Corporate Governance Effects on Risk Management and Shareholder Wealth: The Case of Mergers and Acquisitions

A Thesis Submitted in fulfilment of the requirement for the degree of Doctor of Philosophy (Ph.D.)

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To my family

Certificate of Original Authorship

I, Yang Zhang, declare that this thesis is submitted in fulfillment of the requirements for the award of Doctor of Philosophy, in the Business School at the University of Technology Sydney. This thesis is wholly my own work unless otherwise reference or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis. I also declare that this document has not been submitted for qualifications at any other academic institution. This research is supported by the Australian Government Research Training Program.

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Abstract

This dissertation contains three empirical research projects investigating the relationship between corporate governance and the performance of mergers and acquisitions (M&As) at the domestic and international levels. Each of the three stand-alone chapters provides a different perspective on corporate governance and its effects on risk management and shareholder wealth in M&A transactions. Within this context, this thesis makes a substantial original contribution to advancing the existing knowledge on measuring, documenting and determining the effects of corporate governance on M&A corporate investment decisions.

The first project in Chapter 2 focuses on the role of corporate governance in improving corporate credit risk in cross-border M&As. Using a large global sample, this chapter finds that an acquirer's credit risk is reduced after buying target companies from countries with stronger creditor or shareholder protection. This result supports the hypothesis that firms can improve governance quality by investing in countries with better regulatory standards. However, corporate credit risk does not deteriorate for acquirers when the takeover target resides in a country with weaker regulatory governance, as managerial behaviour is still constrained by the stricter home regulatory environment. The asymmetric effect of corporate governance on credit risk is robust to the asset quality of the target firm and is more pronounced when it involves a publicly listed target company. The findings of this chapter shed light on a governance arbitrage strategy through which acquirers could manage credit risk in cross-border M&As.

Chapter 3 contributes to the ongoing debate about the effects of corporate social responsibility (CSR), another dimension of corporate governance, on shareholders' wealth. It reveals that the market have different reactions to a firm's socially responsible and irresponsible CSR behaviours. There is no evidence that the stock market rewards socially responsible acquirers in the short term. However, this chapter does find strong evidence that the market judges investments by socially irresponsible firms more negatively. The findings are more pronounced for those acquirers who engage in more CSR activities involving the community, employment relations, environmental and human rights issues. These results suggest that, while

firms cannot create shareholder wealth by merely investing in more socially responsible activities, they can achieve this goal by minimising socially irresponsible behaviours.

Chapter 4 further studies the effects of the firms' socially controversial behaviours on M&A performance. This chapter finds that acquirers identified as "sin" firms (i.e. firms have business involved with tobacco, firearms, alcohol, nuclear power, military and gambling) have significantly higher M&As announcement abnormal stock returns. This result supports the hypothesis that the elevated scrutiny and litigation risk faced by sin acquirers will force managers to produce high-quality M&A decisions, which is consequently reflected in shareholder returns. High-quality financial reporting released by sin companies also reduces information asymmetry, improving shareholders' ability to monitor managerial investment activities and enhancing M&A efficiency. This chapter also reveals that sin acquirers are more likely to substitute stock with cash as the method of M&A payment, as the shares of firms with a controversial business are not well accepted as the currency. It also takes longer for sin acquirers to complete M&A deals, due to the social norm conflicts and difficulties in the post-deal integration. This chapter also provides firm-level evidence about sin stock neglect-effects.

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Chapter 1:

Introduction

1.1 Motivation and Objective

Corporate governance is a combination of policies and laws that affect corporate management and control, and has wide economic influence from country-level (e.g. providing legal protection for investors) to firm-level (e.g. directing social behaviours). Promoting good corporate governance standards is critical to attracting capital investment, reducing risk, and promoting company performance, and has a significant role in consolidating the integrity and efficiency of financial markets.

In order to ensure corporate success, corporate governance practices also need to be compatible with global standards regarding the legal, regulatory and institutional environment. The Principles of Corporate Governance reported by the OECD (2004) recognise that an effective corporate governance system can reduce capital costs and encourage firms to efficiently use resources to promote growth. These arguments are implicitly and explicitly consistent with the view that better corporate governance will lead to higher corporate value and more profitable company performance.

M&As are one of the most significant investment decisions made by companies. M&As have a wide range of economic implications from the scale of business to restructuring, and increasing market shares and competitiveness (Jensen, 1998; Marks & Mirvis, 2011; Bena & Li, 2014; Schmidt, 2015; Huang, Officer, & Powell, 2016). Such transactions are not only important for local companies, they are also internationally significant for the purpose of business expansions and promoting the scales of economies. The concept of foreign direct investment (FDI) is booming, as it promotes an increase in economic interdependence between countries and regions. Therefore, given the economic impact and size of these transactions, the interest in them is understandable (Weston, Chung, & Hoag, 1990; Rossi & Volpin, 2004).

As an important corporate investment decision, and because they have such a significant influence on companies' operation and performance, M&As serve as an ideal field to investigate the effects of corporate governance. This is because M&A approval process is heavily regulated and requires support from shareholders and stakeholders who both have important influence on the final performance of an M&A transaction and play a significant role

in the process of post-deal integration. Therefore, the objective of this thesis is to empirically study the effects of different dimensions of governance quality on risk management and value creation for shareholders, by examining mergers and acquisitions performance at both the domestic and international levels. In doing so, this thesis presents three stand-alone chapters that provide different perspectives on corporate governance and its effects on corporate risk and shareholder wealth.

The remainder of this chapter will set the context and background for these three main aspects of the thesis. The related literature review is presented in Section 1.2, and this is followed in Section 1.3 by a thesis overview and its contributions to the literature. Section 1.4 provides an outline of the thesis.

1.2 Literature Review

1.2.1 Mergers and Acquisitions

Scholars from a wide range of areas have undertaken research into both domestic and cross-border M&As. Corporate finance literature has generally studied M&As under three broad issues[1]: (1) the causes and factors that companies consider when conducting M&A transactions; (2) the factors that affect M&A performance and efficiency; and (3) other M&A performance issues.

First, many previous studies have examined the central research question on why firms undertake M&A deals. Studies have broadly considered this question in four categories: shareholder wealth creation (Eckbo, 1983; Jensen & Ruback, 1983; Jensen, 1986; Martin & McConnell, 1991; Prager, 1992; Kim & Singal, 1993; Agrawal & Walkling, 1994; Puranam & Srikanth, 2007; Rhodes-Kropf & Robinson, 2008; Du & Boateng, 2015; Wu et al., 2016; Alexandridis, Antypas, & Travlos, 2017), shareholder wealth destruction due to managerial behaviour (Hambrick & Finkelstein, 1987; Haleblian & Finkelstein, 1993; Agrawal & Walkling, 1994; Malmendier & Tate, 2008; Gomez-Mejia & Wiseman, 1997; Grinstein & Hribar, 2004; Deutsch et al., 2007; Harford & Li, 2007; Schmidt, 2015; Jenter & Lewellen,

[1] See Haleblian et al. (2009) for a comprehensive literature review focused on domestic mergers and acquisitions.

2015), environmental factors (Bergh and Lawless, 1998; Rossi & Volpin, 2004; Beneish, Jansen, Lewis, & Stuart, 2008), and firm characteristics (Amburgey & Miner, 1992; Haleblian, Kim, & Rajagopalan, 2006; Yang & Hyland, 2006; Levi et al., 2014; Arikan & Stulz, 2016).

Second, previous research has investigated multiple conditions that moderate M&A performance from different perspectives. In terms of the M&A deal characteristics, the payment method and deal types have impacts on firm valuation (Loughran & Vijh, 1997; King et al., 2004; Huang, Officer, & Powell, 2016) and market returns (Eckbo & Thorburn, 2000; Bharadwaj & Shivdasani, 2003; Faccio, McConnell, & Stolin, 2006). From the managerial effects perspective, prior research have examined the effects of ownership and compensation (Hubbard & Palia, 1995; Wright et al., 2002; Devers et al., 2007; Grinstein & Hribar, 2004) and managerial cognition (Cannella & Hambrick, 1993; Saxton & Dollinger, 2004; Krishnan, Miller, & Judge, 1997; Very et al., 1997; Jenter & Lewellen, 2015) on the M&A-performance relationship. In addition, previous research have examined the influnces of firm characteristics on M&A efficiency (Lang, Stulz, & Walkling, 1989; Lang, Stulz, & Walkling, 1991; Heron & Lie, 2002; Ishii & Xuan, 2014; John, Knyazeva, & Knyazeva, 2015), from the perspectives of firm size influences (Fuller et al., 2002) and acquirer experience (Haleblian & Finkelstein, 1999; Laamanen & Keil, 2008). Moreover, the environmental factors focus mainly on the regulation effects, and evidence has suggested that the regulatory environment affects bidder returns and risk (Asquith et al., 1983; Martynova & Renneboog, 2008; Schipper & Thompson, 1983; Choi et al., 2010; Malatesta & Thompson, 1993; Amihud et al., 2002; Wang & Xie, 2008; Bris et al., 2008; Lee et al., 2016).

Third, a few studies have investigated other consequences associated with M&A transactions. For example, some studies have examined M&A premium issues (Hayward & Hambrick, 1997; Rossi & Volpin, 2004; Moeller, 2005; Laamanen, 2007), and the effects of M&As on customers and bondholders (Billet, King, & Mauer, 2004; Penas & Unal, 2004; Karceski, Ongena, & Smith, 2005; Renneboog, Szilagyi, & Vansteenkiste, 2017).

Given the current high levels of globalisation and technological development, cross-border M&As are becoming popular. Nevertheless, M&A transactions beyond national borders

involve challenges, which involved in the differences in regulatory, cultural and economic environments (Ahern, Daminelli, & Fracassi, 2015; Hofstede, 1980; House et al., 2002).

Several prior research have investigated cross-border M&As across different areas[2], including foreign direct investment (FDI) (Hennart & Reddy, 1997; Andersen, 1997; Barkema & Vermeulen, 1998; Stepanok, 2015; Brouthers & Brouthers, 2000), firm performance induced by M&A transactions (Li & Guisinger, 1991; Brouthers, 2002; Nitsch et al., 1996), and shareholder wealth effects (Harris & Ravenscraft, 1991; Datta & Puia, 1995; Morck & Yeung, 1992; Kang, 1993; Karolyi & Taboada, 2015; Markides & Ittner, 1994). Because of the issues of uncertainty and information asymmetry problem in the foreign markets, some studies have focused on post-deal integration issues (Olie, 1994; Weber et al., 1996; Very et al., 1997; Morosini et al., 1998; Bresman et al., 1999; Larsson & Finkelstein, 1999; Child et al., 2001; Risberg, 2001; Krug & Nigh, 2001; Krug & Hegarty, 2001; Vermeulen & Barkema, 2001; Bhagat et al., 2002; Zhu et al., 2015; Graebner et al., 2017).

In addition, a group of studies have shown cross-border M&As to be a way to entry into foreign markets (Andersen, 1997; Kogut & Singh, 1988; Brouthers & Brouthers, 2000; Vermeulen & Barkema, 2001; Harzing, 2002), and demonstrated that they can work as a value-enhancing and risk management strategy for shareholders in both acquirer and target companies (Kang, 1993; Li, Li, & Wang, 2016; Markides & Ittner, 1994; Kyriazopoulos & Drymbetas, 2015; Morck & Yeung, 1992; Kandilov et al., 2017).

1.2.2 M&As and Risk Management

It is commonly argued that mergers and acquisitions have the potential to reduce risk. This view is dependent on the conventional wisdom of "not putting all one's eggs in one basket"; therefore, M&As are naturally risk-reducing activities. Previous studies support this argument, by showing the evidence that the default risk of post-merger is decreased because of the activity diversification (Van et al., 2009), the geographic diversification (Hughes et al., 1999), and the portfolio diversification (Emmons et al., 2004). Acquirers could also achieve the goal of credit

[2] See Shimizu et al. (2004) for a comprehensive literature review in the field of cross-border M&As.

risk reduction through cross-listing and the alteration of the international regulatory environment. Lee et al. (2016) indicate that credit risk declines when operating under better property rights institutions or cross-listing stocks in a market with stricter disclosure requirements.

Conversely, M&A transactions may also potentially increase the risk, because of aggressive managerial actions and risk-taking incentives for shareholders following these transactions. For example, Furfine and Rosen (2011) examine a group of European bank consolidations and show that domestic mergers increase the risk of default by acquirers, and bank mergers increase the default risk for relatively safe banks. However, Koerniadi et al. (2015) find contrary evidence, that bidders reduce the risk of default in cross-border M&As.

Some previous research have also illustrated that M&As can potentially have impacts on bank risk. For example, Amihud et al. (2002) reveal that regulators need not pay attention to a rising risk problem in cross-border bank mergers, because the average bank risk (in terms of total risk and systemic risk) is neutral. Choi et al. (2010) show the impact on bank risk in the bond market by examining cross-border bank M&As. It reports that bank M&As may decrease the risk of bankruptcy, while also increasing risk because of increased risk incentives for bank managers and shareholders after the transactions.

1.2.3 M&As and Shareholder Wealth

Early studies indicate that mergers and acquisitions do not have a value-enhancing influence on firm valuation, either in the short term (Dodd, 1980; Malatesta & Thompson, 1993; Hackbarth & Morellec, 2008; Jarrell & Poulsen, 1989) or long term (Loderer & Martin, 1992; Agrawal et al., 1992; Asquith, 1983; Loughran & Vijh, 1997). This is because M&As are often thought to erode the value of a company (Seth et al., 2002; Chatterjee, 1992; Moeller et al., 2004) and induce volatility in market returns (Pablo et al., 1996; Langetieg et al., 1980).

Although a number of previous research have focused on the acquirer's performance, scholars have also evaluated the M&A announcement returns by the target company. Given that target firms generally receive premiums in M&A transactions, shareholders from target

firms usually perform well and often have significant positive returns (Hansen & Lott, 1996; Asquith & Kim, 1982; Malatesta & Thompson, 1993; Datta & Puia, 1995).

Previous research have also investigated the effects of M&As on combined acquirer and target shareholder returns (Wright et al., 2002; Bradley et al., 1988; Bruner, 1988; Carow et al., 2004; Healy et al., 1990; Aktas et al., 2011). Although these studies generally indicate that M&As generate positive synergy returns, the target firms account for the most of shareholder wealth gain and acquirers contribute negative or neutral M&As announcement returns (Houston et al., 2001; Bradley et al., 1988; Leeth & Borg, 2000). A number of studies also show that synergistic gains from M&As can be achieved through the transfer of corporate governance (Wang & Xie, 2008; Martynova & Renneboog, 2008; Bris, Brisley, & Cabolis, 2008; Albuquerque et al., 2013), cross-listing and legal bonding (Burns, Francis, & Hasan, 2007), alternation of the regulatory environment though cross-border bank acquisitions (Karolyi & Taboada, 2015), the effect of corporate board and managerial executive performance (Custódio & Metzger, 2013; Levi, Li, & Zhang, 2014; Croci & Petmezas, 2015; Schmidt, 2015; El-Khatib, Fogel, & Jandik, 2015; Jenter & Lewellen, 2015; Field & Mkrtchyan, 2017), corporate innovation (Sevilir & Tian, 2012; Bena & Li, 2014), and corporate investment policies and activities (Aktas et al., 2011; Deng, Kang, & Low, 2013; Nguyen & Phan, 2017).

