as the pre-mandatory CSR disclosure year and 2007–2008 as the post-mandatory CSR disclosure period. As reported in Column (1), an insignificant coefficient on *MD*×*POST* implies that the treatment firms do not experience a significant increase in financial constraints in the period 2007–2008. I rule out the alternative explanation that the increase of financial constraints for mandatory CSR reporting firms is driven by a time trend. Next, I exclude 2008, the CSR disclosure mandate year, from the sample period and re-run the test. Column (2) shows that the coefficient on *MD*×*POST* continues to be significantly positive, suggesting that the increase of financial constraints for the treatment firms takes place after the CSR disclosure mandate. Taken together, the results in Table 4.3 suggest

that mandatory CSR reporting firms face greater financial constraints after disclosing mandatory CSR reports.

4.4.4 Political connections and mandatory CSR reporting

To test Hypothesis 2, I define a firm as politically connected if either the CEO or chairman of the board currently serves or formerly served in the government, or as a deputy of the People's Congress, or the People's Political Consultative Conference, following Fan et al. (2007) and Liu et al. (2013). I partition the sample firms into two sub-samples based on whether or not firms are politically connected. To compare the effect of mandatory CSR disclosure on financial constraints between these sub-samples, I estimate Eq. (4.1) using two sub-samples after controlling for the firm and year fixed effects.

The empirical results are reported in Table 4.4. The coefficient on *MD*×*POST* is significantly positive in Column (1) but insignificant in Column (2). The result is consistent with the prediction that the effect of mandatory CSR reporting on financial constraints is pronounced for firms without political connectionsbut there is no difference in financial constraints between the treatment and control groups of firms with political connections. However, the result of the Chow test is insignificant indicating that the mandatory CSR disclosure adoption does not have a greater effect on financial constraints of firms without political connections than firms with political connections. Therefore mandatory CSR reporting increases the agency costs of firms without political connections, thus increasing financial constraints, while firms with political connections can acquire resources from the government and eliminate agency costs.

<Insert Table 4.4 about here>

4.5 Additional Analysis

4.5.1 Mediating effect of agency conflicts

I further explore the channels through which mandatory CSR reporting affects financial constraints. An influential element is agency cost. There are two types of agency problems: the one between managers and shareholders and the other between controlling shareholders and minority shareholders. Unlike U.S. firms with dispersed ownership, firms outside the U.S. have concentrated ownership, like most European and Asian companies. These firms usually have large shareholders. The controlling shareholders are likely to expropriate resources from minority shareholders, referred to as "tunneling," by making self-interested and entrenched decisions (Guariglia and Yang 2016; Jiang et al. 2010). Moreover, given the weak legal protection for minority shareholders, the prevalent agency problem in China is the conflict between controlling shareholders and minority shareholders (Jiang et al. 2010; Lin et al. 2013; Guariglia and Yang 2016).

I argue that the agency conflict between controlling shareholders and minor shareholders affect the relation between mandatory CSR reporting and financial constraints as follows: as mandatory CSR reporting in China deteriorates shareholder values (Chen et al. 2018), controlling shareholders are motivated to tunneling from public firms for self-interest. The problem of tunnelling leads to poor financial performance and a high risk of financial distress and bankruptcy (Lin et al. 2013; Jiang et al. 2010). Therefore, banks are would impose strict monitoring on the firms with controlling shareholders. In turn, firms controlled by large shareholders are less likely to choose bank financing as a way of avoiding bank scrutiny (Lin et al. 2013). However, bank loans are the primary method of external financing for Chinese firms. suggesting that tunneling firms are likely to have financial constraints. In summary, mandatory CSR reporting induces tunneling behaviors of controlling shareholders, resulting in rigorous scrutiny

from banks and severe financial constraints. I predict that agency conflicts play mediation roles in the relation between mandatory CSR reporting and financial constraints.

I test the mediating effects of the two types of agency conflicts, though conflicts between controlling shareholders and minority shareholders are the major problems in China. Following Ferrell et al. (2016), I use free cash flows (*FCF*), cash holdings (*CASHHD*) and dividend payout ratios (*DIVPAYOUT*) to measure the conflicts between managers and shareholders. In China, the most common instrument of tunneling is intercorporate loans, which are the borrowing of company assets or cash, reported by the accounting item "other receivables" (Jiang et al. 2010; Qian and Yeung 2015). I measure the agency conflicts between controlling shareholders and minority shareholders using other receivables scaled by total assets (*ORECTA*). A higher value of *ORECTA* implies a higher level of expropriation of controlling shareholders.

To test the mediation effects of agency conflicts, I followed Baron and Kenny's (1986) mediating procedures. First, I examine whether independent variables are significantly related to the mediators as proxies for two types of agency conflicts. I regress mandatory CSR reporting with the mediators including all the control variables in the main DiD model. Panel A of Table 4.5 shows the results that the mediators (*FCF*, *CASHHD*, and *DIVPAYOUT*), representing the first type of agency problem, are not significant, indicating that the first type of agency conflict is not a validated mediating channel in which mandatory CSR reporting influences financial constraints. However, the mediator, other receivables (*ORECTA*), representing the second type of agency problem, is positively significant indicating that *ORECTA* can be an effective channel. Second, *ORECTA* is positively related to *KZ*, which means mediators are related to the dependent variable. Furthermore, to test mediation effects, I add *ORECTA* in the Eq. (4.1). Panel B of Table 4.5 shows the results that *ORECTA* is significantly positively related to *KZ* and the interaction *MD*×*POST* is also positively related to *KZ*, indicating the indirect

mediation effects of the second type of agency conflicts on the relation between mandatory CSR reporting and financial constraints. That is, the effects of mandatory CSR reporting on financial constraints are partially transformed through the second type of agency problem.

<Insert Table 4.5 about here>

In addition, as mandatory CSR reporting has negative effects on financial performance and will further influence financial constraints, I also examine the mediation effects of financial performance (*ROA*) and consider the effects of controlling shareholder tunneling and *ROA* together. Column 5 in Panel A of Table 4.5 shows the result of the negative relation between mandatory CSR reporting and *ROA* and Panel C of Table 4.2 shows that *ROA* is negatively related to financial constraints. In Panel B of Table 4.5, Column (2) shows the indirect mediation effects of *ROA* and Column (3) shows that the effects of mandatory CSR reporting on financial constraints are primarily transformed by the agency conflicts between controlling shareholders and minority shareholders. Based on the mediation effects tests, I find that mandatory CSR reporting increases the agency conflicts between the controlling shareholders and minority shareholders, but not affect the agency conflicts between management and shareholders.

4.5.2 Additional analysis with CSR performance of firms

The effects of mandatory CSR reporting on financial constraints not only rely on the implication of government regulations but also on the implementation credibility. The implementation credibility refers to the real CSR performance of firms. Although mandatory CSR reporting in China does not require firms to spend in CSR investment, firms experience political and social pressures regarding on CSR under the mandatory regulation and might increase CSR spending, which would furthermore reduce the investment efficiency of the mandated CSR reporting firms (Chen et al. 2018; Christensen

et al. 2017). Therefore, mandatory CSR disclosure increases financial constraints especially for firms with better CSR performance.

I use the CSR Index and CSR score to measure CSR performance. CSR Index is calculated by the CSR content data from CSMAR database following Wang et al. (2016). The CSMAR database classifies the contents of CSR disclosure into ten categories: shareholder relations, creditor relations, employee relations, supplier relations, customer relations, environmental protection, public relations and charities, CSR policies, work conditions, and deficiency in CSR performance. I define dummy variables for each category based on whether the CSR report discloses information falling in that category. If it does, the respective dummy variable is equal to 1 and is 0 otherwise. I calculate the sum of the ten categories, named the CSR Index. To identify the disclosure quality of CSR reports, I divide the sample into two groups: a high CSR Index group and low CSR Index group. The control firms are the same in the two groups, which are the firms without CSR disclosure in the PSM sample of the main test following Hung et al. (2015).