1.3 Thesis Overview and Contributions to the Literature

It is generally true that the main corporate responsibility is to manage risk and create values. This thesis investigates the effects of different aspects of corporate governance practices on risk management and shareholder wealth via domestic and cross-border M&As, in three separate but inter-related essays.

Chapter 2 examines the effects of corporate governance on credit risk by studying cross-border M&As. The stability of the global credit market is increasingly concerned by the public after the global credit crisis, and this has triggered a significant acceleration for stricter capital requirements and higher cross-country coordination of regulations in the globalised financial environment. Expansion through cross-border M&As provides strategic opportunities to operate beyond national borders and enables firms to operate beyond the regulatory restrictions

of home countries. Although the economic implications for shareholder wealth of governance and legal spill-over effects have been widely studied (Martynova & Renneboog, 2008; Wang & Xie, 2009; Bris et al., 2008; Albuquerque et al., 2013), there are fewer studies into multinational corporate risk in M&As (Choi et al., 2010; Lee et al., 2016). This chapter examines the impact of the changes in the acquirer's corporate governance environment induced by cross-border M&As on credit default swap spreads (CDS) and, therefore, on the credit risk of acquiring firms.

This chapter uses national-level corporate governance measures and examines cross-border M&As involving countries worldwide. It shows that acquirers reside in countries with weaker creditor and/or shareholder protection experience a reduction in credit risk after acquiring target firms from countries with better corporate governance quality. It supports the hypothesis that cross-border M&As provide a channel for acquirers to improve their governance quality by submitting themselves to the better regulatory environment of the country of the acquired firms. However, this chapter observes that credit risk does not deteriorate when acquiring target firms that reside in a country with weaker corporate governance standards. These results suggest that executives' behaviour is still constrained by the more stringent legal environment of their home country and that rational managers are expected not to "exploit" the weaker regulatory environment of the target country. This chapter provides significant implications for M&A investment decisions and provide a governance arbitrage strategy to manage credit risk through cross-border M&As transactions. Acquirers based in countries with poor governance quality can offer better protection to their own stakeholders by submitting themselves to the better regulatory environment of another country.

This chapter also makes contributions to several streams of existing research. First, this chapter joins a series of multinational corporate risk studies. It distinguishes itself by analysing a governance arbitrage strategy for firms to manage corporate credit risk different upon cross-listing channel (Lee et al., 2016). Second, this chapter improves current understanding of risk management in M&As (e.g., Furfine & Rosen, 2011; Vallascas & Hagendorff, 2011; Koerniadi et al., 2015) by focusing on credit risk management. In addition, this chapter extends the law and finance literature on the economic implications of changes in corporate governance

induced by M&A transactions, because most of the previous literature focus on valuation and shareholder wealth effects (Martynova & Renneboog, 2008; Wang & Xie, 2009; Bris et al., 2008; Albuquerque et al., 2013). Moreover, this chapter contributes to our understanding of the determinants of cross-border M&As (Erel et al., 2012) by showing that corporate governance quality is also a factor in M&A decisions and performance.

Chapter 3 examines shareholder wealth issues in mergers by studying another corporate governance dimension, namely corporate social responsibility (CSR). Although numerous companies have incorporated sustainable business practices, the effects of CSR activities on firms' financial performance remains an ongoing debate. One view supports the stakeholder theory, which considers that investing in CSR is a strategy for maintaining a good relationship with company stakeholders and therefore improving corporate financial performance (Gelb & Strawser, 2001; Jensen, 2001; Chih et al., 2008; Baron, 2001; Freeman et al., 2004; El Ghoul et al., 2011; Dhaliwal et al., 2014; Jawahar & McLaughlin, 2001). However, an opposing body of literature supports the shareholder expense view, which regards CSR as a wasteful use of firms' resources on non-productive projects (Surroca & Tribo, 2008; Renneboog et al., 2008; Pagano & Volpin, 2005). In order to better learn the economic implications of CSR, this chapter investigates the impact of CSR on shareholder wealth from a new perspective, identifying market reactions to M&As announcements for firms' with socially responsible and irresponsible behaviour.

This chapter employs alternative CSR measures to comprehensively evaluate acquiring firms' social responsibility and irresponsibility ratings. It is shown that acquiring firms with higher social responsibility ratings do not earn positive abnormal returns when they annouce a new M&A deal, which is consistent with Groening and Kanuri (2013). However, acquirers with socially irresponsible behaviours, particularly those with an excessive CSR irresponsible score, realise lower merger announcement returns. The findings of this chapter implies that the stock market does not reward acquirers for making more socially responsible activities in the short term. However, the market is sensitive to, and reacts negatively, to socially irresponsible behaviours. These results are not mutually exclusive with Deng et al. (2013), but they supplement the stakeholder value maximisation theory. The results of this chapter imply that,

while firms cannot create shareholder wealth by merely investing in more socially responsible activities, they can achieve this goal by minimising socially irresponsible behaviours. The findings are robust to endogeneity tests, and have more pronounced effects for acquirers involved in CSR activities involving the community, employment relations, environment, and human rights issues.

The findings of this chapter have implications for the effectiveness of CSR investment strategies to achieve better corporate financial performance. This chapter contributes to the literature from several perspectives. Firstly, it builds on the existing literature linking CSR and corporate performance (Hong & Kacperczyk, 2009; Stellner et al., 2015; Goss & Roberts, 2011; El Ghoul et al., 2011; Cahan et al., 2015), and evaluates the effects of corporate socially responsibility and socially irresponsibility on shareholder wealth. Second, this chapter complements the literature (Deng et al., 2013; Aktas et al., 2011) dealing with the shareholder wealth implications of CSR in M&A transactions, by extending stakeholder value maximisation theory. Additionally, this chapter extends previous literature on the relation between corporate social irresponsibility and firm performance (Hoi et al., 2013; Goss & Roberts, 2011; Hong & Kacperczyk, 2009).

Chapter 4 studies the effects of socially controversial behaviours on M&A performance. As a mirror of social norms, socially responsible investment (SRI) varies widely, from investments in morally and ethically sound firms to those that involve controversial business issues perceived to be unethical. This chapter focuses on a group of firms with controversial business characteristics. While some studies identify sin firms located in the alcohol, tobacco, and gambling industries, this industry-level identification cannot comprehensively reflect controversial business issues, as companies with controversial business issues can strategically diversify their business into non-controversial industries to reduce negative exposure from the public and media (Beneish et al., 2008). Therefore, this chapter identifies controversial business issues at the firm-level, based on KLD's controversial business ratings. It defines sin as those firms that involved in supporting, manufacturing, retailing, licensing and ownership of military, firearms, gambling, alcohol, tobacco, and nuclear power businesses (Statman & Glushkov, 2009; Leventis et al., 2013). Although previous studies examined sin companies

across a wide range of issues (Merton, 1987; Fabozzi et al., 2008; Hong & Kacperczyk, 2009; Leventis et al., 2013; Durand et al., 2013; Fauver & McDonald, 2014; Berman, 2002; Braun & Larrain, 2005), there has been limited studies that examine the influential role of controversial behaviour in corporate investment decisions. Therefore, this chapter investigates sin companies' investment efficiency by focusing on M&As.

Considering the ongoing debate on the economic consequences of socially unacceptable business practices, the empirical question remains of how they affect acquirers' shareholder wealth in M&A transactions. There are two competing predictions for this. One perspective suggests that the general public tends to have adverse impressions of sin companies, and that this leads to a lack of interest from investors; therefore, these companies tend to exhibit lower cumulative abnormal returns in M&A transactions compared with other comparable acquirers. However, another perspective suggests that sin companies receive favourable attention, including better return performance (Hong & Kacperczyk, 2009), higher dividends (Berman, 2002), stable business due to addictive attributes (Chong et al., 2006; Salaber, 2009), and receive a better quality of financial and accounting reporting (Berman, 2002; Kim & Venkatachalam, 2011). In this case, it is possible that the M&A investment decisions made by managers from sin acquirers are more likely to outperform other acquirers and may therefore experience higher merger abnormal stock returns.

This chapter develops the standard event study empirical method to clearly distinguish the effects of the sin rating of acquirers on shareholders' wealth in mergers and acquisitions. It finds that sin acquirers exhibit higher cumulative abnormal returns in M&A transactions than comparable firms. This evidence is consistent with the view that social norms play an effective monitoring role in controlling managers' opportunistic behaviour during M&A investment decisions. Sin acquirers are more likely to outperform other acquirers regarding M&A shareholder returns, because of the managerial pressure from the strict regulatory scrutiny and litigation risk. The findings are also consistent with those of Yoo et al. (2013) and Kim and Venkatachalam (2011), in that the high-quality financial reporting delivered by sin acquirers will reduce the issues of information asymmetry and adverse selection, and this will improve the ability of shareholders and the public to monitor managerial investment behaviours, thereby

enhancing M&A investment efficiency. This chapter also finds that sin acquirers prefer to substitute stock with cash for financing M&A deals, as ownership in a firm operating in a controversial business is not well accpeted as the currency. Moreover, sin acquirers generally take longer to complete an M&A deal, which is mainly due to the conflict of social norms between sin acquirers and non-sin target firms, which creates difficulties for post-deal integration.

The findings of this chapter will attract particular attention and interests to various stakeholders and will contribute to the literature in several aspects. Firstly, this chapter contributes to the economic implications of social norms and their behavioural effects on shareholder wealth and corporate investment efficiency. Secondly, this chapter demonstrates the payment preference of sin acquiring firms when financing M&A deals, and finds that the duration to complete M&A transactions is longer for sin acquirers. Thirdly, the findings extend and generalise the results of Hong and Kacperczyk (2009), by showing firm-level evidence of the neglect-effects of sin stocks. Finally, this chapter extends the determinants of M&A performance by showing social norms is another factor need to be considered.

1.4 Thesis Outline

This thesis is partitioned into five main chapters. Chapter 2 analyses the effects of governance quality on credit risk in cross-border M&As. Chapter 3 empirically examines the impact of CSR concerns on shareholders' wealth in mergers. Chapter 4 provides an assessment of the value of controversial social norms on mergers and acquisitions. Finally, Chapter 5 offers conclusions and directions for further research in domestic and cross-border M&As.

Chapter 2:

The Value of Corporate Governance on Credit risk:

Evidence from Cross-border M&As

2.1 Introduction

The fiduciary duty for corporate executives is to maximise the risk-adjusted value for their shareholders, which relies on two pillars: the maximisation of growth opportunities and the management of corporate risk. The 2008 financial crisis resulted in a strong concussion in the global credit market, which rocketed the average credit default swap (CDS) spreads from an average of 80 bps to above 1200 bps (Figure 2.1). There is increasing concern about the stability of the global credit market. This phenomenon sparked a powerful impetus for both higher cross-country coordination of regulations and capital requirements in the globalised, multinational financial environment.

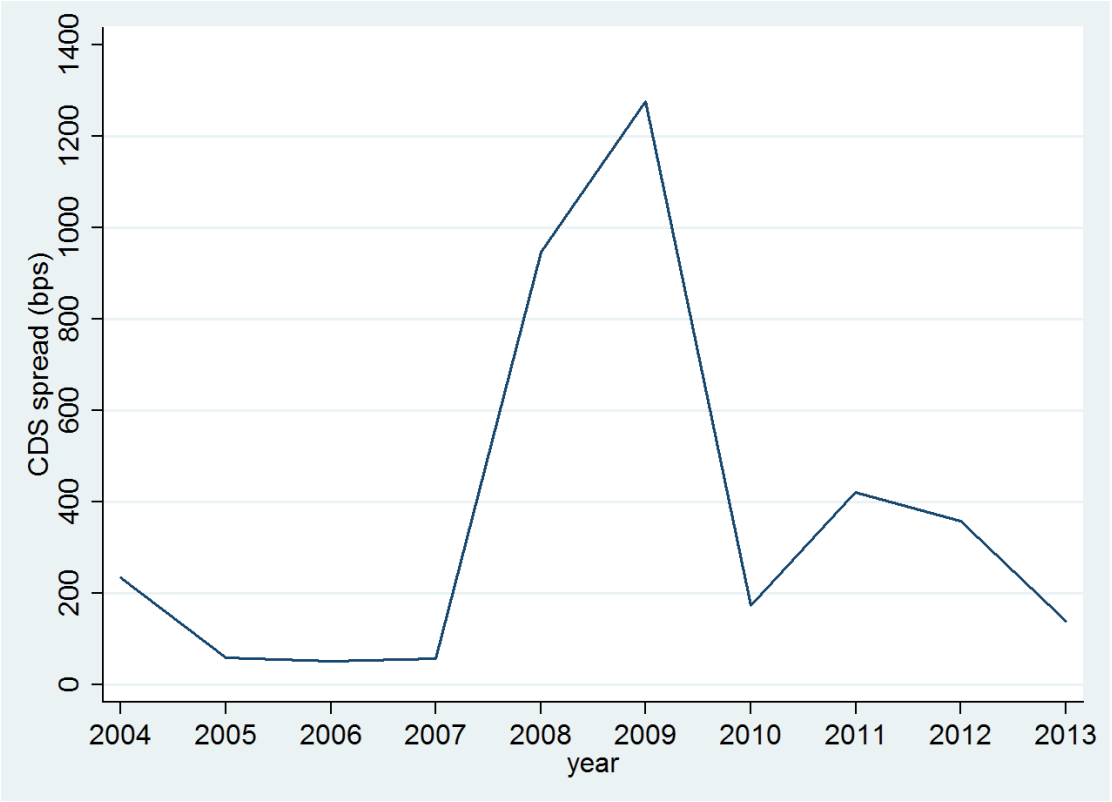
Cross-border M&As, those occurring beyond the national border, have developed considerably over the past few decades (Erel et al., 2012). According to a report by the Organization for Economic Cooperation and Development (OECD), cross-border M&A deals comprise 50% of the global foreign direct investment volume, and the proportion of cross-border transactions take up to 45% worldwide in 2007. Albuquerque et al. (2013) show that the total deal transaction value for cross-border M&As has gradually exceeded that of domestic M&As. Expansion through cross-border M&As enables firms to operate beyond regulatory restrictions in home countries. For example, there is wide variation between countries in corporate governance quality and the relative strength of legal protections for shareholders, creditors and investors. Cross-border M&As provide an ideal channel to study the economic implications of corporate governance quality on corporate credit risk.

Most empirical studies in the legal and finance literature focus on the economic implications of corporate governance and its legal spill-over effects for shareholder wealth. Wang and Xie (2009) reveal the effects of governance quality by studying the changes in control from M&As. The takeover return and operating performance of acquisitions increase and the benefits are shared by both acquiring and target shareholders. Martynova and Renneboog (2008) show that the governance regime and the relative corporate governance quality in different countries have influences on shareholders' wealth in cross-border deals. In addition, any corporate governance spill-over effects in M&As not only influence target firms

but also significantly affect the value of host country non-target companies (Albuquerque et al., 2013) and the entire industries in which target firms are located (Bris et al., 2008).

Figure 2. 1: Acquirer's CDS Spreads in Basis Points

This figure reports the results of the mean of acquirers' five-year monthly average credit default swap spreads in basis points in our sample.



As one of the most significant investment decisions made by companies, M&A deals not only affect a firm's potential return stream, they also change corporate risk. Previous studies show that the diversification could reduce the post-deal default probability, where evidence has been shown on the activity diversification (Van Lelyveld & Knot, 2009), the portfolio diversification (Emmons et al., 2004), and the geographic diversification (Hughes et al., 1999). However, M&A transactions might increase the corporate risk, because of aggressive managerial actions and risk-taking incentives for shareholders following these transactions. For example, while Furfine and Rosen (2011) show that acquirers' default risk will be increased in domestic mergers, Koerniadi et al. (2015) present the contrary evidence that indicates that

bidders experience a decrease in default risk when undertaking cross-border M&As.

While the effects of mergers and acquisitions on shareholder's wealth and corporate valuation have been widely investigated in the previous studies, there are few research investigating the multinational corporate risk in M&As. This chapter investigates the effects of the variation in corporate governance induced by cross-border M&As on acquirers' credit risk proxied by credit default swap spreads. To the best of our knowledge, Choi et al. (2010) was the first to investigate the impact of institutional environment differences on risk following an M&A announcement. Their analysis focuses on the economic effects of cross-border bank M&As on emerging markets. Lee et al. (2016) indicate that credit default swap spreads decline when operating under better property rights institutions or cross-listing stocks in a market with stricter disclosure requirements. This chapter contributes to the understanding on how a governance arbitrage mechanism works and, therefore, how it affects credit risk in cross-border M&As.

To examine the effect of corporate governance on credit risk in cross-border M&As, this chapter uses national-level corporate governance data and examines 4,962 cross-border M&As covering 41 countries over the period 2004–2013. Similar to Ismailescu and Kazemi (2010), we calculate corporate credit risk variation as the percentage change in credit default swap spread in a two-month period around the announcement dates of the M&As. We consider two widely known proxies for country-level corporate governance quality: creditor protection, constructed by La Porta et al. (1998) and Djankov et al. (2007); and shareholder protection (anti-director rights), compiled by La Porta et al. (1998) and Spamann (2009). We use two groups of measurements for the variations in cross-country corporate governance quality. The first measurement is to capture the intensity of governance quality differences by calculating the differences in creditor and/or shareholder protection scores between the acquirer and target countries, with a higher (or lower) score indicating a larger (or smaller) difference in governance quality. Second, we calculate binary variables to capture the relative (better/worse) governance quality between the acquirer and target countries.

Having controlled for the characteristics at the levels of firms, deals and countries, and included year fixed effects, this chapter finds that our primary explanatory variables have a

strongly significant negative effect on both creditor and shareholder protections. These results confirm that acquirers operating in a weaker corporate governance regime experience a reduction in credit risk after acquiring companies from countries with better corporate governance. Specifically, although CDS spreads increase by an average of 86 bps in cross-border M&As, acquiring target companies from countries with better creditor (or shareholder) protection decreases the CDS spread by 52 (or 53) bps respectively. This chapter further confirms the robustness of our findings by employing a piecewise specification in which the original difference in corporate governance scores is broken into its positive and negative components.

Doidge et al. (2007) suggest that better corporate governance benefits firms by reducing their cost of funds. Therefore, acquirers from a poorly governed regime have strong incentives to adopt corporate governance from better-governed countries with a higher quality of investor protection. When buying firms from countries that are under stricter creditor and/or shareholder protection, an acquirer will adjust its *modus operandi* to satisfy the more stringent regulations, thereby reducing the credit risk. Additionally, the findings also consistent with Djankov et al. (2004), who reveal that the deeper credit markets created by stricter legal protection for creditors have stronger power to seize collateral, which will further benefit the debt market. In this case, these creditor rights can reduce the risk that lenders will not repay loans.

On the other hand, this chapter shows that an acquirer's credit risk does not deteriorate when acquiring target firms that reside in a country with weaker corporate governance standards. These results suggest that executives' behaviour is still constrained by the more stringent legal environment of their home regime, and that rational managers are unlikely to "exploit" the weaker regulatory environment of the target company.

One concern in our findings is that the measure of the difference in the corporate governance standard may be a proxy for another dimension of distance between countries. Prior research have reported that the national cultural differences have impact on merger volumes and synergy gains (Ahern et al., 2015), and the takeover premium (Lim et al., 2015). Geographical distance increases information asymmetry, which plays an important role in affecting post-merger default risk (Koerniadi et al., 2015). Therefore, this chapter further

checks the robustness and control of the cultural and geographical differences between countries. Taking the residual measure of governance quality, we confirm the significant influence of corporate governance variation on acquirers' credit risk and that our findings are broadly unchanged; this is still true when we control for the additional effects from cultural and geographical differences.

Another potential limitation of this study is that weak corporate governance could be correlated with an inferior macroeconomic environment and that this may be correlated with poor asset quality. In order to ensure the findings of this chapter are not driven by unobservable influences from the asset quality of target firms, we first look at transactions involving listed (public) versus unlisted (private) target companies. Public and private firms differ in financial performance and risk management. Publicly listed companies have a greater degree of information transparency and are exposed to more stringent regulations, which will constrain the behaviour of management. Our primary corporate governance alternation hypothesis would imply a stronger effect of protections on acquirer credit risk in transactions involving a publicly listed target company, and therefore the management of the acquirer would be constrained by more stringent regulations. However, an explanation based on target asset quality would not make a similar prediction. We document that the effects of asymmetry in the relationship between differential corporate governance on CDS spread variation is more pronounced when acquiring a publicly listed target. Specifically, acquiring publicly listed target companies from countries with stronger creditor (or shareholder) protection results in 3 (or 3.8 times) higher CDS spread reduction compared with that of a private target company. These results suggest that the findings are not bias-driven by the unobservable asset quality of the target companies.

A second experiment considers the relative sizes of merger and acquisition deals. If our primary results are determined by the target firm's unobservable asset quality rather than by corporate governance, we should observe a stronger asymmetry effect on credit risk for those transactions with a larger deal size, because more target assets are acquired. We observe the opposite result: the coefficients of relatively small deals are slightly higher. These results further confirm the robustness of our corporate governance variation effects hypothesis. It also suggests that acquirers can alter the superior protections for investors regardless of the relative

deal size.

In summary, this chapter documents the value of national corporate governance on corporate credit risk reactions in cross-border M&As. It suggests that the acquirer's credit risk could benefit from more stringent regulation of the target's governance regime, while corporate credit risk does not deteriorate when takeover target firms reside in a country with weaker protections for investors. As such, the analysis and results in this chapter contribute to the literature from several perspectives.

Firstly, this chapter contributes to the extensive literature studying multinational corporate credit risk. While Lee et al. (2016) show firms' credit risk is reduced by exposing a foreign asset to a superior property protection environment and cross-listing it on exchange markets with stricter requirements, this chapter is the first study, in our knowledge, to investigate the effects of governance quality on an acquirer's credit risk. It contributes to the literature by offering a governance arbitrage strategy for firms to manage corporate credit risk by altering and bonding to a stricter creditor and/or shareholder protection regime through cross-border M&As.

Secondly, this chapter also extends the growing literature dealing with risk management in M&As. We find that the relative national corporate governance between countries is a determinant of corporate credit risk in cross-border M&As. This chapter complements the existing evidence that evaluates the relation between domestic mergers and default risk (Furfine & Rosen, 2011), cross-border mergers and default risk (Koerniadi et al., 2015), and bank mergers and default risk (Vallascas & Hagendorff, 2011).

Thirdly, this chapter extends the law and finance literature on the economic implications for firm performance of changes in corporate governance environments induced by M&A transactions. Most prior research focus on the effects on valuation and shareholder wealth caused by governance spill-over effects from the takeover targets' side (Bris et al., 2008; Albuquerque et al., 2013; Wang & Xie, 2009). In contrast, this chapter offers evidence of the economic implications for acquirers when cross-border M&As allow acquirers to adopt a stronger corporate governance standard to manage credit risk. Although Martynova and Renneboog (2008) show similar effects on takeover returns using data from European countries,

our analysis focuses on credit risk by incorporating more comprehensive data, involving deals from 41 countries worldwide; hence, this study captures both developed and emerging markets, with different levels of corporate governance qualities. In addition, our large sample of cross-country analysis complements the literature by suggesting that acquiring a target company reside in a country with less corporate governance regulations does not adversely affect credit risk. This is mainly because the managers are still under strict supervision from regulation in their home country.

The remainder of the chapter is organised as follows: Section 2.2 shows the data collection and summary statistics; Section 2.3 discusses the construction of the variables; Section 2.4 describes the empirical framework and results; Section 2.5 discusses the results of robustness checks and sensitivity tests; and Section 2.6 presents a summary and conclusion.

2.2 Data and Sample Construction

The sample constructed for the analysis is a group of domestic and cross-border M&As deals, which occurred from January 2004 through December 2013. The M&A data are gathered from the worldwide mergers and acquisition section of the Thomson Financial Securities Data Corporation (SDC) Platinum database. In order to explore how credit risk changes in merger and acquisition deals, these M&A data are merged with monthly CDS spreads from the Markit database.

We exclude observations with missing values on key characteristics, such as transaction value, payment method, public status, primary Standard Industrial Classification (SIC) codes, and the ownership percentage of the acquirer after the transaction. In order to focus on deals with a significant impact on the acquirer, we further confine the sample with the size (in terms of total assets) is at least 5% of the acquirer size and where ownership interest in the target company moves across the 50% threshold during the transaction. These criteria lead to a sample of 14,886 deals.

Given the international nature of this chapter, we further restrict our analysis to those countries with available data on corporate governance quality (creditor protection and

shareholder protection)[3]. Other country-level controls needed are the gross domestic product (GDP) per capita (from the World Development Indicators database); the ten-year government yield (from Thomson Reuters Datastream), which works as the proxy for the risk-free rate; the sovereign credit rating for each country (from Bloomberg); and measures of country-level cultural values from Hofstede (2001).

We also remove those deals with missing values for firm characteristics, which include: size of firm; leverage; market to book ratio; return on asset (sourced from the Worldscope database); and market data (sourced from the Thomson Reuters Datastream database). The above mentioned criteria lead to a final sample of 4,962 cross-border and domestic M&As, covering acquirers from 37 countries and targets from 41 countries.

Table 2.1 shows the sample distribution by the year of the deal announcement. The number of domestic and cross-border M&A deals vary considerably across years. There were 1,709 cross-border M&A deals and 3,253 domestic deals. The average deal size of domestic transactions ($907.5 million) was larger than that of cross-border deals ($884.8 million). The total value and number of cross-border deals was highest in 2007 (250 deals and $469.6 billion), while the lowest was in 2013 (99 deals and $54.5 billion). Regarding domestic deals, 2013 recorded the lowest number of deals (179) yet the highest average deal value ($1408.9 million).

The sample of this chapter is also geographically diversified, comprising of 41 countries from both developed and emerging markets. Table 2.2 reports the sample distribution by the acquirer and target countries, and their value distribution in cross-border and domestic M&As. The sample distribution by acquiring countries is shown in the Panel A of Table 2.2. United States was the most active acquirer in all kinds of deals during the sample period (1,854 deals totalling $2,356 billion), followed by Japan (675 deals totalling $173.6 billion) and France (485 deals totalling $288.4 billion). Many acquirers are from emerging markets, including Brazil, India, and Malaysia. The distribution by target countries is illustrated in the panel B of Table 2.2 presents. It is shown that companies from the United States were also the most actively

[3] The creditor rights data is gathered from La Porta et al. (1998) and Djankov et al. (2007). The anti-director rights (the proxy for shareholder protection) is from Spamann (2009).

involved target market in cross-border mergers and acquisitions (321 deals and $410.7 billion), followed by Australia (244 deals and $41.7 billion) and the United Kingdom (193 deals and $353.3 billion). A number of target companies are also from emerging markets, such as Mexico, Indonesia and India.

Table 2. 1

Sample Distribution by Deals Announcement Year and Countries

This sample makes up of cross-border and domestic M&As (those in which the ownership of acquirer after the transaction is more than 50%) in the period between 2004 and 2013 and that are listed on Thomson's SDC Platinum database. This table provides the sample distribution by M&A deal announcement years. The total deal value is calculated as the total amount of deal value of each transaction within the year.

Year	Cross-border deals			Domestic deals		
	Number of deals	Total deal value (Mil US$)	Mean Value (Mil US$)	Number of deals	Total deal value (Mil US$)	Mean Value (Mil US$)
2004	171	61010.68	356.79	343	228937.28	667.46
2005	212	180386.95	850.88	407	424384.94	1042.71
2006	214	165417.69	772.98	386	408868.78	1059.25
2007	250	469641.25	1878.57	466	287443.13	616.83
2008	210	198829.03	946.80	381	357737.34	938.94
2009	148	93472.17	631.57	352	422329.31	1199.80
2010	162	113721.25	701.98	291	273016.22	938.20
2011	108	65875.97	609.96	239	183827.84	769.15
2012	135	109235.85	809.15	209	113220.05	541.72
2013	99	54533.69	550.85	179	252200.63	1408.94
Total	1709	1512124.53	884.80	3253	2951965.52	907.46

Table 2. 2

Sample Distribution by Acquirer and Target Countries

This table reports the sample distribution by acquirer and target countries. The sample is made up of cross-border and domestic M&As between 2004 and 2013 that are available in SDC Platinum database. Panel A reports the distribution of acquirer countries and Panel B shows the distribution of target countries. The sample is divided into cross-border deals and domestic deals for number of deals and the total deal value. The total deal value is measured as the total amount of deal value of each M&As transaction within the year.