Column (1) and (2) Table 4.6 reports the changes of financial constraints of the high CSR Index group and the low CSR Index group around the mandate compared with the control firms respectively. Consistent with the prediction, the effect of mandatory CSR reporting on financial constraints is only significant and more pronounced for firms with a high CSR Index, but is not significant for firms that do not have a low CSR Index. A chow test for the difference between high CSR Index group and low CSR Index group is statistically significant for Column (1) and (2). The results support that firms with better CSR performance experience higher financial constraints than those firms in the control group, but there is no difference in financial constraints for firms with low CSR Index.

In Column (3) and (4) of table 4.6, I provide an additional result of the effect of CSR performance on the relationship between mandatory CSR reporting and financial constraints. I split the sample into high CSR performance group and low CSR

performance group based on CSR score from RKS CSR rating database. RKS is a third independent agency that rank CSR performance of Chinese public firms by four categories: (1) content score, an evaluation score based on specific CSR metrics for economic, environmental, and social performance, (2) macrocosm score, an evaluation score based on CSR strategic effectiveness, stakeholder participation, and information comparability, (3) technique score, an evaluation score based on clarity, consistency, and presentation formats, (4) industry score, an evaluation score on industrial characteristics of relating to CSR. I use the overall score measure firms' CSR performance.

I perform the analysis conditional on firms' CSR performance by classifying a treatment firm into a high CSR performance group if its CSR performance score is higher than the sample median and into a low CSR performance group otherwise. Since the score is not applicable to control firms, I first include the control group in both partitions and reports the estimated results of DiD model in Column (3) and (4). I find that the coefficients on *MD*×*POST* are significantly positive in both high CSR performance score group and low CSR performance score group. Furthermore, there is no significant difference between the coefficients on *MD*×*POST* between high CSR performance score group and low CSR performance score group.

<Insert Table 4.6 about here>

4.5.3 Effect of voluntary CSR reporting on financial constraints

Similar to the study conducted by Cheng et al. (2014), which examines the effects of voluntary CSR reports on financial constraints, I also finally investigate whether the effects exist in the Chinese context with the expectation of more deeply understanding the effects of mandatory regulations. I re-run Eq. (4.1), replacing *MD* with *VD*, which equals to 1 if the firm discloses voluntary CSR reports in 2008 and 0 if the firm does not issue any CSR report from 2006 to 2013. Table 4.7 shows the results in all three models with only *VD*, *POST*, and *VD*×*POST* included Model 1, *VD*×*POST* and control variables

in Model 2 with firm and year fixed effects and *VD, POST, VD×POST* and other control variables in the Model 3. All three models have clustered at the firm level.

Table 4.7 presents the relationship between voluntary CSR reports and financial constraints, which is insignificant in the three models. The results indicate that no differences exist between firms with voluntary CSR disclosure and firms without CSR reports. In general, the results in Table 4.7 indicate that voluntary CSR reports do not have the same effects in China as the CSR reports in developed countries. The reasons could be that CSR reporting in China is a symbol with no substance at present, and the voluntary CSR does not attract enough public attention (Marquis and Qian 2014).

<Insert Table 4.7 about here>

4.6 Conclusions

The SSE and SZSE in China have required a subset of firms to disclose CSR reports since 2008. Using this unique exogenous regulatory shock, I examine the effect of mandatory CSR disclosure on financial constraints in China. I employ the DiD model to control macro conditions that influence financial constraints but not mandatory CSR disclosure. I also combine the DiD design with the PSM procedure, which matches the treatment firms to comparable control firms to mitigate the concern that the treatment group is not random.

I find that firms with mandatory CSR reporting experienced a subsequent increase in financial constraints following the 2008 disclosure mandate, and political connections can be helpful to reduce the negative effect of mandatory CSR reporting on financial constraints. In the additional analysis, I investigate the influence of CSR performance on the relationship between mandatory CSR disclosure and financial constraints, and find that the effect of mandatory CSR reporting on financial constraints is more pronounced form firm with better CSR performance.

The findings can aid policymakers to better understand the consequences of mandatory CSR reporting. As government and stock exchanges move to incorporate CSR into disclosure requirements worldwide, this study suggests that CSR activities that can be valuable for seeking political connections in emerging economies come at the expense of shareholders and with increasing agency problems and financial constraints.

Reference

Allen, F., J. Qian, and M. Qian. 2005. Law, finance, and economic growth in China. *Journal of Financial Economics* 77 (1):57-116.

Allen, F., J. Q. J. Qian, C. Zhang, and M. Zhao. 2012. China's Financial System: Opportunities and Challenges. *National Bureau of Economic Research Working Paper Series* No. 17828.

Ayyagari, M., A. Demirguc-Kunt, and V. Maksimovic. 2010. Formal versus Informal Finance: Evidence from China. *Review of Financial Studies* 23 (8):3048-3097.

Bai, C., J. Lu, and Z. Tao. 2005. An Empirical Study on the Access to Bank Loans by Private Enterprises in China. *China Economic Quarterly* 4 (3):18.

Bailey, W., W. Huang, and Z. Yang. 2011. Bank Loans with Chinese Characteristics: Some Evidence on Inside Debt in a State-Controlled Banking System. *Journal of Financial and Quantitative Analysis* 46 (06):1795-1830.

Barnea, A., and A. Rubin. 2010. Corporate Social Responsibility as a Conflict Between Shareholders. *Journal of Business Ethics* 97 (1):71-86.

Baron, R. M., and D. A. Kenny. 1986. The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology* 51 (6):1173-1182.

Bartels, W., T. Fogelberg, A. Hoballah, and C. T. van der Lugt. 2016. Carrots and sticks: Global trends in sustainability reporting regulation and policy. UNEP, GRI, KPMG, and the Center for Corporate Governance in Africa. Available at: https://www.globalreporting.org/resourcelibrary/Carrots%20and%20Sticks-2016.pdf. Accessed: Jan 23, 2019

Bhandari, A., and D. Javakhadze. 2017. Corporate social responsibility and capital allocation efficiency. *Journal of Corporate Finance* 43:354-377.

Bodnaruk, A., T. Loughran, and B. McDonald. 2015. Using 10-K Text to Gauge Financial Constraints. *Journal of Financial and Quantitative Analysis* 50 (04):623-646.

Bruton, G. D., and D. Ahlstrom. 2003. An institutional view of China's venture capital industry. *Journal of Business Venturing* 18 (2):233-259.

Calomiris, C. W., R. Fisman, and Y. X. Wang. 2010. Profiting from government stakes in a command economy: Evidence from Chinese asset sales. *Journal of Financial Economics* 96 (3):399-412.

Chen, S.-S., and Y. Wang. 2012. Financial constraints and share repurchases. *Journal of Financial Economics* 105 (2):311-331.

Chen, Y.-C., M. Hung, and Y. Wang. 2018. The effect of mandatory CSR disclosure on firm profitability and social externalities: Evidence from China. *Journal of Accounting and Economics* 65 (1):169-190.

Cheng, B. T., I. Ioannou, and G. Serafeim. 2014. Corporate Social Responsibility and Access to Finance. *Strategic Management Journal* 35 (1):1-23.

Cheng, I.-H., H. Hong, and K. Shue. 2016. Do Managers Do Good With Other People's Money? *SSRN*:https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1962120.

Cheng, X., and H. Degryse. 2009. The Impact of Bank and Non-Bank Financial Institutions on Local Economic Growth in China. *Journal of Financial Services Research* 37 (2-3):179-199.