Panel A: Acquirer countries						
Countries	Cross-border deals		Domestic deals		All Deals	
	Number of deals	Total Value ($Million)	Number of deals	Total Value ($Million)	Number of deals	Total Value ($Million)
United States	468	303860	1386	2052219	1854	2356079
France	350	213450.7	135	75008.8	485	288459.5
Australia	25	158025.3	182	127651	207	285676.3
United Kingdom	143	145567.5	189	111472.6	332	257040.1
Switzerland	99	152603.6	21	53417.3	120	206020.8
Germany	126	134490.6	72	54602.6	198	189093.2
Japan	156	69439.4	519	104253.8	675	173693.2
Spain	59	108932.1	77	63939.2	136	172871.3
Canada	38	39903.2	78	51250.3	116	91153.5
Brazil	8	1594.5	61	73687.4	69	75281.9
Italy	29	31019.5	94	36285.8	123	67305.3
Norway	16	13611.5	13	36606.1	29	50217.6
Netherlands	52	37275	18	9899.6	70	47174.5
Israel	14	29884.1	5	338.1	19	30222.2
South Korea	15	7685.7	75	19919.5	90	27605.1
Finland	22	16791.4	22	6168.6	44	22960.1
Denmark	7	8031.1	10	7633.6	17	15664.7
India	22	5939.1	41	9628.4	63	15567.5
Sweden	57	10920.7	15	4318.5	72	15239.2
Singapore	43	8076.8	44	6770.9	87	14847.8
Hong Kong	24	6023.6	47	8014.1	71	14037.8
Belgium	4	2098	12	11561.8	16	13659.8
Malaysia	9	3761.4	35	2137	44	5898.5
Mexico	5	118.3	15	5311	20	5429.2
Indonesia	0	0	10	3575.4	10	3575.4
Austria	4	746.8	4	2705.1	8	3452
Philippines	0	0	18	3334.4	18	3334.4
Chile	4	658.9	1	2201.7	5	2860.6
Colombia	0	0	6	2553.2	6	2553.2
Portugal	4	1151.3	10	1159.9	14	2311.1
Thailand	0	0	9	1503.4	9	1503.4
Ireland	2	11.1	4	1183	6	1194
New Zealand	0	0	4	763.5	4	763.5
Greece	2	374.6	4	369.3	6	743.9
Turkey	1	78.4	6	509.4	7	587.8
Pakistan	0	0	1	12.7	1	12.7

(*Continued*)

Table 2.2 – *Continued*

Panel B: Target countries						
Countries	Cross-border deals		Domestic deals		All Deals	
	Number of deals	Total Value ($Million)	Number of deals	Total Value ($Million)	Number of deals	Total Value ($Million)
United States	321	410791.8	1386	2052219.2	1707	2463011
United Kingdom	193	353337.5	189	111472.7	382	464810.2
Australia	244	41732.1	182	127650.9	426	169383
Netherlands	33	143148.8	18	9899.5	51	153048.3
Japan	33	29966.1	519	104253.9	552	134220
Canada	84	82658.1	78	51250.3	162	133908.4
Germany	92	57949.8	72	54602.6	164	112552.4
Brazil	38	36608.1	61	73687.5	99	110295.5
France	77	30878.4	135	75008.8	212	105887.1
Spain	47	23027.4	77	63939.2	124	86966.6
Italy	54	45392.4	94	36285.8	148	81678.2
Switzerland	37	22963.5	4	53417.3	41	76380.8
Belgium	21	54041.7	12	11561.8	33	65603.5
Norway	23	12323.7	13	36606.1	36	48929.9
Sweden	40	26626.4	15	4318.5	55	30944.9
South Korea	36	7795.9	75	19919.5	111	27715.4
India	84	13457.1	41	9628.4	125	23085.5
Mexico	41	16020.3	15	5311	56	21331.3
Hong Kong	34	10858.8	47	8014.1	81	18872.9
Finland	9	10813.7	22	6168.6	31	16982.4
Singapore	27	8301.4	44	6770.9	71	15072.4
Ireland	22	12561.6	4	1183	26	13744.6
Chile	23	9266.4	1	2201.7	24	11468.1
Denmark	18	2718.9	10	7633.6	28	10352.6
Philippines	10	8498.7	18	509.4	28	9008.1
Israel	18	7097.9	5	338.1	23	7436
Austria	11	3436.3	4	2705.1	15	6141.5
Portugal	7	4793.9	10	1159.9	17	5953.8
Indonesia	28	2253.5	10	3575.4	38	5828.9
New Zealand	10	4412.8	4	763.5	14	5176.3
Malaysia	20	2436.2	35	2137	55	4573.2
Taiwan	24	4249.3	0	0	24	4249.3
Turkey	22	802.5	6	3334.4	28	4136.9
Colombia	16	1575.5	6	2553.2	22	4128.8
Thailand	14	1170.9	9	1503.4	23	2674.3
Greece	6	2145.6	4	369.3	10	2514.9
Uruguay	3	2415.7	0	0	3	2415.7
Peru	11	1953.7	0	0	11	1953.7
Argentina	21	1541.9	0	0	21	1541.9
Ecuador	3	94.6	0	0	3	94.6
Pakistan	1	5.5	1	12.7	2	18.1

2.3 Variable Construction

This chapter applies a standard event study methodology to examine whether differences between countries in corporate governance quality have any impacts on credit risk in cross-border M&As. We measure the acquirer' five-year CDS spread change around the M&A announcement date, and take it as our primary dependent variable, while our main explanatory variables are the relative governance quality between countries. The development of the variables is described below.

2.3.1 Credit Risk Change

Credit default swaps (CDS) are a significant financial innovation in the debt market and are similar to financial insurance contracts, whereby the buyer pays periodic insurance premiums to the seller for coverage associated with losses from adverse credit events such as bankruptcies. They provide an opportunity for the buyer to hedge or obtain speculative benefits from adverse credit events. Just like other derivatives, a CDS can be viewed as a "side bet" on the underlying assets, with no effect on the fundamentals of the referenced firms at first glance. The actual CDS transactions reflect the price of CDS agreed between counterparties, whereas CDS quotes show the sell-side offering price of CDS contracts. In M&A deals, the corporate reconstruction and redistribution of wealth from creditors generally affect the CDS spread.

Following the prior literature, the acquirer's credit risk is proxy by the five-year CDS spread. CDS are provided with different maturities, and we select the most liquid five-year CDS contract as our main measurement (Acharya & Johnson, 2007). Prior studies have shown that CDS more accurately and quickly reflect the variation in credit risk than corporate bond yield spreads (Longstaff et al., 2005; Ericsson et al., 2009).

We measure credit risk change as the percentage variation in CDS spread in a two-month period around the date of the M&A announcements[4]. Given that the CDS spread varies across a wide range between different countries, we use the percentage variation, instead of the absolute value of CDS spread change, to address the asymmetric effect caused by the same

[4] See Ismailescu and Kazemi (2010) for a similar approach.

basis point change in CDS spreads. Specifically:

$$\Delta CDS = \frac{CDSspread_{t+1} - CDSspread_{t-1}}{CDSspread_{t-1}} \quad (1)$$

where $CDSspread_{t+1}$ is the acquirer's average daily CDS spread during the month after the deal announcement month, and $CDSspread_{t-1}$ is the average value of daily spread in the month prior to the month of the deal announcement. To minimise outlier effects, this measure is winsorised at the 1% level. The statistics of acquirers CDS spread is reported in Table 2.3. The average percentage change of CDS spread is 0.861 and its standard deviation is 6.03.

2.3.2 Corporate Governance Quality

Cross-border M&As offer a channel for firms to change the regulatory environment and manage the credit risk by acquiring targets from countries with a different corporate governance environment. As a result, the objective of this chapter is to empirically study whether the governance quality of the target company's country affects the credit risk of an acquirer in cross-border M&As. We consider two widely known proxies for country-level corporate governance quality: creditor and shareholder protection.

Creditor rights is the measure used to evaluate the level of legal protection for creditors making decisions that influence their value position. Our creditor protection measure is depended on Djankov et al. (2007) and La Porta et al. (1998), which take into account four different aspects: the level of creditors' power when making restructuring decisions; the priority consideration given to creditors when breaking out of bankruptcy; the willingness of creditors to stay; and creditors' control of corporate assets during restructuring. The metrics for this measure range from zero to four, with higher numbers representing better creditor protection.

As a proxy for shareholder protection, this chapter employs an anti-director rights measurement from Spamann (2009) and La Porta et al. (1998), which assesses the level of government laws and enforcements that protect shareholders' rights. This measure is defined on a scale from zero to six, and is created by with one point scored for each of the following

that applies: 1) the rights of shareholders include proxy voting by mail; 2) shareholders do not need to deposit stocks before the general meeting of shareholders; 3) it is allowed to have cumulative voting or the representation of minority shareholder as the board of directors; 4) the oppressed minority process has been implemented; 5) the minimum capital requirements of shareholders to request an extraordinary general meeting around 10%; or 6) shareholders' priorities can only be weakened by shareholder votes. As for the previous measure, a higher number represents stronger shareholders' rights and protection.

Given our focus on cross-border M&As, we are mainly interested in the differences in the corporate governance quality between acquirer and target countries. We define *Creditor_DIFF* and *Shareholder_DIFF* as the value difference between countries of acquirers and targets in creditor and shareholder protection ratings respectively[5]. Positive values for these variables suggest that the M&A target is from a country with weaker governance quality than the country of the acquirer. A larger governance difference means the creditor and/or shareholder protection is better for the acquirer than the target; in other words, acquirers can gain greater benefits and are more likely to squeeze out the target firms. We also define binary versions of these variables: *Creditor_NEG* and *Shareholder_NEG* are indicator variables that capture cases in which the target firms are operated in countries that have better governance quality than that of the acquirer. *Creditor_POS* and *Shareholder_POS* capture the opposite case. We will use these variables in a non-linear specification of our model.

2.3.3 Control Variables

Cross-border M&As are complex transactions that affect company life along multiple dimensions. In order to pinpoint the effects of corporate governance, characteristic variables at the firm, deal, and country levels that might affect credit risk are further controlled.

The Merton (1974) structural model provides some guidance on CDS determinants. First, the model implies that stock return volatility positively influences the probability of default. We define *Volatility* as the variance of monthly stock returns within each year and

[5] See Martynova and Renneboog (2008) for a similar approach.

expect this quantity and CDS spreads to be positively correlated. In addition, the Merton model implies that leverage will have a positive relationship with probability of default, due to the shorter distance to default. We therefore define *Leverage* as the ratio of the sum of short-term and long-term debt to the sum of stock market capitalisation, short-term and long-term debt.

Merton's structural approach also postulates that the default risk is negatively related to the risk-free rate (*Risk Free*), which we proxy with the yield-to-maturity of ten-year government bonds and the default risk. Finally, the Merton model indicates that the default probability and the market value of equity are negatively correlated. We use monthly stock returns (*Return*) to represent changes in market value of equity. A company with higher stock return will increase the firm value, and this will theoretically reduce the CDS spreads; therefore, stock returns and CDS spreads are negatively correlated.

Moeller et al. (2004) suggest that firm size (*Size*), measured as the natural logarithm of total assets, also have impact on M&A performance due to larger firms normally earn higher M&A announcement returns. We also include return on asset *(ROA)* and control for the market-to-book ratio (*MTB*) to isolate the effects related to firm performance.

With large acquisitions, the credit risk of the acquirer can be affected by specific characteristics of the deal itself. Vallascas and Hagendorff (2011) suggest that a larger deal size might benefit the reduction of risk through diversification effects. Here we define the relative size of M&As as the ratio of the deal value of M&As to the market value of acquirer (*RelSize*). The payment method for acquisitions may also affect the acquirers' default probability (Rossi & Volpin, 2004). All cash purchases may lead to increased leverage and/or a depletion of cash reserves (Vallascas & Hagendorff, 2011; Furfine & Rosen, 2011); therefore, we define *Cash* as a dummy variable value equals to one if the M&A transactions are fully paid with cash and zero otherwise.

In addition, target firms' status also need to be considered. The M&A of a private target could generate higher risk than the acquisition of a publicly listed company, due to the lower level of transparency of the firm. We define *Public Target* as a dummy variable value equals to one if the targets are publicly listed firms and zero otherwise. Koerniadi et al. (2015) and Furfine and Rosen (2011) argue that acquisition in unrelated industries reduces default risk via

an increase in corporate diversification. We define *Related* as a dummy variable value equals to one when the acquirer and target companies are coming from the same industry and zero otherwise.

Geographic distance can also affect the risk in cross-border M&A. Ragozzino and Reuer (2011) and Carling and Lundberg (2005) argue that the physical distance between countries have influence on the level of risk and information asymmetry. We define *Distance*, calculated as the natural logarithm of the geographical distance (measured between the respective capital cities) between acquirer and target countries.

The cross-border M&A transactions may also subject the influence from the sovereign risk of countries. Different authors have documented the effect of sovereign risk change on corporate CDS (e.g. Ismailescu & Kazemi, 2010; Afonso et al., 2012). To address this issue, we build *Rating_DIFF* as the value difference of the sovereign credit ratings between acquirer and target countries. When the acquirer resides in a country where the credit rating is better than that of the target, this difference is positive. To build this variable, we use Standard & Poor's sovereign ratings converted to a scale from 0 (D) to 21 (AAA). Finally, the economic development of acquiring countries represented by the per capita (*GDP*) is also controlled.

Corporate governance does not exist in a vacuum. The same historical background that gave rise to the different legal environments analysed by La Porta et al. (1998) also has profound influences on the cultural background of countries around the world. Different studies analyse the importance of cultural distance in cross-border M&As (e.g. Chakrabarti et al., 2009, Francis et al., 2014; Ahern et al., 2015). In this chapter, we adopt different measures of cultural distance to better isolate the effects of corporate governance at the national level.

We choose Hofstede (1980, 2001) as the primary source of country-level measures of culture. Hofstede's measures are based on a survey conducted on more than 100,000 individuals from 40 countries, and quantify culture along four dimensions: individualism (IDV), uncertainty avoidance (UAI), masculinity (MAS), and power distance (PDI). For each dimension, we calculate the value difference of each dimension between the acquirer and target countries (see Appendix A.2 for more detailed definition of cultural distance measures).

Table 2. 3

Summary Statistics for Chapter 2

This table reports the summary statistics of variables. ΔCDS is the two-month percentage change in acquirer's five-year CDS spread for non-event country for the period [t+1, t-1], where t is the mergers and acquisitions month. *Creditor_DIFF* measures the value difference (acquirer minus target) of creditor rights between acquirer and target. *Shareholder_DIFF* measures the value difference (acquirer minus target) of anti-director rights between acquirer and target. *Creditor_NEG* and *Credtior_POS* measures the relative creditor rights strengthen between acquirer and target nations. *Shareholder_NEG* and *Shareholder_POS* measures the relative anti-director rights strengthen between acquirer and target nations. In order to minimize the influence of outliers. ΔCDS is winsorised at the 1% level. For other variables' definition see Appendix A.1.

Variables	Numbers	Mean	P25	Median	P75
Panel A: dependent variable &main explanatory variables					
ΔCDS	4962	0.861	-0.123	-0.011	0.187
Creditor_DIFF	4962	-0.084	0.000	0.000	0.000
Shareholder_DIFF	4962	-0.037	0.000	0.000	0.000
Creditor_NEG	4962	0.159	0.000	0.000	0.000
Credtior_POS	4962	0.122	0.000	0.000	0.000
Shareholder_NEG	4962	0.159	0.000	0.000	0.000
Shareholder_POS	4962	0.132	0.000	0.000	0.000
Panel B: Firm characteristics					
Size	4962	29.749	17.610	35.153	38.433
Leverage	4962	0.381	0.168	0.324	0.554
ROA	4962	0.094	0.031	0.067	0.116
MTB	4962	2.355	1.267	1.890	2.946
Volatility	4962	0.008	0.002	0.005	0.009
Return	4962	0.005	-0.039	0.009	0.055
Panel C: Deal characteristics					
Related	4962	0.295	0.000	0.000	1.000
Cash	4962	0.430	0.000	0.000	1.000
Public Target	4962	0.251	0.000	0.000	1.000
RelSize	4962	-24.435	-32.798	-29.447	-12.330
Panel D: Country characteristics					
GDP	4962	10.541	10.504	10.688	10.780
Risk Free	4962	3.701	2.604	3.869	4.534
Rating_DIFF	4962	0.629	0.000	0.000	0.000
Uncertainty Avoidance	4962	0.616	0.000	0.000	0.000
Power Distance	4962	-1.012	0.000	0.000	0.000
Individualism	4962	2.113	0.000	0.000	0.000
Masculinity	4962	1.088	0.000	0.000	0.000
Common official language	4962	0.103	0.000	0.000	0.000
Common border	4962	0.054	0.000	0.000	0.000
Pop. Weighted Distance	4962	2851.315	408.960	1853.802	2079.297

The descriptive statistics of the variables used in this chapter is reported in Table 2.3. The average CDS percentage change around the merger and acquisition events is 0.861. The average value of creditor rights difference between acquirer and target nations is -0.084, while the average difference in shareholder rights is -0.037.

2.4 Governance Quality and Credit Risk

This section reports our empirical findings regarding the impact of governance quality on corporate credit risk during cross-border M&As. First, we present our baseline panel regression model. Secondly, we show the effects of corporate governance differences and variation on credit risk. We then address the potential concerns regarding the effects from another dimension of distance between countries.

M&As are likely to affect corporate risk along multiple dimensions, therefore we employ a multifactor approach in which we isolate the role of country-level governance quality by controlling for the characteristics at different levels. Our initial model can be represented as follows:

$$\Delta CDS_{it} = \alpha + \beta CG\_DIFF_{IJ} + \gamma Firm\_Controls_{ijt} + \theta Deal\_Controls_{ijt} + \lambda Country\_Controls_{ijt} + Year_t + \varepsilon \quad (2)$$

where *t* indicates the month when the M&As were announced, lowercase *i* and *j* index are the acquirer and target firm respectively. The uppercase *I* and *J* index are the respective countries. ΔCDS_{it} is the dependent variable that is the percentage change in CDS spreads for the acquirer, measured around the time of the acquisition (see section 2.3.1 for the definition). A positive number indicates that the market recognises increased credit risks.

CG_DIFF_{IJ} is our main variable of interest (see section 2.3.2) and captures the difference in corporate governance quality (protection for creditor or/and shareholder) between acquirer and target countries. As detailed previously, a positive value indicates that target companies are located in countries that have poorer governance quality than acquirers.

$Firm\_Controls_{ijt}$, $Deal\_Controls_{ijt}$ and $Country\_Controls_{ijt}$ are three vectors of control variables for the firm-level, deal-level and country-level respectively, as defined in section 2.3.3. All models also include year fixed effects and standard errors are double clustered at the levels of acquirer and target country.

2.4.1 Corporate Governance Difference and Variation

Results from OLS estimations in Table 2.4 show consistent positive estimations (albeit not all significant) for our main coefficient of interest, indicating that M&As of companies in countries with better corporate governance tend to decrease the credit risk of the acquirer. The opposite is true for acquisitions in countries with weaker corporate governance standards. These results imply that the changes in regulatory environment induced by cross-border M&As affect credit risk.

The lack of statistical significance for some of our estimations is due to the assumption of a linear effect of governance differences on credit risk. When buying a target company from a country with better governance quality for creditors and/or shareholders, acquirers will have to adjust its *modus operandi* to satisfy the more stringent regulations. Conversely, a deterioration in protection should not be observed when the acquirer reside in a country with weaker governance standards, because management behaviour is still constrained by the more stringent home regulations.

If this intuition is true, then our original model is partially mis-specified, because it assumes a linear relationship between our governance quality variables over the entire domain. To address this issue, we further test an alternative specification, in which the effect of governance quality on credit risk in individual cases is tested, replacing the difference in governance quality between acquirer's and target's home countries with two dummy variables for cases where the difference is strictly negative or positive. Alternatively, we use piecewise specification in which we estimate separate coefficients for the positive and negative regions of our main variables.

Table 2. 4
Corporate Governance Quality and Credit Risk

The table presents OLS estimations of the change in acquirer's five-year CDS spread over the national corporate governance quality difference between countries for a sample of 4962 cross-border M&As from 2004 to 2013. The dependent variable is the percentage variation in CDS spread of acquirer around the M&A announcement dates. *CG_Diff* is a group of the main explanatory variables which defined as the difference in creditor protection (models 1-3) or shareholder protection (models 4-6) scores between acquirer and target countries. Creditor protection scores based on La Porta et al. (1998) and Djankov et al. (2007). As a proxy for shareholder protection, anti-director rights scores is used for proxy which sourced from La Porta et al. (1998) and Spamann (2009). In different specifications, a series of firm-, deal- and country-level characteristics is controlled. All models include year fixed effects and standard errors are clustered both at the bidder and target home country level. ***, ** and * indicate significance levels at the 1%, 5% and 10% respectively.

	Creditor Rights			Shareholder Rights		
	(1)	(2)	(3)	(4)	(5)	(6)
CG_Diff	0.172**	0.146*	0.152**	0.084	0.094	0.117
	(2.121)	(1.765)	(2.107)	(0.975)	(1.138)	(1.358)
Size		-0.048**	-0.058**		-0.048**	-0.058**
		(-2.198)	(-1.971)		(-2.352)	(-2.036)
Leverage		0.282	0.281		0.288	0.286
		(0.526)	(0.537)		(0.530)	(0.537)
ROA		0.243	0.401		0.280	0.442
		(0.232)	(0.375)		(0.266)	(0.411)
MTB		-0.051	-0.045		-0.048	-0.042
		(-1.424)	(-1.364)		(-1.328)	(-1.283)
Related		0.252	0.285		0.256	0.287
		(1.240)	(1.255)		(1.237)	(1.248)
Cash		-0.139	-0.177		-0.138	-0.172
		(-0.801)	(-1.033)		(-0.778)	(-1.002)
Volatility		-10.445	-11.695		-10.091	-11.215
		(-0.657)	(-0.672)		(-0.631)	(-0.643)
Return		-9.695***	-9.784***		-9.736***	-9.825***
		(-3.714)	(-3.765)		(-3.733)	(-3.777)
Public Target		0.550	0.489		0.565	0.504
		(1.249)	(1.153)		(1.290)	(1.195)
RelSize		-1.090**	-1.145**		-1.117**	-1.162**
		(-2.157)	(-2.190)		(-2.250)	(-2.259)
GDP			-0.322*			-0.310*
			(-1.764)			(-1.650)
Risk Free			-0.217***			-0.213***
			(-2.881)			(-2.858)
Rating_Diff			0.050			0.056
			(0.976)			(1.063)
Constant	0.318	2.024**	7.276**	0.329*	2.039**	7.114**
	(1.646)	(2.021)	(2.468)	(1.803)	(2.139)	(2.388)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4962	4962	4962	4962	4962	4962
Adj. R^2	0.032	0.051	0.054	0.031	0.051	0.053

Table 2. 5
Asymmetric Effect of Corporate Governance Quality

The table shows OLS estimations of the change in acquirer's five-year CDS spread over positive and negative differences in national corporate governance quality between acquirer's and target's home country for a sample of 4962 cross-border M&As from 2004 to 2013. The dependent variable is the percentage variation in CDS spread of acquirer around the M&A announcement dates. To allow for an asymmetric effect of governance quality difference on credit risk, the main explantory variables in Panel A, *CG_Pos* and *CG_Neg*, are defined as dummy variables that indicate whether the difference creditor protection (models 1-3) or shareholder protection (models 4-6) scores between acquirer's and target's country is positive or negative. In Panel B, we employ a piecewise specification where the original difference in scores is broken into its positive and negative components *CG_Diff [0, +Inf]* and *CG_Diff [-Inf, 0)*, respectively. Creditor protection scores from La Porta et al. (1998) and Djankov et al. (2007). Anti-director rights scores is used for the proxy for shareholder protection, which sourced from La Porta et al. (1998) and Spamann (2009). In different specifications, a series of firm-, deal- and country-level characteristics is controlled. All models include year fixed effects and standard errors are clustered both at the bidder and target home country level. ***, ** and * indicate significance level at the 1%, 5% and 10% respectively.

Panel A						
	Creditor Rights			Shareholder Rights		
	(1)	(2)	(3)	(4)	(5)	(6)
CG_Pos	0.356	0.241	0.134	-0.199	-0.226	-0.322
	(0.707)	(0.481)	(0.345)	(-1.400)	(-1.400)	(-1.355)
CG_Neg	-0.452*	-0.436*	-0.516**	-0.364**	-0.388**	-0.525***
	(-1.743)	(-1.729)	(-2.412)	(-1.972)	(-2.285)	(-3.122)
Size		-0.049**	-0.058*		-0.049**	-0.057**
		(-2.199)	(-1.963)		(-2.295)	(-1.980)
Leverage		0.283	0.277		0.273	0.262
		(0.541)	(0.544)		(0.510)	(0.498)
ROA		0.210	0.359		0.227	0.388
		(0.195)	(0.331)		(0.213)	(0.359)
MTB		-0.050	-0.043		-0.048	-0.041
		(-1.431)	(-1.348)		(-1.308)	(-1.248)
Related		0.251	0.284		0.264	0.296
		(1.244)	(1.257)		(1.263)	(1.281)
Cash		-0.143	-0.179		-0.143	-0.177
		(-0.814)	(-1.032)		(-0.811)	(-1.020)
Volatility		-10.490	-11.666		-10.558	-11.598
		(-0.648)	(-0.666)		(-0.654)	(-0.662)
Return		-9.670***	-9.766***		-9.730***	-9.819***
		(-3.695)	(-3.750)		(-3.752)	(-3.802)
Public Target		0.550	0.489		0.558	0.491
		(1.248)	(1.161)		(1.296)	(1.186)
RelSize		-1.120**	-1.189**		-1.181**	-1.225**
		(-2.201)	(-2.199)		(-2.301)	(-2.361)
GDP			-0.311*			-0.296*
			(-1.771)			(-1.674)
Risk Free			-0.216***			-0.214***
			(-2.969)			(-2.985)
Rating_Diff			0.056			0.070
			(1.139)			(1.194)
Constant	0.320	2.081**	7.222**	0.419**	2.181**	7.076**
	(1.159)	(2.023)	(2.510)	(2.248)	(2.171)	(2.447)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4962	4962	4962	4962	4962	4962
Adj. R^2	0.032	0.052	0.054	0.031	0.051	0.054

(*Continued*)

Table 2.5 – *Continued*

	Panel B					
	Creditor Rights			Shareholder Rights		
	(1)	(2)	(3)	(4)	(5)	(6)
CG_Diff [0, +Inf]	0.107	0.058	0.049	-0.110	-0.116	-0.155
	(0.670)	(0.356)	(0.402)	(-0.786)	(-0.817)	(-0.956)
CG_Diff [-Inf, 0)	0.220**	0.209**	0.226***	0.253*	0.272**	0.358***
	(2.092)	(2.111)	(2.813)	(1.794)	(2.001)	(4.043)
Size		-0.048**	-0.058*		-0.050**	-0.058**
		(-2.201)	(-1.963)		(-2.353)	(-2.014)
Leverage		0.277	0.274		0.286	0.280
		(0.525)	(0.532)		(0.533)	(0.535)
ROA		0.215	0.374		0.223	0.379
		(0.201)	(0.345)		(0.207)	(0.348)
MTB		-0.050	-0.043		-0.048	-0.042
		(-1.401)	(-1.305)		(-1.311)	(-1.250)
Related		0.252	0.284		0.259	0.289
		(1.238)	(1.253)		(1.244)	(1.256)
Cash		-0.137	-0.173		-0.139	-0.170
		(-0.775)	(-0.994)		(-0.787)	(-0.983)
Volatility		-10.452	-11.586		-10.584	-11.602
		(-0.652)	(-0.665)		(-0.655)	(-0.663)
Return		-9.701***	-9.791***		-9.730***	-9.820***
		(-3.704)	(-3.758)		(-3.745)	(-3.791)
Public Target		0.550	0.488		0.555	0.488
		(1.258)	(1.160)		(1.288)	(1.172)
RelSize		-1.126**	-1.180**		-1.180**	-1.217**
		(-2.183)	(-2.189)		(-2.289)	(-2.298)
GDP			-0.309*			-0.303*
			(-1.724)			(-1.656)
Risk Free			-0.215***			-0.211***
			(-2.981)			(-2.971)
Rating_Diff			0.054			0.070
			(1.074)			(1.235)
Constant	0.350	2.095**	7.186**	0.397*	2.178**	7.135**
	(1.524)	(2.048)	(2.493)	(1.894)	(2.169)	(2.444)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4962	4962	4962	4962	4962	4962
Adj. R^2	0.032	0.051	0.054	0.031	0.051	0.054

The results of the asymmetric effect of corporate governance quality on acquirer's credit risk are reported in Table 2.5. The effects of our main variables of interest (creditor and shareholders rights) are statistically significant (at 1% level) in the negative region, including after controlling for factors from the firm-, deal- and country- levels. These results confirm the suggestion that companies from countries with weaker investor protection experienced a reduction in credit risk after acquiring companies in countries with better governance, but did not increased after acquisitions from countries with weaker investor protection. There was no deterioration in credit risk because the behaviour of management is still constrained by the stronger legal environment in the home country. Point estimates results in Panel A of Table 2.5 imply that acquirers who completed M&As in countries with better creditor protection experienced a reduction in CDS spread of 52 bps (relative to an acquisition in a country with similar levels of protection); similarly, M&As in countries with better shareholder protection led to a relative reduction of 53 bps. This effect is substantial, considering that CDS spread generally increase 86 bps in our dataset.