Christensen, H. B., E. Floyd, L. Y. Liu, and M. Maffett. 2017. The Real Effects of Mandated Information on Social Responsibility in Financial Reports: Evidence from Mine-Safety Records. *Journal of Accounting and Economics*.

Claessens, S., and K. Tzioumis. 2006. Measuring firms' access to finance. *working paper* http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.575.3655&rep=rep1&type=pdf.

Cull, R., W. Li, B. Sun, and L. C. Xu. 2015. Government Connections And Financial Constraints: Evidence From A Large Representative Sample Of Chinese Firms. *Journal of Corporate Finance* 32:271-294.

Denis, D. J., and V. Sibilkov. 2010. Financial Constraints, Investment, and the Value of Cash Holdings. *Review of Financial Studies* 23 (1):247-269.

Di Giuli, A., and L. Kostovetsky. 2014. Are red or blue companies more likely to go green? Politics and corporate social responsibility. *Journal of Financial Economics* 111 (1):158-180.

Dong, Y., Z. Liu, Z. Shen, and Q. Sun. 2016. Does State Ownership Really Matter in Determining Access to Bank Loans? Evidence from China's Partial Privatization. *Pacific-Basin Finance Journal* 40:73-85.

Durnev, A., K. Li, R. Morck, and B. Yeung. 2004. Capital markets and capital allocation: Implications for economies in transition*. *The Economics of Transition* 12 (4):593-634.

Elliott, D. J., and K. Yan. 2013. The Chinese Financial System: An Introduction and Overview. *research report by Brookings* https://www.brookings.edu/wp-content/uploads/2016/06/chinese-financial-system-elliott-yan.pdf.

Fan, J., T. Wong, and T. Zhang. 2007. Politically connected CEOs, corporate governance, and Post-IPO performance of China's newly partially privatized firms☆. *Journal of Financial Economics* 84 (2):330-357.

Ferrell, A., H. Liang, and L. Renneboog. 2016. Socially responsible firms. *Journal of Financial Economics* 122 (3):585-606.

Fiechter, P., J. M. Hitz, and N. Lehmann. 2018. Real effects in anticipation of mandatory disclosures: Evidence from the European Union's CSR directive (Novermber 27, 2018). *SSRN*. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3033883.

Friedman, M. 1970. The Social Responsibility of Business is to Increase Its Profits. *New York Times*, September 13, 122-126.

Greening, D. W., and D. B. Turban. 2000. Corporate Social Performance As a Competitive Advantage in Attracting a Quality Workforce. *Business & Society* 39 (3):254-280.

Gregory, N., S. Tenev. 2001. The Financing of Private Enterprise in China. *Finance & Development* 38(1): https://www.imf.org/external/pubs/ft/fandd/2001/03/gregory.htm. Accessed: Jan 23, 2019

Grewal, J., C. Hauptmann, and G. Serafeim. 2017. Material Sustainability Information and Stock Price Informativeness. *SSRN*:https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2966144.

Guariglia, A., and J. Yang. 2016. A balancing act: Managing financial constraints and agency costs to minimize investment inefficiency in the Chinese market. *Journal of Corporate Finance* 36:111-130.

Hadlock, C. J., and J. R. Pierce. 2010. New Evidence on Measuring Financial Constraints: Moving Beyond the KZ Index. *Review of Financial Studies* 23 (5):1909-1940.

Hong, H., and L. Kostovetsky. 2012. Red and blue investing: Values and finance. *Journal of Financial Economics* 103 (1):1-19.

Hung, M., J. Shi, and Y. Wang. 2015. Mandatory CSR Disclosure and Information Asymmetry: Evidence from a Quasi-natural Experiment in China. *working paper*:http://www-bcf.usc.edu/~yongxiaw/CSR_HSW_final.pdf.

Ioannou, I., and G. Serafeim. 2016. The Consequences of Mandatory Corporate Sustainability Reporting: Evidence from Four Countries. *working paper*:https://papers.ssrn.com/soL3/papers.cfm?abstract_id=1799589.

Jensen, M. C., and W. H. Meckling. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3 (4):305-360.

Jiang, G., C. M. C. Lee, and H. Yue. 2010. Tunneling through intercorporate loans: The China experience☆. *Journal of Financial Economics* 98 (1):1-20.

Kaplan, S. N., and L. Zingales. 1997. Do investment-cash flow sensitivities provide useful measures of financing constraints? *Quarterly Journal of Economics* 112 (1):169-215.

Krüger, P. 2015. Corporate goodness and shareholder wealth. *Journal of Financial Economics* 115 (2):304-329.

La Porta, R., F. Lopez-De-Silanes, and A. Shleifer. 2002. Government Ownership of Banks. *The Journal of Finance* 57 (1):265-301.

Lamont, O., C. Polk, and J. Saa-Requejo. 2001. Financial constraints and stock returns. *Review of Financial Studies* 14 (2):529-554.

Li, H., L. Meng, and J. Zhang. 2006. Why Do Entrepreneurs Enter Politics? Evidence from China. *Economic Inquiry* 44 (3):559-578.

Lin, C., Y. Ma, P. Malatesta, and Y. Xuan. 2013. Corporate ownership structure and the choice between bank debt and public debt. *Journal of Financial Economics* 109 (2):517-534.

Lin, C., Y. Ma, and Y. Xuan. 2011. Ownership structure and financial constraints: Evidence from a structural estimation. *Journal of Financial Economics* 102 (2):416-431.

Lin, K. J., J. Tan, L. Zhao, and K. Karim. 2015. In the name of charity: Political connections and strategic corporate social responsibility in a transition economy. *Journal of Corporate Finance* 32:327-346.

Liu, Q., J. Tang, and G. G. Tian. 2013. Does political capital create value in the IPO market? Evidence from China. *Journal of Corporate Finance* 23:395-413.

Marquis, C., and C. Qian. 2014. Corporate Social Responsibility Reporting in China: Symbol or Substance? *Organization Science* 25 (1):127-148.

Masulis, R. W., C. Wang, and F. E. I. Xie. 2009. Agency Problems at Dual-Class Companies. *The Journal of Finance* 64 (4):1697-1727.

Morck, R., B. Yeung, and W. Yu. 2000. The Information Content of Stock Markets: Why do Emerging Markets Have Synchronous Stock Price Movements? *Journal of Financial Economics* 58 (1-2):215-260.

People's Bank of China and United Nations Environment Programme. 2015. Establishing China's Green Financial System April. Avaliable at: https://wedocs.unep.org/bitstream/handle/20.500.11822/8459/Establishing_China%E2%80%99s_Green_F_1.pdf?sequence=5&isAllowed=y. Accessed: Jan 23, 2019

Preston, L. E., and D. P. O'Bannon. 1997. The Corporate Social-Financial Performance Relationship. *Business & Society* 36 (4):419-429.

Qian, M., and B. Y. Yeung. 2015. Bank financing and corporate governance. *Journal of Corporate Finance* 32:258-270.

Rajan, R. G., and L. Zingales. 1998. Financial dependence and growth. *American Economic Review* 88 (3):559-586.

See, G. 2008. Harmonious Society and Chinese CSR: Is There Really a Link? *Journal of Business Ethics* 89 (1):1-22.

Servaes, H., and A. Tamayo. 2013. The Impact of Corporate Social Responsibility on Firm Value: The Role of Customer Awareness. *Management Science* 59 (5):1045-1061.

State Environmental Protection Agency of China (SEPA) and National Bureau of Statistics of China (NBS). 2006. China Green National Accounting Study Report 2004 (Public Version). Available at: http://www.gov.cn/english/2006-09/11/content_384596.html. Accessed: Jan 23, 2019

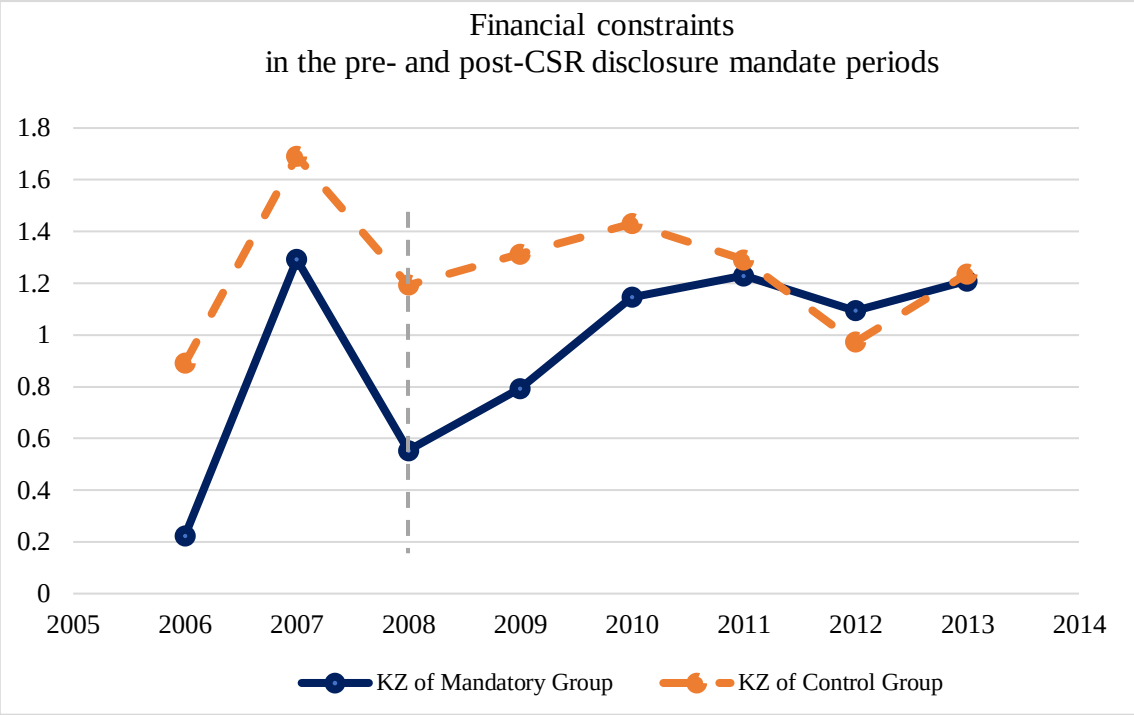
Wang, H., and C. Qian. 2011. Corporate Philanthropy and Corporate Financial Performance: The Roles of Stakeholder Response and Political Access. *Academy of Management Journal* 54 (6):1159-1181.

Wang, X., F. Cao, and K. Ye. 2016. Mandatory Corporate Social Responsibility (CSR) Reporting and Financial Reporting Quality: Evidence from a Quasi-Natural Experiment. *Journal of Business Ethics* 152 (1):253-274.

Wang, X., L. C. Xu, and T. Zhu. 2004. State-owned enterprises going public The case of China. *The Economics of Transition* 12 (3):467-487.

Figure 4.1

Testing the parallel trend assumption



Notes: Figure 4.1 shows that the trends of financial constraints in the pre-CSR disclosure mandate period 2006–2008 are similar for the treatment and benchmark firms, supporting the parallel trend assumption that the difference-in-differences estimation relies on. The trends are different in the post-CSR disclosure mandate period 2009–2013.

Table 4.1

Distribution of mandatory vs. voluntary CSR reporting firms.

Panel A Distribution of sample firms disclosing CSR activities			
Year	CSR reporting firms	Total A share (local shares) listed firms	%
2006	23	1,592	1%
2007	46	1,707	3%
2008	458	1,909	24%
2009	473	1,984	24%
2010	523	1,973	27%
2011	570	2,324	25%
2012	619	2,463	25%
2013	653	2,526	26%
Total	3,365		

Panel B Distribution of sample firms making mandatory or voluntary CSR disclosure				
Year	Firms with mandatory CSR reporting		Firms with voluntary CSR reporting	
	N	*%*	*N*	*%*
2006	0	0%	23	100%
2007	0	0%	46	100%
2008	346	76%	112	24%
2009	363	77%	110	23%
2010	371	71%	152	29%
2011	393	69%	177	31%
2012	399	64%	220	36%
2013	418	64%	235	36%
Total	2,290	68%	1,075	32%

Notes: Panel A of this table reports the distribution of sample firms disclosing CSR activities by year. Panel B reports the distribution of sample firms making mandatory or voluntary CSR disclosure.

Table 4.2

Descriptive statistics and correlation matrix.

Panel A Descriptive statistics						
Variable	*N*	*Mean*	*Median*	*Std. Dev*	*P25*	*P75*
KZ	3,772	1.097	1.440	2.126	0.010	2.520
SIZE	3,772	22.415	22.263	1.220	21.534	23.163
TC	3,772	0.180	0.149	0.129	0.080	0.250
SG	3,772	0.378	0.092	1.357	-0.059	0.342
LOAN	3,772	0.213	0.204	0.146	0.094	0.311
RETURN	3,772	0.466	0.14	1.011	-0.254	0.965
BIG4	3,772	0.089	0.000	0.284	0.000	0.000
GOV	3,772	0.170	0.000	0.222	0.000	0.357
INSH	3,772	0.203	0.148	0.190	0.048	0.309
DONATION	3,772	0.020	0.004	0.041	0.000	0.020

Panel B Mean value of treatment vs. benchmark firms					
	Treatment		Benchmark		Difference
Variable	*N*	*Mean*	*N*	*Mean*	
KZ	1,909	0.943	1,863	1.255	0.312***
SIZE	1,909	22.831	1,863	21.988	–0.842***
TC	1,909	0.184	1,863	0.176	–0.008*
SG	1,909	0.355	1,863	0.401	0.047
LOAN	1,909	0.209	1,863	0.216	0.007
RETURN	1,909	0.466	1,863	0.466	–0.000
BIG4	1,909	0.142	1,863	0.033	–0.109***
GOV	1,909	0.18	1,863	0.16	–0.021***
INSH	1,909	0.214	1,863	0.192	–0.022***
DONATION	1,909	0.018	1,863	0.022	0.003**

Table 4.2 – Continued

Panel C Pearson correlation matrix										
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)	*KZ*									
(2)	*SIZE*	0.035**								
(3)	*TC*	0.114***	0.112***							
(4)	*SG*	0.019	0.030*	0.072***						
(5)	*LOAN*	0.498***	0.178***	–0.262***	–0.007					
(6)	*RETURN*	0.004	–0.150***	0.035**	0.059***	–0.008				
(7)	*BIG4*	–0.046***	0.361***	–0.012	–0.016	–0.059***	–0.042***			
(8)	*GOV*	–0.088***	0.019	–0.021	0.003	0.033**	0.207***	0.034**		
(9)	*INSH*	–0.103***	0.058***	–0.025	0.003	–0.048***	0.121***	0.076***	0.026	
(10)	*DONATION*	–0.171***	–0.062***	0.002	–0.031*	–0.116***	–0.087***	–0.047***	–0.060***	0.072***

Notes: Panel A of this table presents the descriptive statistics of the variables used in the analyses for the PSM sample. Panel B reports the mean values of the variables and their differences between the treatment and benchmark firms. Panel C presents the Pearson correlation matrix for the PSM sample. All continuous variables are winsorized at the 1st and 99th percentiles of their distributions. Variable definitions are provided in Appendix 4.1. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 4.3