Panel B of Table 2.5 shows the results from further piecewise specifications, in which the original difference in scores is broken into its positive and negative components, *CG_Diff [0, +Inf]* and *CG_Diff [-Inf, 0)* respectively. Point estimates from our piecewise specification in Panel B paint a similar picture with Panel A. While acquiring target firms from a country with a similar level of creditor (or shareholder) protection leads to an average increase in CDS spread of 91 bps (or 95 bps), an acquirer from a country with weaker governance standards completing a transaction in a country with the higher level of protection would experience a reduction in CDS spread of 13 bps.

The results of this non-linear specification further confirm our main hypothesis that acquirers can benefit from completing mergers and acquisitions in countries with better corporate governance frameworks. The asymmetric nature of these results is not compatible with an alternative explanation based on idiosyncratic firm risk. It could be assumed that the quality of a country's governance standard may proxy for the average level of idiosyncratic firm risk, and so buying a company located in a country with better governance would mechanically lower the average risk level of the firm's combined assets (and consequently the

CDS spread). If this was the main driver behind our results, we should observe a symmetric effect for firms completing acquisitions in countries with worse governance quality. The fact that we do not observe this effect is consistent with our hypothesis: managers' behaviour is constrained by the better regulatory framework of their own country, and they cannot "exploit" the weaker regulatory environment of the target company.

2.4.2 Geographical and Cultural Distance

A possible caveat to our results is that our measure of the difference in corporate governance environment may proxy for another dimension of distance between countries. From the literature, we know that cultural differences influence the performance of cross-border M&As, and this may leads to the difficulties in post-transaction integration and expected reduction in synergies (Francis et al., 2014; Chakrabarti et al., 2009; Ahern et al., 2015). Besides, geographical distance between countries may increase information asymmetry (Ragozzino & Reuer, 2011; Carling & Lundberg, 2005). To the extent that investors anticipate these effects, these quantities may also affect the bidder's credit risk.

To assess the relevance of this confounding effects and to control for the country-level effects, we can undertake regression analysis of the difference in governance quality for all the country pairs in our sample over the measures of cultural and geographical distance. We employ three different methods to determine the geographic and linguistic differences between the acquirer and the target countries. The first measure is a variable to examine whether the acquirer and target countries use a common official primary language. The second measure is a variable that evaluates whether the acquirer and target countries have a common border. The third measure is the population-weighted geographical distance (kilometres) between countries.

Our primary cultural distance measurement is based on Hofstede (2001). We choose the Hofstede framework because it is the most assured culture measure[6]. Hofstede measures are scored on four orthogonal dimensions: individualism (IDV), uncertainty avoidance index

[6] See Kirkman et al. (2006) for an investigation of the Hofstede measure as a tool for correcting cultural differences.

(UAI), power distance index (PDI) and masculinity (MAS)[7]. Their cultural measurements are depended on a large value survey across IBM subsidiaries in 50 countries[8]. For each dimension, we then calculate the value differences between country pairs.

Table 2.6 reports the results of a Tobit estimation of the difference in national corporate governance quality for all country pairs in our sample, over a series of measures of geographical and cultural distance between countries. The dependent variable is measured as the difference in the creditor and shareholder protection scores between the acquirer and the target country. The main explanatory variables are: indicators of the presence of a common border, the adoption of the same official language, a measure of population-weighted geographical distance, and the four measures of cultural distance.

From the results in Table 2.6, we see that geographical distance (proxied by the sharing of a common border or by the population weighted average distance between countries) has no effect on the difference in governance quality. However, the measure of cultural distance developed in Hofstede (1980, 2001) has a highly significant (at 1% level) effect on the difference in governance quality. It is to note that we do not have any prior hypothesis on the directionality of this effect, nor are we making any causality claim; however, it may be important as a confounding effect.

To assess the robustness of our findings, we derive a measure of the residual difference in governance quality from the residual term of models 5 and model 10 in Table 2.6. These quantities serve as the portion of the difference in creditor and shareholder protection between each pair of countries that are orthogonal with respect to cultural and geographical distance. We can then use this residual measure of governance quality in our main experiment.

[7] See appendix A.2 for more detailed information of Hofstede cultural dimensions.

[8] The fifth dimension is long-term orientation (LTO), which was added later and covers only 23 countries. Therefore, we use the original four dimensions to calculate the Hofstede cultural distance.

Table 2. 6

Difference in Governance Quality and Distance between Countries

The table reports the results of Tobit estimations of the difference in national corporate governance quality for all country pairs in our sample over a series of measures of geographical and cultural distance between countries. The dependent variable is the value difference in creditor protection (models 1-5) or shareholder protection (models 6-10) between acquirer's and target's country. Creditor protection scores source come from La Porta et al. (1998) and Djankov et al. (2007). Anti-director rights scores is used to proxy for shareholder protection, which source from La Porta et al. (1998) and Spamann (2009). The independent variables are indicators for the presence of a common border or the adoption of the same official language, a measure of population-weighted geographical distance and four measures of cultural distance from Hofstede (1980, 2001). ***, ** and * indicate significance levels at the 1%, 5% and 10% respectively.

	Creditor Rights					Shareholder Rights				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Common official Language	0.148				0.161	0.174				0.031
	(0.744)				(0.865)	(1.139)				(0.215)
Common Border		0.128			0.193		0.109			0.042
		(0.487)			(0.740)		(0.543)			(0.208)
Pop. Weighted Distance			-0.039		-0.034			-0.025		0.037
			(-0.678)		(-0.596)			(-0.569)		(0.847)
Uncertainty Avoidance				-0.019***	-0.019***				-0.015***	-0.015***
				(-7.830)	(-7.770)				(-8.025)	(-8.043)
Power Distance				-0.024***	-0.025***				0.005*	0.005*
				(-6.708)	(-6.881)				(1.858)	(1.872)
Individualism				-0.018***	-0.017***				-0.011***	-0.011***
				(-6.111)	(-5.968)				(-5.054)	(-5.099)
Masculinity				0.010***	0.010***				0.007***	0.007***
				(4.116)	(4.155)				(3.498)	(3.549)
Constant	-0.018	-0.003	0.326	-0.006	0.209	-0.044	-0.022	0.192	0.078	-0.230
	(-0.210)	(-0.033)	(0.690)	(-0.082)	(0.452)	(-0.662)	(-0.346)	(0.531)	(1.394)	(-0.639)
Observations	406	406	406	406	406	406	406	406	406	406
Pseudo R^2	0.000	0.000	0.000	0.066	0.068	0.001	0.000	0.000	0.069	0.069

Table 2. 7

Residual Difference in Governance Quality and Credit Risk

The table reports OLS estimations of the change in acquirer's CDS spread over the difference in national governance quality between countries for a sample of 4962 cross-border M&As from 2004 to 2013. The dependent variable is measured as the percentage variation in CDS spread in a two-month period around the M&A announcement date. To adjust for the effect of cultural and geographical distance among countries we consider a "residual" measure of corporate governance difference defined as the residuals from the model 5 and 10 of Table 2.6. To allow for a non-linear effect of governance quality on credit risk, we employ a piecewise specification where the residual measure of the difference in governance quality is broken into its positive and negative components *RCG_Diff [0, +Inf]* and *RCG_Diff [-Inf, 0)*, respectively. In different specifications, a series of firm-, deal- and country-level characteristics are also controlled. In models 4 and 8 we also control for our measures of geographical and cultural distance. All models include year fixed effects and standard errors are clustered both at the bidder and target home country level. ***, ** and * indicate significance levels at the 1%, 5% and 10% respectively.

	Creditor Rights				Shareholder Rights			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
RCG_Diff [0, +Inf]	0.064	0.027	0.029	0.007	-0.140	-0.139	-0.206	-0.271
	(0.312)	(0.125)	(0.166)	(0.024)	(-0.752)	(-0.797)	(-1.348)	(-1.208)
RCG_Diff [-Inf, 0)	0.263***	0.252***	0.288***	0.309**	0.291*	0.333**	0.408***	0.500***
	(2.661)	(2.874)	(4.912)	(2.520)	(1.961)	(2.290)	(3.964)	(3.713)
Size		-0.049**	-0.058**	-0.054*		-0.050**	-0.059**	-0.053*
		(-2.246)	(-2.000)	(-1.808)		(-2.304)	(-2.028)	(-1.804)
Leverage		0.289	0.286	0.267		0.297	0.295	0.303
		(0.550)	(0.561)	(0.473)		(0.549)	(0.564)	(0.521)
ROA		0.224	0.387	0.486		0.224	0.382	0.500
		(0.211)	(0.361)	(0.453)		(0.209)	(0.354)	(0.457)
MTB		-0.047	-0.041	-0.041		-0.047	-0.040	-0.041
		(-1.343)	(-1.259)	(-1.295)		(-1.320)	(-1.225)	(-1.299)
Related		0.251	0.283	0.290		0.258	0.288	0.294
		(1.238)	(1.252)	(1.229)		(1.236)	(1.247)	(1.223)
Cash		-0.137	-0.172	-0.156		-0.141	-0.173	-0.155
		(-0.769)	(-0.985)	(-0.850)		(-0.805)	(-1.004)	(-0.872)
Volatility		-10.434	-11.548	-12.004		-10.683	-11.714	-12.504
		(-0.644)	(-0.658)	(-0.673)		(-0.655)	(-0.667)	(-0.703)
Return		-9.712***	-9.798***	-9.793***		-9.742***	-9.834***	-9.820***
		(-3.712)	(-3.763)	(-3.757)		(-3.757)	(-3.809)	(-3.807)
Public Target		0.550	0.485	0.504		0.557	0.491	0.510
		(1.258)	(1.150)	(1.192)		(1.297)	(1.184)	(1.225)

(Continued)

Table 2.7 – *Continued*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
RelSize		-1.142**	-1.189**	-1.218**		-1.180**	-1.215**	-1.251**
		(-2.233)	(-2.220)	(-2.250)		(-2.274)	(-2.296)	(-2.321)
GDP			-0.303*	-0.308			-0.299*	-0.306
			(-1.709)	(-1.584)			(-1.681)	(-1.562)
Risk Free			-0.216***	-0.221***			-0.210***	-0.216***
			(-3.025)	(-3.308)			(-3.002)	(-3.246)
Rating_Diff			0.058	0.027			0.069	0.039
			(1.126)	(0.786)			(1.251)	(1.246)
Constant	0.372	2.133**	7.152**	6.671**	0.406*	2.210**	7.118**	6.380**
	(1.505)	(2.090)	(2.511)	(2.029)	(1.904)	(2.150)	(2.482)	(2.025)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Geo and Cul Distance	No	No	No	No	No	No	No	No
Observations	4962	4962	4962	4962	4962	4962	4962	4962
Adj. R^2	0.032	0.051	0.054	0.053	0.031	0.051	0.054	0.053

Table 2.7 replicates our main analysis using this residual measure of governance quality. Our result is broadly unchanged in both size and significance. Even after controlling for the effects of cultural and geographical distance, our measure of the difference in governance quality still has a statistically significant impact on the bidder credit risk. Acquiring targets from countries with better creditor protection or shareholder protection will decrease bidder credit risk, while taking over targets from countries with weaker corporate governance does not cause a deterioration in credit risk.

2.5 Governance Quality or Asset Quality

A common problem in studies on the effects of M&As is to adequately account for the asset composition (and risk) of the target company, especially when a significant majority of the transactions involve non-listed target companies. While this problem is common to all studies in this area, it is particularly problematic for this study, because of the possibility that our key variables (the governance quality in the target country relative to the acquirer) may be correlated to this asset quality, which is partially unobservable. Furthermore, weaker country-level investor protection could be correlated with weaker accounting standards and a more uncertain macroeconomic environment. These may result in a problem, since we are measuring an asset-quality effect rather than a corporate-governance effect. Therefore, we will try to disentangle these two factors in two different ways: by differentiating target status and the relative size.

2.5.1 Public vs Private Target

First, we will look at transactions involving listed (public) versus unlisted (private) target companies. Publicly listed companies are subject to more stringent regulations, and many elements of investor protection measured by Djankov et al. (2007), La Porta et al. (1998) and Spamann (2010) only apply to listed companies. For example, La Porta et al. (1998) examine a group of publicly traded companies in 49 countries, since their main focus is to protect investor rights, and their discussion on investor rights is constrained without considering public shareholders.

The discussion on investor rights would be limited if the public shareholders were

ignored. Similarly, Spamann (2010) considers only the laws applicable to listed companies in the country's largest stock exchange. Our main hypothesis would imply a stronger effect of investor protection on bidder credit risk in transactions involving a publicly listed target company. In this case, the management team of the bidder would be constrained by more stringent regulations. An explanation based on asset quality would not provide a similar prediction; on the contrary, one could argue that the asset quality of unlisted companies is more uncertain, given the reduced level of regulatory oversight.

While the asymmetry in the relationship between differential investor protections (between acquirer and target home countries) and change in CDS spread supports our main hypothesis, we can further prove our point by exploiting within-country cross-sectional variation in the regulatory environment surrounding target companies.

Specifically, we can compare M&As of publicly listed and privately owned firms. Publicly listed firms issue stocks and bonds that are sold to retail investors, therefore they are usually surrounded by a tighter regulatory environment. When private companies choose to become public, they must meet all regulatory requirements. The US Securities and Exchange Commission (SEC) has issued stringent reporting requirements, including the need for companies to publicly disclose financial statements and annual 10-K reports on present company status. The purpose of these requirements is to make sure that publicly listed firms obey with the regulations following the Sarbanes-Oxley Act. Companies need to follow the financial and reporting guidelines of each stock exchange market in order to be listed and traded. Therefore, acquiring a publicly listed firm in a country with stronger protection should lead to a more material influence on the acquirer's credit risk, given the additional regulation that will constrain management behaviour.

Table 2.8 reports the effects of the different status of targets (publicly listed or private) on our main results. We continue to use a "residual" measure of corporate governance difference (defined in Table 2.6) to adjust for the effect of cultural and geographical distance between countries, and employ a piecewise specification where the residual measure of the difference in governance quality is broken into its positive and negative components *RCG_Diff [0, +Inf]* and *RCG_Diff [-Inf, 0)*. These quantities then interact with indicator variables for

transactions involving publicly traded (*Public*) or private (*Private*) target companies. In different specifications, a series of firm-, deal- and country-level characteristics is also controlled.

Table 2. 8
Public and Private Targets

The table presents OLS estimations of the change in acquirer's CDS spread over the difference in national corporate governance quality where the main effect of interest is estimated separately for transactions involving public and private target companies. The dependent variable is defined as the percentage variation in CDS spread in a two-month period around the M&A announcement date. To adjust for the effect of cultural and geographical distance among countries we consider a "residual" measure of corporate governance difference defined as the residuals from the model 5 and 10 of Table 2.6. To allow for a non-linear effect of governance quality on credit risk, we employ a piecewise specification where the residual measure of the difference in governance quality is broken into its positive and negative components *RCG_Diff [0, +Inf]* and *RCG_Diff [-Inf, 0)*. These quantities then interact with indicator variables for transactions involving publicly traded (*Public*) or private (*Private*) target companies. In different specifications, a series of firm-, deal- and country-level characteristics is also controlled. All models include year fixed effects and standard errors are clustered both at the bidder and target home country level. The table also provides the result of a test over the statistical difference between the main coefficients of interest. ***, ** and * indicate significance level at the 1%, 5% and 10% respectively.