Effect of mandatory CSR reporting on financial constraints

Panel A Regression results, PSM sample		
	(1)	(2)
MD×POST	**0.359*** (0.122)**	**0.379*** (0.125)**
MD	–0.350*** (0.127)	
POST	0.038 (0.094)	
SIZE	–0.195*** (0.054)	–0.665*** (0.129)
TC	2.649*** (0.501)	1.350* (0.801)
SG	–0.090** (0.038)	–0.111*** (0.037)
LOAN	7.396*** (0.333)	6.953*** (0.427)
RETURN	0.029 (0.030)	–0.074 (0.052)
BIG4	0.223 (0.157)	0.136 (0.226)
GOV	–0.739*** (0.200)	–0.570** (0.239)
INSH	–0.333* (0.184)	–0.391* (0.206)
DONATION	–2.464*** (0.882)	–1.774* (0.985)
Constant	4.279*** (1.160)	13.669*** (2.853)
Observations	3,772	3,772
Adjusted R^2	0.124	0.181
Industry FE	Yes	No
Year FE	No	Yes
Firm FE	No	Yes

Table 4.3 – Continued

Panel B Alternative dependent variables, PSM sample								
	SA	*SA*	*CF*	*CF*	*IVT*	*IVT*	*DIV*	*DIV*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MD×POST	**0.044*** (0.006)**	**0.033*** (0.005)**	**-0.011** (0.005)**	**-0.010** (0.005)**	**-0.011*** (0.004)**	**-0.011*** (0.004)**	**-0.004*** (0.001)**	**-0.004*** (0.001)**
MD	0.053*** (0.015)		0.011** (0.005)		0.012*** (0.004)		0.005*** (0.001)	
POST	-0.130*** (0.004)		0.003 (0.004)		-0.004 (0.003)		0.001 (0.001)	
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,772	3,772	3,772	3,772	3,772	3,772	3,772	3,772
Adjusted R^2	0.686	0.843	0.070	0.112	0.037	0.057	0.094	0.095
Industry FE	Yes	No	Yes	No	Yes	No	Yes	No
Year FE	No	Yes	No	Yes	No	Yes	No	Yes
Firm FE	No	Yes	No	Yes	No	Yes	No	Yes

Table 4.3 – Continued

Panel C Alternative samples			
	Balanced sample	Benchmarking with PSM firms and voluntary CSR reporting firms	Full sample
	(1)	(2)	(3)
MD×POST	**0.343*** (0.123)**	**0.329*** (0.108)**	**0.432*** (0.102)**
MD	–0.311** (0.128)	–0.085 (0.113)	–0.067 (0.111)
POST	0.049 (0.095)	0.100 (0.074)	0.196*** (0.053)
Control variables	Yes	Yes	Yes
Observations	3,748	5,788	9,062
Adjusted R^2	0.125	0.14	0.133
Industry FE	Yes	Yes	Yes
Year FE	No	No	No
Firm FE	No	No	No

Panel D Additional robust checks		
	Placebo Test with pseudo CSR disclosure mandate year being 2007, using sample period 2006–2008	Exclude 2008
	(1)	(2)
MD×POST	**–0.076 (0.150)**	**0.315** (0.142)**
MD	–0.360** (0.143)	–0.335** (0.142)
POST	0.540*** (0.150)	–0.020 (0.113)
Control variables	Yes	Yes
Observations	1,419	3,284
Adjusted R^2	0.114	0.121
Industry FE	Yes	Yes
Year FE	No	No
Firm FE	No	No

Notes: Panel A of this table presents the results of the effect of mandatory CSR reporting on financial constraints using the PSM sample. Panels B and C report the results using alternative dependent variables and alternative samples, respectively. Panel D reports the results of a pseudo test, excluding 2008, the CSR disclosure mandate year, from the sample period. Robust standard errors clustered by firms are reported in parentheses. Variable definitions are provided in Appendix 4.1. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 4.4

Effect of mandatory CSR reporting on financial constraints conditional on political connections

	Without Political Connections	With Political Connections
	(1)	(2)
MD×POST	**0.425****	**0.185**
	(0.164)	**(0.179)**
Control variables	Yes	Yes
Observations	1,813	1,959
Adjusted R^2	0.218	0.168
Industry FE	Yes	Yes
Year FE	Yes	Yes
Firm FE	Yes	Yes
Chow test		
Chi2	1.090	
P-value	0.296	

Notes: This table presents the results of the effect of mandatory CSR reporting on financial constraints conditional on whether firms with mandatory CSR reporting are politically connected. Robust standard errors clustered by firms are reported in parentheses. Variable definitions are provided in Appendix 4.1. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 4.5

Mediating effect of agency conflicts on mandatory CSR reporting on financial constraints

Panel A agency conflicts between managers and shareholders					
	FCF	*CASHHD*	*DIVPAYOUT*	*ORECTA*	*ROA*
	(1)	(2)	(3)	(4)	(5)
MD×POST	**0.004**	**-0.006**	**-0.019**	**0.004****	**-0.010*****
	(0.007)	**(0.006)**	**(0.019)**	**(0.002)**	**(0.003)**
MD	-0.007	0.007	0.045**	-0.008***	0.012***
	(0.006)	(0.007)	(0.018)	(0.002)	(0.003)
POST	-0.017***	0.013**	-0.007	-0.009***	-0.002
	(0.006)	(0.005)	(0.016)	(0.002)	(0.003)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	3,772	3,763	3,772	3,772	3,772
Adjusted R^2	0.019	0.059	0.020	0.052	0.168
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	No	No	No
Firm FE	No	No	No	No	No

Panel B agency problem between large shareholders and minority shareholders			
	KZ	*KZ*	*KZ*
	(1)	(2)	(3)
MD×POST	**0.332*****	**0.215****	**0.196***
	(0.122)	**(0.105)**	**(0.105)**
ORECTA	6.253***		4.641***
	(1.301)		(1.144)
ROA		-14.626***	-14.443***
		(0.951)	(0.948)
MD	-0.306**	-0.165	-0.134
	(0.125)	(0.113)	(0.112)
POST	0.091	0.012	0.053
	(0.095)	(0.083)	(0.085)
Control variables	Yes	Yes	Yes
Observations	3,772	3,772	3,772
Adjusted R^2	0.125	0.204	0.204
Industry FE	Yes	Yes	Yes
Year FE	No	No	No
Firm FE	No	No	No

Notes: The table shows the results of direct and indirect mediation effects of agency conflicts on mandatory CSR reporting on financial constraints. Mediators representing agency conflicts include *FCF*, *CASHHD*, *DIVPAYOUT*, *ORECTA*, and *ROA*. Panel A shows the results of testing whether independent variables are related to mediators. Panel B shows the results of the regression including mediators, independent variables, and control variables. Variable definitions are provided in Appendix 4.1. Robust standard errors clustered by firms are reported in parentheses. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 4.6

Effect of mandatory CSR disclosure on financial constraints conditional on CSR performance

	High CSR Index	Low CSR Index	High CSR score	Low CSR score
	(1)	(2)	(3)	(4)
MD×POST	**0.485*** **	**0.086**	**0.301***	**0.482*** **
	(0.180)	**(0.149)**	**(0.160)**	**(0.163)**
MD	-0.282*	-0.142	-0.418**	-0.353**
	(0.163)	(0.164)	(0.167)	(0.153)
POST	0.005	0.027	0.009	0.015
	(0.099)	(0.101)	(0.097)	(0.102)
Control variables	Yes	Yes	Yes	Yes
Observations	2,566	3,153	2,653	2,662
Adjusted R^2	0.112	0.134	0.416	0.370
Industry FE	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes
Firm FE	No	No	No	No
Chow test				
Chi2	3.966**		0.720	
P-value	0.046		0.396	

Notes: This table reports the result of the effects of CSR performance on the relations between mandatory CSR reporting and financial constraints. Column (1) and (2) show the result from the analysis of changes in financial constraints around mandatory CSR reporting conditioning on CSR Index. The treatment observations of the PSM sample are divided into two groups: firms with high CSR Index and firms with low CSR Index based on whether CSR index of a firm in 2008 is higher than the median CSR index in 2008. Column (3) and (4) show the result from the analysis of changes in financial constraints around mandatory CSR reporting conditioning on CSR score. The treatment observations of the PSM sample are divided into two groups that are firms with high CSR score and firms with low CSR score based on whether CSR score of a firm in 2008 is higher or lower than the median CSR performance score in 2008. The control firms included in the table are the same as the control group in Table 4.3. The bottom of Panel A shows the chow test analysis of the difference in the coefficients on *MD×POST* between high CSR Index group and low CSR Index group and the chow test analysis of the difference in the coefficients on *MD×POST* between high CSR score group and low CSR score group. Variable definitions are provided in Appendix 4.1. Robust standard errors clustered by firms are reported in parentheses.***, **, * indicate significance at the .01, .05, and .10 levels in a two-tailed test, respectively.

Table 4.7

Effect of voluntary CSR disclosure on financial constraints

	(1)	(2)
MD×POST	**0.065** **(0.157)**	**0.059** **(0.163)**
VD	–0.464*** (0.157)	
POST	0.310*** (0.056)	
Control variables	Yes	Yes
Observations	6,910	6,910
Adjusted R^2	0.153	0.188
Industry FE	Yes	No
Year FE	No	Yes
Firm FE	No	Yes

Notes: This table reports the results of the effects of voluntary CSR reporting on financial constraints. The treatment firms issue at least one voluntary CSR report in the sample period. The benchmark firms do not issue any CSR report in the sample period. Variable definitions are provided in Appendix 4.1. Robust standard errors clustered by firms are reported in parentheses. ***, **, * indicate significance at the .01, .05, and .10 levels in a two-tailed test, respectively.

Appendix 4.1

Variables Definitions

Variable	Definition
Measures of financial constraints	
KZ	Following Kaplan and Zingales (1997), I calculate the following financial ratios using the accounting information of listed firms in China over the period 1998–2014: cash flow to lagged total capital ($CF_{i,t}/A_{i,t-1}$), dividends to lagged total capital ($D_{i,t}/A_{i,t-1}$), cash holdings to lagged capital ($C_{i,t}/A_{I,t-1}$), debt to total capital ($LEV_{i,t}$), and Tobin's Q ($Q_{i,t}$). Cash flow is defined as operating income plus depreciation. Total capital is defined as debt plus total shareholder equity. Dividends are the total annual dividend payments. Cash is defined as cash and marketable securities. Debt is defined as short-term and long-term debt. Tobin's Q is defined as book assets minus book equity minus deferred taxes plus market equity, all divided by book assets. I then define the following indicator variables: kz_1 is equal to 1 if $CF_{i,t}/A_{i,t-1}$ of a firm year is below the median value across all firms for that year and is 0 otherwise, kz_2 is equal to 1 if $D_{i,t}/A_{i,t-1}$ of a firm year is below the median value across all firms for that year and is 0 otherwise, kz_3 is equal to 1 if $C_{i,t}/A_{i,t-1}$ of a firm year is below the median value across all firms for that year and is 0 otherwise, kz_4 is equal to 1 if $LEV_{i,t}$ of a firm year is below the median value across all firms for that year and is 0 otherwise, kz_5 is equal to 1 if $Q_{i,t}$ of a firm year is below the median value across all firms for that year and is 0 otherwise, finally, kz_0 is defined as the sum of kz_1, kz_2, kz_3, kz_4, and kz_5. I classify firms into five discrete categories of financial constraints according to the value of kz_0 and then estimate an ordered logit regression to relate this classification to financial ratio variables. I use the following regression coefficients to construct *KZ*, an index that consists of a linear combination of five financial ratios. $$KZ_{i,t} = -10.283 \times \frac{CF_{i,t}}{A_{i,t-1}} - 47.961 \times \frac{D_{i,t}}{A_{i,t-1}} - 6.203 \times \frac{C_{i,t}}{A_{i,t-1}} + 5.043 \times LEV_{i,t} + 0.598 \times Q_{i,t} + \text{Firm Dummies} + \text{Year Dummies} + \varepsilon_{i,t}$$
SA	The SA Index developed by Hadlock and Pierce (2010): $$SA_{i,t} = -0.737 \times SIZE_{i,t-1} + 0.043 \times SIZE_{i,t-1}^2 - 0.040 \times AGE_{i,t},$$ where *SIZE* is the natural logarithm of the total assets, and *AGE* is the number of years preceding the current year that the firm has a non-missing stock price.
CF	Operating cash flows, scaled by the total assets at the fiscal year end.
IVT	Total capital expenditures, scaled by the total assets.
DIV	Cash dividend, scaled by the total assets at the fiscal year end.
Variables of interest	
MD	A dummy variable is equal to 1 if a firm is mandated to issue CSR reports starting from December 2008 and is 0 otherwise.
POST	A dummy variable is equal to 1 for years after 2008 and is 0 otherwise.
Control variables	
SIZE	Natural logarithm of total assets (in RMB) at the fiscal year end.

TC	Trade credit. The sum of notes payable, accounts payable and deposit receivable, scaled by total assets at the fiscal year end.
SG	Sales growth. Sales in current year minus sales in the previous year, scaled by total assets at the fiscal year end.
LOAN	Amount of short term and long term borrowings, scaled by total assets at the fiscal year end.
RETURN	Annual stock return.
BIG4	A dummy variable equal to one if a firm is audited by a Big 4 audit firm and zero otherwise.
GOV	Percentage of government shareholdings.
ISTSH	Percentage of institutional shareholdings.
DONATION	Natural logarithm of one plus the amount of donations scaled by total assets at the fiscal year end.
Other variables	
MV	Natural logarithm of the market value of equity at the fiscal year end.
TURNOVER	Annual share turnover, total number of shares traded divided by the total number of shares outstanding for the period.
ROA	Net income divided by the total assets at the fiscal year end.
CONNECT	A dummy variable that is equal to 1 if the CEO, vice CEO, chairman, or vice-chairman formerly served or currently serve in the government, or as a deputy of the People's Congress, or the People's Consultative Conference and is 0 otherwise.
ANALYST	Natural logarithm of 1 plus the number of financial analysts following a firm.
FCF	Free cash flow divided by the total assets.
CASHHD	Amount of cash and cash equivalent on the balance sheet, divided by the total assets.
DIVPAYOUT	Dividend divided by net income.
ORECTA	Other receivable divided by the total assets.
CSRindex	This is the sum of the following ten dummy variables. Shareholder relations is a dummy variable equal to 1 if the CSR report discloses information on shareholder relations and is 0 otherwise. Creditor relations is a dummy variable equal to 1 if the CSR report discloses information on creditor relations and is 0 otherwise. Employee relations is a dummy variable equal to 1 if the CSR report discloses information on employee relations and is 0 otherwise. Supplier relations is a dummy variable equal to 1 if the CSR report discloses information on supplier relations and is 0 otherwise. Customer relations is a dummy variable equal to 1 if the CSR report discloses information on customer relations and is 0 otherwise. Environmental protection is a dummy variable equal to 1 if the CSR report discloses information on environmental protection and is 0 otherwise. Public relations and charities is a dummy variable equal to 1 if the CSR report discloses information on public relations and charities and is 0 otherwise. The CSR policies is a dummy variable equal to 1 if the CSR report discloses information on CSR policies and is 0 otherwise. Work conditions is a dummy variable equal to 1 if the CSR report discloses information on work conditions and is 0 otherwise. Deficiencies in CSR performance is a dummy variable

	equal to 1 if the CSR report discloses information on deficiencies in CSR performance and is 0 otherwise.
CSRscore	A firm's CSR performance rating score provided by the Rankins CSR Ratings (RKS). The RKS is an independent and leading CSR rating agency in China. It covers all listed firms issuing CSR reports in China and provides yearly CSR ratings, with scores available from 2008. The RKS creates a rating system of CSR reports based on the Global Reporting Initiative (3.0) adapted to the Chinese context.
VD	A dummy variable that is equal to 1 if the firm issues at least one voluntary CSR report in the sample period and is 0 if the firm does not issue a CSR report in the sample period.