	Creditor Rights			Shareholder Rights		
	(1)	(2)	(3)	(4)	(5)	(6)
Public x *RCG_Diff [0, +Inf]*	0.058	-0.403	-0.372	-0.198	-0.705	-0.764
	(0.170)	(-0.728)	(-0.707)	(-0.515)	(-1.082)	(-1.193)
Private x *RCG_Diff [0, +Inf]*	0.067	0.183	0.175	-0.127	-0.001	-0.072
	(0.289)	(0.967)	(1.177)	(-0.786)	(-0.015)	(.)
Public x *RCG_Diff [-Inf, 0)*	0.309**	0.603*	0.610**	0.368**	0.934**	0.999***
	(2.347)	(1.861)	(2.128)	(2.488)	(2.117)	(2.674)
Private x *RCG_Diff [-Inf, 0)*	0.252**	0.159***	0.203***	0.272*	0.179	0.260**
	(2.461)	(2.656)	(4.322)	(1.728)	(1.303)	(2.107)
Constant	0.372	2.133**	7.033**	0.406*	2.190**	6.938**
	(1.508)	(2.073)	(2.527)	(1.916)	(2.116)	(2.521)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm-level Controls	No	Yes	Yes	No	Yes	Yes
Country-level Controls	No	No	Yes	No	No	Yes
Observations	4962	4962	4962	4962	4962	4962
Adj. R^2	0.031	0.052	0.054	0.031	0.052	0.054
(Public – Private) x RCG_Diff [-Inf, 0)	0.057	0.444*	0.407*	0.096	0.754*	0.738**
F-Stat	(0.240)	(1.850)	(1.760)	(0.527)	(2.437)	(2.865)

We find that the interaction *Public* x *RCG_Diff [-Inf, 0)* coefficients of all the models are higher than that of *Private* x *RCG_Diff [-Inf, 0).* The acquirer's CDS spread in response to the M&A announcement for publicly listed targets is 3.004 times higher than for private targets in terms of creditor protection quality (model 3), and 3.842 times greater in terms of shareholder protection quality (model 6). The coefficient differences between public target groups are significantly higher than those for private groups in each of the different specifications. In contrast, the interaction results of *RCG_Diff [0, +Inf]* continue to have insignificant effects on corporate credit risk.

These results confirm our hypothesis that corporate governance spill-over has a more pronounced influence on corporate credit risk when the target company is publicly listed.

2.5.2 Relative Size Tests

The second experiment is based on the relative size of the target firm to the acquiring firm of M&A transactions. The robustness of our primary results can be further proven for the asymmetry effects of governance differences on acquirer's credit risk, by looking at the effects of differences in size. If our main results were driven by the asset quality of the target firm instead of the effects of corporate governance quality difference, we should observe stronger asymmetric effects on credit risk for larger merger and acquisition deals. Furthermore, the effects of corporate governance would be independent of the relative size of the target. In other words, our hypothesis suggests that, even if acquiring a small company in a foreign country, acquirers still have to abide by the superior regulation of the target country.

Table 2.9 reports the OLS estimation results of the variation in acquirer's CDS spread over the difference in national corporate governance quality, where the main effect of interest is estimated separately for larger and smaller transactions; this is defined as the relative size of the merger and acquisition deals. Specifically, we define large and small M&A deals based on the ratio of the target firm compared to the acquiring firm, where large is greater than our median observation, and small is smaller than the median. To adjust for the effect of cultural and geographic distance between countries, we consider a "residual" measure of corporate governance difference that is defined as the residuals from models 5 and 10 in Table 2.6. We

employ a piecewise specification, in which the residual measure of the difference in governance quality is broken into its positive and negative components to allow for a non-linear effect of corporate governance on credit risk. These quantities then interact with indicator variables based on the relative size.

Table 2. 9

Large and Small Merger and Acquisition Deals

The table shows OLS estimations of the change in acquirer's CDS spread over the difference in national corporate governance quality where the main effect of interest is estimated separately for large and small transactions, defined depended on the relative size. We define as "Large" ("Small") merger and acquisition deals with a relative size greater (less) than our median observation. The dependent variable is defined as the as the percentage variation in CDS spread in a two-month period around the M&A announcement date. To adjust for the effect of cultural and geographical distance among countries we consider a "residual" measure of corporate governance difference defined as the residuals from the model 5 and 10 of Table 2.6. To allow for a non-linear effect of governance quality on credit risk, we employ a piecewise specification where the residual measure of the difference in governance quality is broken into its positive and negative components *RCG_Diff [0, +Inf]* and *RCG_Diff [-Inf, 0)*. These quantities then interact with indicator variables for *Large* and *Small* transactions. In different specifications, a series of firm-, deal- and country-level characteristics is also controlled. All models include year fixed effects and standard errors are clustered both at the bidder and target home country level. The table also provides the result of a test over the statistical difference between the main coefficients of interest. ***, ** and * indicate significance level at the 1%, 5% and 10% respectively.

	Creditor Rights			Shareholder Rights		
	(1)	(2)	(3)	(4)	(5)	(6)
Large deals x *RCG_Diff [0, +Inf]*	0.132	0.165	0.148	-0.209	-0.084	-0.189
	(0.257)	(0.323)	(0.323)	(-0.601)	(-0.244)	(-1.011)
Small deals x *RCG_Diff [0, +Inf]*	0.030	0.008	0.009	-0.116	-0.118	-0.189
	(0.155)	(0.038)	(0.049)	(-0.497)	(-0.563)	(-0.844)
Large deals x *RCG_Diff [-Inf, 0)*	0.254***	0.214***	0.264***	0.252*	0.250**	0.350***
	(3.362)	(3.246)	(5.057)	(1.810)	(1.976)	(3.411)
Small deals x *RCG_Diff [-Inf, 0)*	0.279	0.252	0.275*	0.382**	0.386*	0.445**
	(1.621)	(1.342)	(1.769)	(2.054)	(1.918)	(2.352)
Constant	0.370	0.952	5.635**	0.407*	0.914	5.454**
	(1.488)	(1.497)	(2.445)	(1.913)	(1.426)	(2.353)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm-level Controls	No	Yes	Yes	No	Yes	Yes
Country-level Controls	No	No	Yes	No	No	Yes
Observations	4962	4962	4962	4962	4962	4962
Adj. R^2	0.031	0.050	0.052	0.031	0.050	0.052
(Large - Small) x RCG_Diff [-Inf, 0)	-0.026	-0.038	-0.011	-0.13	-0.137	-0.095
F-Stat	(0.035)	(0.048)	(0.004)	(1.605)	(1.554)	(0.249)

It is shown that the asymmetry in the relationship between differential creditor and shareholder protections between countries, and the change in CDS spread are not stronger for larger merger and acquisition deals. Specifically, the coefficients of the interaction terms of *RCG_Diff [-Inf, 0)* with large deals are smaller than those with small deals, for both creditor and shareholder protection measures. The results are robust and consistent in different model estimations. These results confirm the robustness of our hypothesis, that credit risk reduction is caused by corporate governance variation effects induced by cross-border M&As, and is not determined by the asset quality of the target companies.

2.6 Conclusion

After the recent global credit risk crisis, the stability of credit markets has caused increasing concerns. Cross-border mergers and acquisitions enable companies to exploit additional opportunities beyond difficult economic and governance environments at home. This chapter demonstrates the effects of governance arbitrage on corporate credit risk. While similar studies on cross-border spill-over effects have extensively examined shareholder returns, the issue of how corporate credit risk reacts to cross-country variations in creditor and shareholder protection has not received the same level of attention.

By studying cross-border M&As cover companies from 41 countries, we find that the quality of corporate governance influences corporate credit risk in cross-border M&As. Particularly, an acquirer experience a reduction in credit default swap spread of 52 (or 53) bps after taking over a target company that operates under a stricter creditor (or shareholder) protection regime. We indicate that cross-border M&As provide a governance arbitrage channel that exposes acquirers to a jurisdiction with a better quality of corporate governance, and that the acquirers then have to comply with this governance and that thereby affects corporate credit risk. Conversely, we document that an acquirer's credit risk does not deteriorate after completing M&A transactions in a target country with weaker governance protection. This is mainly because managerial behaviour is still constrained by the more stringent home governance regulations.

The findings are robust to potential influence of measures of distances between

countries, and are not driven by unobservable target asset quality issues. We also find that the asymmetric relationship between differences in governance quality and CDS spread change is more pronounced when the target companies are publicly listed. However, this does not significantly influence on an acquirer's credit risk when acquiring larger target companies.

Overall, our results contribute towards important research streams on multinational corporate credit risk and corporate governance spill-over effects. A further research question, which is beyond the scope of this chapter, is to consider how the credit risk of takeover target firms reacts to changes in corporate governance. We leave this research to explore in the future.

Appendix A. 1: Variable Definitions and Data Sources for Chapter 2

Variable	Variable definition & data source
Panel A: Corporate governance	
Creditor_DIFF	The value difference (acquirer minus target) in creditor rights between acquirer and target countries. Sources: La Porta et al. (1998) Djankov et al. (2007).
Shareholder_DIFF	The value difference (acquirer minus target) in anti-director rights between acquirer and target countries. Source: Spamann (2009).
Creditor_POS	A dummy variable value equals to one if the score difference of creditor rights between acquirer and target country is larger than zero, and zero otherwise. Sources: La Porta et al. (1998) Djankov et al. (2007).
Creditor_NEG	A dummy variable value equals to one if the score difference of creditor rights between acquirer and target country is smaller than zero, and zero otherwise. Sources: La Porta et al. (1998) Djankov et al. (2007).
Shareholder_POS	A dummy variable value equals to one if the score difference of anti-director rights between acquirer and target countries is larger than zero, and zero otherwise. Source: Spamann (2009).
Shareholder_NEG	A dummy variable equals to one if the score difference of anti-director rights between acquirer and target countries is smaller than zero, and zero otherwise. Source: Spamann (2009).
Panel B: Credit default swap	
ΔCDS	The percentage variation of CDS spreads over two-month period around the mergers and acquisitions announcement date. Source: Markit.
Panel C: Firm characteristics	
Size	The logarithm of the total asset. Source: Worldscope.
Leverage	The ratio of short-term and long-term debt to the sum of stock market capitalisation, short-term and long-term debt. Source: Worldscope.
ROA	The ratio of EBIT (earnings before interest and tax) to total assets. Source: Worldscope.
MTB	The ratio of market capitalization to common equity. Source: Worldscope.
Volatility	The variance of monthly stock returns within each year. Source: Datastream.
Return	Monthly stock return of firms. Source: Datastream.
Panel D: Deal characteristics	
Related	A dummy variable value equals to one if acquirer and target of M&As are from the same industry (same SIC code), and zero otherwise. Source: SDC.
Cash	A dummy variable value equals to one if M&As deal are fully paid by cash, and zero otherwise. Source: SDC.
Public Target	A dummy variable value equals to one if targets are publicly listed firms, and zero otherwise. Source: SDC.
RelSize	The natural logarithm of the ratio of the transaction value of M&As to the market capitalization. Source: SDC.
Panel E: Country characteristics	
GDP	The natural logarithm of acquirers' GDP per capita. Source: International Monetary Fund.
Risk_Free	Ten years' government bond yield of the acquirer. Source: Datastream.

(*Continued*)

Appendix A. 1 – *Continued*

Rating_DIFF	The difference (acquirer minus target) of sovereign credit rating between acquirer and target country. Source: Bloomberg.
Pop.Weighted Distance	The population-weighted geographic distance between acquirer and target countries measured by kilometres. Source: Mayer& Zignago (2011).
Common official language	A dummy variable value equals to one if acquirer and target countries have a common official primary language, and zero otherwise. Source: Mayer& Zignago (2011).
Common border	A dummy variable value equals to one if acquirer and target countries have a common border, and zero otherwise. Source: Mayer& Zignago (2011).
Panel F: Culture measurements	
Uncertainty Avoidance	The value difference (acquirer minus target) of uncertainty avoidance index between acquirer and target countries. Source: Hofstede (2001).
Power Distance	The value difference (acquirer minus target) of power distance index between acquirer and target countries. Source: Hofstede (2001).
Individualism	The value difference (acquirer minus target) of individualism between acquirer and target countries. Source: Hofstede (2001).
Masculinity	The value difference (acquirer minus target) of masculinity index between acquirer and target countries. Source: Hofstede (2001).

Appendix A. 2: Hofstede's (1980, 2001) Culture Dimension

- Uncertainty Avoidance (UAI)

The degree of a society to tolerate the ambiguity and uncertainty. The uncertainty avoidance index shows the degree to which a member from a culture feels threatened by unstructured conditions. People with uncertainty avoidance culture are more phlegmatic and contemplative but less emotional.

- Power Distance (PDI)

The degree of less uneven distribution of power between members of society, including organisations and institutions. It shows that the level of social inequality is accepted by leaders as much as followers.

- Individualism (IDV)

The degree to which people identify themselves as an integrated part of social groups. Individualists consider the tie between society members to be weak, and collectivists consider society to be integrated strongly.

- Masculinity (MAS)

The degree to which a society values "masculine" behaviours that are somewhat assertive, competitive, and not caring for others. The positive pole is called "masculine" and tending pole is called "feminine".

The scale of these culture dimensions ranges from 0 to 100, with 50 as the midlevel. For each dimension, "relatively low" indicates that the score is under 50 and "relatively high" indicates a score over 50. For IDV, collectivists score less than 50 and individualists score more than 50. The score for 43 countries can be considered collectivist, and 28 countries can be considered individualists but less collectivist than those with 28 scores.

Chapter 3:

The Impact of Corporate Social Responsibility Concerns on Shareholders' Wealth: New Evidence from Mergers

3.1 Introduction

Corporate sustainability has become an important part of business development, and increasing numbers of companies have adopted sustainable business practices. Corporate social responsibility (CSR) actions have wide-reaching effects on corporate communities, the environment, and satisfaction levels among employees, suppliers, and customers. It is not sufficient for companies to supply high-quality products or services nowadays; customers, employees and other stakeholders, including shareholders, are concerned about their influence on the surrounding environment and their willingness to contribute to society more broadly. According to a PricewaterhouseCoopers (2010) CSR trend report, more than 81% of companies disclosed CSR activities on their websites at the end of 2010. A report from the Financial Times in 2014 shows that $15.2 billion had been invested in CSR activities in large American and British companies in the Fortune Global 500.