Appendix 4.2

Ordered logit regression to construct the measure of financial constraints

	KZ
$CF_{i,t}/A_{i,t-1}$	–10.283***
	(0.261)
$D_{i,t}/A_{i,t-1}$	–47.961***
	(1.845)
$C_{i,t}/A_{i,t-1}$	–6.203***
	(0.200)
$LEV_{i,t}$	5.043***
	(0.220)
$Q_{i,t}$	0.598***
	(0.027)
Fixed effects	Firm & Year
Observations	20,483
Pseudo R^2	0.347

Notes: The table presents coefficient estimates and robust standard errors clustered by firms (in parentheses) of the ordered logit regression that I estimate to construct the measure of financial constraints, *KZ*, following Kaplan and Zingales's (1997) approach and using the accounting information of listed firms in China over the period 1998–2013.

Appendix 4.3

Propensity score matching approach

Panel A Logit model used to find propensity scores	
	CSRreprot
MV	0.949***
	(0.089)
TURNOVER	–0.024
	(0.021)
RETURN	0.087
	(0.074)
ROE	1.714***
	(0.558)
GOV	1.069***
	(0.273)
CONNECT	0.424***
	(0.113)
DONATION	–2.164*
	(1.265)
ANALYST	0.546***
	(0.067)
CONSTANT	–17.188***
	(1.333)
Observations	2,775
Fixed effects	Industry & Year
Pseudo R^2	0.312

Appendix 4.3 - Continued

Panel B Test of the effectiveness of the propensity score matches				
		Treatment	Benchmark	
		Mean	*Mean*	*Difference*
MV	Pre-match	14.952	15.957	–1.005***
	Post-match	15.271	15.937	–0.665***
TURNOVER	Pre-match	5.641	4.185	1.456***
	Post-match	5.493	4.222	1.271***
RETURN	Pre-match	0.375	0.460	–0.085***
	Post-match	0.466	0.466	0.000
ROE	Pre-match	0.056	0.098	–0.042***
	Post-match	0.068	0.098	–0.030***
GOV	Pre-match	0.111	0.181	–0.070***
	Post-match	0.160	0.180	–0.021***
CONNECT	Pre-match	0.444	0.564	–0.120***
	Post-match	0.477	0.561	–0.084***
DONATION	Pre-match	0.021	0.019	0.002**
	Post-match	0.022	0.018	0.003**
ANALYST	Pre-match	1.845	2.779	–0.934***
	Post-match	2.078	2.769	–0.691***

Notes: The table describes the propensity score matching approach. Using data from the pre-mandatory CSR disclosure period (2006–2008), I first apply a first-stage logit regression to estimate the probability of being a treatment firm. I then match each treatment firm to the benchmark firms using the nearest neighbor matching algorithm (with replacement and within a caliper width of 0.2×standard error of propensity score). Panel A presents the coefficient estimates and robust standard errors clustered by firms (in parentheses) of the logit regression. Panel B presents the test of the effectiveness of the propensity score matches. Variable definitions are provided in Appendix 4.1.

5 CHAPTER FIVE

CONCLUSIONS

5.1 Introduction

This thesis investigates the determinants of CSR performance and the economic consequences of mandatory CSR reporting for Chinese firms. The first and second papers investigate the determinants of CSR performance. Specifically, Paper 1 (in Chapter Two) examined the effect of Chinese firms' cross-border acquisitions on their CSR performance. Paper 2 (in Chapter Three) examined whether the pilot program of short selling and margin trading in China affects the CSR performance of pilot firms. Paper 3 (in Chapter Four) examined the effect of mandatory CSR disclosure on firms' financial constraints.

The remainder of this chapter is organized as follows. Section 5.2 presents the summaries and findings of the three papers comprising the thesis. Section 5.3 discusses the overall contributions and implications. The limitations of the thesis and suggestions for future research are provided in Section 5.4.

5.2 Summaries and Findings

5.2.1 Paper 1: Cross-border Acquisitions and CSR Performance: Evidence from China

This paper provides evidence that cross-border acquisitions can enhance the CSR performance of Chinese acquirers. Using a sample of 4,006 firm-year observations

covering 38 host countries from 2008 to 2015, Paper 1 examines whether Chinese cross-border acquirers improve their CSR performance after the completion of cross-border acquisitions and finds that Chinese acquirers significantly improve their CSR performance following their cross-border acquisitions, compared with the control firms.

Moreover, the positive effect of cross-border acquisitions on the CSR performance of Chinese acquirers is stronger for the acquirers exposed to multiple host countries and the host countries with common and French civil law origins. The findings highlight that Chinese acquirers initiate the effort to improve CSR performance to gain legitimacy in host countries, especially when host countries have institutional demand for higher CSR standards.

In addition, Chinese acquirers improve their CSR performance to a greater extent in the host countries with strong social norms toward CSR engagement. Non-SOEs experience higher CSR performance improvement after cross-border acquisitions than SOEs, especially for firms in polluting industries. The findings indicate that Chinese acquirers can gain CSR-related knowledge from their foreign investments.

5.2.2 Paper 2: Short Selling, Margin Trading, and Corporate Social Responsibility

Using the short selling and margin trading pilot program in China as a quasi-natural experiment, Paper 2 examines whether the removal of short selling and margin trading constraints affects CSR performance. The paper also separates the effect of short selling and margin trading on CSR performance. The sample consists of 3,408 firm-year observations covering both the pilot firms and non-pilot firms with CSR scores in China A-share stock market between 2008 and 2015.

This study find that the pilot firms enhance their CSR performance in response to the exogenous shock of the removal of short selling and margin trading ban. When decomposing the joint effect of short selling and margin trading deregulation on CSR performance, pilot firms improve their CSR performance to respond the exogenous shock

of short selling threats, while the exogenous shock of margin trading cannot affect firms' CSR performance. The findings suggest that CSR plays the signal and insurance roles by building a positive corporate image to shield against the short selling threats.

The results also indicate that firms' CSR improvement is more pronounced for the pilot firms with higher downward price pressures, worse earnings news and higher bankruptcy risk. The findings suggest that when pilot firms are exposed to a more adverse situation with higher risks, they are more likely to signal investors with positive corporate images by improving CSR performance. I also find that SOEs and pilot firms with high concentrated ownership improve their CSR performance more under the short selling threats, indicating the governance role of short selling.

5.2.3 Paper 3: Mandatory CSR Disclosure and Financial Constraints: Evidence from China

Paper 3 examines the effect of mandatory CSR reporting on financial constraints for Chines firms. The paper also investigates the effect of political connections on the relationships between mandatory CSR disclosure regulation and financial constraints. A DiD model is estimated on a sample of 3,772 firm-years representing the firms only with mandatory CSR reports and firms without CSR reports between 2006 and 2013. This study find that mandatory CSR reporting firms suffer higher financial constraints after the mandate. The relation is more pronounced for firms without political connections and firms with good CSR performance. The additional analysis also reveals that mandatory CSR reporting can induce the agency conflicts between the major shareholders and minor shareholders, which increases the difficulties of external financing.

5.3 Contributions and Implications

The thesis contributes to the literature and provides a better understanding of the determinants of CSR performance. Existing literature on CSR largely investigates the effect of CSR activities on financial performance (Margolis et al. 2007; Huang and

Watson 2015; Malik 2014), while few studies explore the determinants of CSR performance, and most have a setting in a specific institutional environment (Davidson et al. 2018; Liang and Renneboog 2017). The thesis shows that cross-border acquisitions lead to improved CSR performance of Chinese acquirers and the external shock of the removal of short selling and margin trading constraints can positively affect firms' CSR performance. The results suggest that CSR plays an important role to help firms gain legitimacy and meet the expectations of stakeholders. When firms confront external negative shocks, CSR plays a signal and insurance role to protect them. These findings provide us with a further understanding of the determinants of CSR from an institutional perspective, in which firms have dynamic pressure from stakeholders and investors.

In particular, Paper 1 has important policy implications. The Go Global policy of the Chinese government serves domestic economic, social and environmental agendas. This study provides micro-level evidence supporting the policy that cross-border acquisitions can improve the CSR performance of Chinese acquirers. Other developing countries may consider similar policies and guidance assisting domestic firms' cross-border acquisition activities to facilitate domestic social and environmental development.

Paper 2 contributes to exploring the real effect of secondary financial markets on corporate behaviors in emerging markets and the policy debate on the benefits and costs of short selling. Prior studies suggest that short selling can identify the overpriced shares of firms with opportunistic behaviors (Karpoff and Lou 2010; Fang et al. 2017; Massa et al. 2015a). The study indicates that short selling can generate external benefits for stakeholders by prompting firms to improve CSR performance.

Paper 3 contributes to the growing literature that investigates the effect of underlying economies and institutions on the effectiveness of government intervention through legislation/regulation of corporate practices. As government and stock exchanges move to incorporate CSR into disclosure requirements worldwide, this study suggests

that CSR activities that can be valuable for seeking political connections in emerging economies, come at the expense of shareholders, with increasing agency problem and financial constraints. The findings of this study complement prior research, suggesting that CSR activities are motivated by political affiliations of stakeholders (Hong and Kostovetsky 2012; Di Giuli and Kostovetsky 2014).

5.4 Limitations and Suggestions for Future Research

The findings of this thesis should be considered in light of their limitations. First, the sample of this study is not randomly selected. The CSR ratings in the RKS database are predominantly based on CSR information disclosed in CSR reports. That is, only firms that have issued CSR reports have CSR ratings and are included in the samples. The firms that disclose CSR reports are generally large and have superior financial performance. In addition, cross-border acquisitions are large corporate investments so that only firms with sufficient resources can complete the investments. Firms in the short selling and margin trading pilot list also have better liquidity and are larger than non-pilot firms. Although the PSM approach and the Heckman two-stage regressions are employed to mitigate the selection bias, it is hard to find perfect matching firms and solve the problem thoroughly.

Next, this study focuses on a single country, China, while prior literature documents that the peculiarity and complexity of developing contexts result in CSR variation among countries (Jamali et al. 2017). It is important to note that, given the significant institutional differences between China and other countries, the findings may not be generalizable to other countries where the institutional contexts are substantially different. Although I examine the effect of some institutional factors on CSR performance in China such as political connections, it is important to recognize that antecedents to CSR practices may vary in different institutional environments.

Future studies may use a cross-country sample to explore institutional-level differences to the extent in which various factors influence CSR between China and other countries. As different countries have different institutional characteristics such as cultural background, economic environment, legal origins, and political systems, future study may investigate other factors associated with CSR practices and disclosure in different countries.

Finally, several possible research directions relating to each of the three papers comprising the thesis are discussed below. Paper 1 provides evidence that cross-border acquisitions can drive Chinese firms to improve their CSR performance. Future research may consider the implications of cross-border acquisitions on the specific type of social or environmental activities and whether improvement of CSR performance can benefit acquisition performance, such as accelerating the integration with the targets and lowering the turnover rate of the employees of the targets. As this study is from the perspective of acquirers, the effect of cross-border acquisitions on target firms' CSR performance can also be a direction for future studies to explore.

Paper 2 examines the removal of short selling and margin trading constraints on CSR performance using the short selling and margin trading pilot program in China as a quasi-natural experiment. The findings in this study imply that firms rely on CSR practices to shape a good corporate image and send a positive signal, protecting them from short selling threats. However, the study does not identify the specific types of CSR activities. Future work can focus on what types of CSR activities can be affected by short selling threats that can provide specific guidance to firms for the avoidance of negative external shocks.

Paper 3 examines that mandatory CSR reporting deteriorates firms' financial constraints, which is different from the findings by examining the effect of voluntary CSR reporting on financial constraints. The current research identifies that mandatory CSR

regulations cause a drop in stock price and a decrease in the profitability of the mandated firms (Manchiraju and Rajgopal 2017; Chen et al. 2018), and it is not a verdict on regulatory reforms related to CSR, which is inherently a social welfare decision and involves numerous stakeholders. Future research may investigate the social welfare implications of the mandatory CSR rule. Whether mandatory CSR is beneficial for the objective of social welfare is an important question to be further explored.

Reference

Chen, Y.-C., M. Hung, and Y. Wang. 2018. The effect of mandatory CSR disclosure on firm profitability and social externalities: Evidence from China. *Journal of Accounting and Economics* 65 (1):169-190.

Davidson, R. H., A. Dey, and A. J. Smith. 2018. CEO Materialism and Corporate Social Responsibility. *The Accounting Review*.

Di Giuli, A., and L. Kostovetsky. 2014. Are red or blue companies more likely to go green? Politics and corporate social responsibility. *Journal of Financial Economics* 111 (1):158-180.

Fang, V. W., A. H. Huang, and W. Wang. 2017. Imperfect Accounting and Reporting Bias. *Journal of Accounting Research* 55 (4):919-962.

Hong, H., and L. Kostovetsky. 2012. Red and blue investing: Values and finance. *Journal of Financial Economics* 103 (1):1-19.

Huang, X. B., and L. Watson. 2015. Corporate social responsibility research in accounting. *Journal of Accounting Literature* 34:1-16.

Karpoff, J. M., and X. Lou. 2010. Short Sellers and Financial Misconduct. *The Journal of Finance* 65 (5):1879-1913.

Jamali, D., C. Karam, J. Yin, and V. Soundararajan. 2017. CSR logics in developing countries: Translation, adaptation and stalled development. *Journal of World Business* 52 (3):343-359

Liang, H., and L. Renneboog. 2017. On the Foundations of Corporate Social Responsibility. *The Journal of Finance* 72 (2):853-910.

Malik, M. 2014. Value-Enhancing Capabilities of CSR: A Brief Review of Contemporary Literature. *Journal of Business Ethics* 127 (2):419-438.

Manchiraju, H., and S. Rajgopal. 2017. Does Corporate Social Responsibility (CSR) Create Shareholder Value? Evidence from the Indian Companies Act 2013. *Journal of Accounting Research* 55 (5):1257-1300.

Margolis, J. D., H. A. Elfenbein, and J. P. Walsh. 2007. Does it pay to be good? A meta-analysis and redirection of research on the relation between corporate social responsibility and financial performance. *working paper*:https://www.hks.harvard.edu/m-rcbg/papers/seminars/margolis_november_07.pdf.

Massa, M., W. Qian, W. Xu, and H. Zhang. 2015. Competition of the informed: Does the presence of short sellers affect insider selling? *Journal of Financial Economics* 118 (2):268-288.