The influence of CSR activities on corporate financial performance remains controversial, and there are mixed empirical findings in the literature. One view supports the stakeholder theory, which considers that investing in CSR is strategically important for maintaining a good relationship with company stakeholders. This theory argues that CSR investment provides a way to improve corporate reputation, enhance customers' and suppliers' satisfaction, improve employee relationships, protect human rights, and in turn improve corporate financial performance (El Ghoul et al., 2011; Gelb & Strawser, 2001; Dhaliwal et al., 2014; Chih et al., 2008; Baron, 2001). In addition, those companies undertake CSR activities are inclined to keep their commitments and maintain long-term relationships with stakeholders, rather than maximising short-term profit (Jensen, 2001; Freeman et al., 2004; Jawahar & McLaughlin, 2001). An opposing body of literature supports the shareholder expense view, which regards CSR as a wasteful use of a firm's resources on non-productive projects, which will result in a wealth re-distribution from shareholders to stakeholders (Pagono & Volpin, 2005; Surroca & Tribo, 2008; Renneboog et al., 2008). This view proposes that companies should legally comply with shareholder theory and maximise shareholder wealth.

Merger deal events are ideal for analysing the relationship between CSR and shareholders' wealth effects for several reasons. First, merger events have been one of the most

crucial corporate investments for determining corporate performance in recent decades. Second, merger deals need support from stakeholders who are important for corporate performance and post-merger integration (Deng et al., 2013). Third, the unanticipated nature of mergers provides a channel to mitigate the reverse causality problems of CSR and firm value relations (McWilliams & Siegel, 2001; Jiao, 2010). Aktas et al. (2011) show that stronger socially responsible rating of target firms will benefit acquirer to earn more announcement returns in M&As. They suggest that, in M&A transaction deals, higher socially responsible investment practices and experiences by the target company spill-over to the acquirer. Deng et al. (2013) examine the effects of corporate social responsibility on shareholders' wealth by using the aggregate rating of CSR[9]. Their findings support the stakeholder theory, by showing that an acquirer who has a stronger aggregate CSR rating realises higher short-term merger-announcement abnormal returns and better long-term firm performance. Also, it is shown that the deals have a shorter completion time and lower failure likelihood by acquirers who have higher CSR rating.

While Deng et al. (2013) have shown the relation between acquirer's aggregate CSR ratings and shareholder wealth effects in mergers, there is less understanding of the effects on the market of the components of CSR ratings of companies in mergers, and of which specific dimension or dimensions are driving the results. The following considerations motivate our research interest. First, analyses of aggregate CSR in previous studies may not adequately reflect the balance of CSR matters arising asymmetrically, either from a firm's socially responsible activities or its socially irresponsible behaviour. A company has records of both CSR strengths and concerns, and it is not clear which plays a more crucial role. Second, the aggregate CSR calculation depends on the assumption that the adverse impacts of firms' CSR concerns could be negated by their CSR strengths. However, the market may react to a firm's socially responsible and irresponsible actions independently, especially in an efficient market. Therefore, firms may voluntarily disclose more CSR strengths to potentially camouflage their CSR concerns. Third, there is a scarcity of previous studies that has examined the relation

[9] Aggregate CSR rating is measured by a firm's corporate social responsibility rating minus its corporate social irresponsibility rating. A higher aggregate CSR score indicates a better social rating.

between a firm's socially irresponsible rating and financial performance in mergers. Previous studies only showed evidence of tax-avoidance, which suggest that firms with excessive social irresponsibility are inclined to undertake tax avoidance activities and have higher differences in discretionary and permanent book-tax (Hoi et al., 2013). This chapter studies the effects of the market reaction to acquirers' CSR responsible and irresponsible behaviours.

To investigate the market reaction to firms' socially responsible and irresponsible behaviour, we exploit the variations in acquiring firms' CSR ratings to examine their impact on merger announcement returns. We construct measures of corporate social responsibility using strength (positive) and concern (negative) social rating data from Kinder, Lydenberg, and Domini (KLD) Research and Analytics Inc. To evaluate the impact of corporate social responsibility accurately, we use two groups of alternative CSR measurements to capture the firm's responsible and irresponsible behaviours. First, we capture the intensity of companies' CSR activities by summing the positive and negative ratings separately, with the higher score (strength or concern) indicating either higher socially responsible or irresponsible performance. Second, we use dummy variables to capture firms' responsible and irresponsible behaviours along specific dimensions of CSR activities, including diversity, environment, community, corporate governance, human rights, employee relations, and product quality. In order to measure the market reaction in merger deal announcements, we construct acquirers' cumulative merger announcement abnormal returns with various event windows employing the market model and standard event study methodology. We then conduct analyses to examine the shareholder wealth effects on an acquiring firm's responsible and irresponsible behaviours, by employing a multivariate framework and controlling for characteristics at both the firm-level and deal-level.

The sample used in this chapter is a group of 1,752 successful US mergers made by 843 acquiring firms from various industries. We first examine the stakeholder value maximisation theory using aggregate CSR ratings to measure the firms' social responsibility. Following Deng et al. (2013), we create an aggregate CSR variable that is calculated as the sum of corporate social responsibility strengths minus the concerns. To account for the bias of any specific CSR dimensions, we also adjust the total strength and concern score by dividing by the dimension

scores of CSR strength and concern. We find consistent results with Deng et al. (2013), that the aggregate CSR value of acquirers and merger returns are positively correlated.

We then specifically investigate the impacts of firms' CSR activities on merger performance, by using alternative measurements that evaluate an acquirer's CSR strength and concern ratings separately. We find that acquiring companies who have higher social responsibility ratings do not significantly affect their abnormal returns in merger transaction deals in the short-term, which is consistent with Groening and Kanuri (2013). However, acquirers with socially irresponsible behaviours, particularly those with an excessive irresponsible score, realise significantly lower abnormal announcement returns in mergers. The economic impact is significant: a 0.22% average decrease in the acquirer's cumulative abnormal merger returns when there is a standard deviation change in the CSR irresponsible rating of an acquirer, when all other variables are held constant. These significant results persist after controlling for a series of characteristics at different levels, and year and industry fixed effects. The findings imply that the stock market does not reward acquiring firms for making more responsible activities in mergers in the short-term. However, the stock market is sensitive to, and reacts negatively to, socially irresponsible behaviours. These results are not mutually exclusive with Deng et al. (2013) and support the stakeholder value maximisation theory. Our results imply that firms can improve merger performance by minimising socially irresponsible behaviour, but cannot create shareholder value by merely investing in more socially responsible activities.

Next, we further examine whether some specific CSR dimensions dominate acquirers' merger performance. We find that acquirers displaying socially irresponsible behaviours in the community, employment relations, environmental, and human rights dimensions have significantly lower cumulative abnormal returns in merger transactions. In contrast, the socially responsible dimensions do not significantly affect merger returns. It illustrates that our findings are not determined by any specific corporate social responsibility component, but rather represent the effects of the overall corporate socially responsible rating on merger performance.

The causal relationship between CSR and the acquirer's returns may be affected by the omitted variables relating to both corporate social responsibility and merger performance. We

conduct additional tests to address endogeneity concerns, using a 2SLS regression analysis with instruments for the endogenous variables. The first instrument we use is a blue state dummy variable that has a value equals to one if a company is headquartered in a Democratic ("blue") state in the United States, and zero otherwise. Rubin (2008) shows that companies with better CSR activities are more likely to be headquartered in a blue state. The second instrumental variable is the average CSR rating (CSR strengths and concerns) for other firms in the same industry and year (Jha & Cox, 2015; Stellner et al., 2015; El Ghoul et al., 2011). A firm's CSR rating is highly related to its specific industry, and firms with the same characteristics are clustered in specific locations (Baptista & Swann, 1998; Krugman, 1991). The results of 2SLS regressions confirm our findings that the CSR strengths of acquiring firms do not affect acquirers' shareholder returns, while its CSR concerns rating has significant negative effects on their merger returns.

Finally, we conduct additional robustness and sensitivity tests. First, one concern about our findings is that they may be determined by acquirers whose businesses are in controversial areas, namely gambling, nuclear power, alcohol, firearms, and tobacco. Hong and Kacperczyk (2009) show that businesses operating against social norms may experience an impact on their stock returns. Therefore, we include additional sets of CSR-controversial business controls from KLD, to mitigate concerns from deviations from societal norms. Our results continue to hold, which reinforces our earlier evidence that acquirers' socially responsible activities do not affect merger returns, but that the market reacts negatively to acquirers' irresponsible behaviour. Second, our findings are robust to measuring bidder abnormal announcement returns using alternative event windows. Third, our findings are robust when the merger sample is expanded to include acquirers who own more than 50% of the target after merger transactions, instead of 100%. Fourth, our evidence is robust to including acquirers in both the utilities and financial industries.

In summary, this chapter documents the effects of acquiring firms' socially responsible and irresponsible activities on shareholder wealth in mergers. We find new evidence that the stock market does not reward socially responsible acquirers, but that the market regards investments by socially irresponsible firms more negatively. The analysis and results in this

chapter make contributions to several strands of research, as outlined below.

First, this chapter makes contributions to the literature that studies the relation between CSR and corporate performance. Previous studies examine the effects of corporate socially responsible behaviours on sin stocks returns (Hong & Kacperczyk, 2009), bank debt (Goss & Roberts, 2011), cost of equity capital (El Ghoul et al., 2011), media favourability and firms' equity valuations (Cahan et al., 2015), and credit risk (Stellner et al., 2015). To our knowledge, this is the first study to separately test the effects of corporate social responsibility and irresponsibility on shareholder wealth. Therefore, this chapter extends the literature by indicating that the market reaction on CSR responsibility and irresponsibility are different, and that firms should care more about their socially irresponsible behaviours as they are more sensitive to investors.

Second, this research complements the growing literature dealing with the shareholder value implications of CSR in merger and acquisition transactions. We extend the Deng et al. (2013) stakeholder wealth maximisation view by showing that a higher aggregate CSR benefits merger returns in the short-term, due to the less observable socially irresponsible behaviours of acquiring firms. We also take a more comprehensive approach, examining the effects of seven individual CSR dimensions as well as controversial business issues. This chapter makes the contributions to the knowledge of the relation between an acquirer's corporate social responsibility performance and market reaction, which extends the study by Aktas et al. (2011) of the relation between a target firm's CSR rating and an acquiring firm's abnormal merger announcement returns.

Third, this chapter extends literature on the correlation between corporate socially irresponsible behaviours and firm performance. Goss and Roberts (2011) show that companies with CSR concerns pay higher basis points than socially responsible firms, and Hoi et al. (2013) show that socially irresponsible firms are inclined to participate in tax avoidance activities. Hong and Kacperczyk (2009) show that sin industry companies receive less analyst coverage and higher expected returns. To our knowledge, no study has so far examined how the corporate socially irresponsible rating affects the wealth effects for shareholders and stakeholders. Finally, this chapter also extends to the previous research by showing that irresponsible CSR

activities also act as a determinant of merger performance.

The rest of this chapter is organised as follows: Section 3.2 discusses the research question; Section 3.3 reports the data construction and summary statistics; Section 3.4 discusses the variables and the empirical framework; Section 3.5 reports the empirical results; Section 3.6 shows the results of our robustness checks and sensitivity tests; and Section 3.7 provides our summary and conclusion.

3.2 Research Question and Hypotheses

There is a body of literature that focuses on the effects of corporate social behaviours on shareholder wealth in M&A transactions. One stream of literature supports the stakeholder value maximisation view, which suggests a positive relationship between aggregate CSR ratings and shareholder returns. Aggregate CSR ratings may obfuscate specific positive and negative CSR influences, and separating these directional components may shed some light on asymmetric effects.

Our *Responsible CSR appreciation hypothesis* is that the positive relation between announcement merger returns and acquirer's aggregate CSR rating is due to the market reward for acquirers undertaking socially responsible activities, and that it therefore results in positive cumulative abnormal returns for acquirers in mergers. Some researchers support the positive perspective of this argument. For example, Fombrun and Shanley (1990) suggest that socially and environmentally conscious activities can improve a firm's efficiency, improve employee relations, increase customer satisfaction, create new opportunities and signal management quality. CSR behaviours can also enhance a firm's standing with financial market participants, including governments, bankers, investors and other financial intermediaries. The improved reputation effects through CSR may also enhance a firm's ability to obtain financing (McGuire et al., 1988).

The counter argument is that firms are penalised for poor social behaviour (Goss & Roberts, 2011) and that the market then acts to discipline firms, which would mean that merger returns are a result of potential reduction in bad behaviour. The disciplinary view leads us to formulate the *Irresponsible CSR depreciation hypothesis*: the positive merger returns of

acquirers may result from the reduction of socially irresponsible behaviours.

The remainder of the chapter aims to disentangle these two alternative explanations.

3.3 Data Construction and Summary Statistics

The information and data used in this chapter are gathered from the following databases: the Thomson Securities Data Company (SDC) Mergers and Acquisitions database provides the merger deal data; the Kinder, Lydenberg and Domini (KLD) database offers corporate social responsibility scores of various dimensions; the Research in Security Prices (CRSP) daily return files provide stock return information; and Compustat North America provides financial data. The sample period of this chapter is January 1, 1995 to December 31, 2013. Following Deng et al. (2013), this chapter takes the following criteria for sample selection: (1) the merger deal status is marked as completed; (2) the merger is greater than $1 million regarding the deal value, to exclude the effects from small deals; (3) the acquirer has 100% ownership of the target firms' shares after the merger deal; (4) the acquirer is a publicly listed firm in the US, with the market data available from CRSP to compute the abnormal returns; (5) the accounting and financial data of acquirer is available from Compustat; (6) the acquirer is covered by the KLD database and CSR scores are available for various strength and concern dimensions prior to the merger[10] deal announcement; (7) acquirers from the utilities and financial industries are excluded. These criteria leave a sample of 1,752 successful mergers deals by 843 acquiring companies from various industries.

The sample distribution by the year of the transaction announcement and the corresponding average CSR strength and concern scores are reported in the Panel A of Table 3.1[11]. The number of merger deals per year increases gradually, reaches a peak before the 2008 financial crisis, and is then approximately constant in the subsequent years. Acquiring firms' CSR strengths and concerns scores vary across years. The highest average acquirers' CSR strength was 4.052 in 1999, and the smallest was 1.320 in 2003. There was also a relatively

[10] Acquisition deals are not considered in this chapter, similar to Deng et al. (2013). An acquisition of target shares may not change the target firms' independent legal entity and supporting willingness, therefore it is not clear in acquisition cases whether acquirers' CSR will influence these transactions.

[11] Calculation of the CSR strength and concern variables will be discussed in section 3.4.1.

low average score for CSR concerns for acquirers in 2003, although the lowest was in 2012 (1.030). There is no discernible pattern in variation of these scores across the years.

Table 3. 1
Sample Distribution by Year and Industry

This table shows the sample distribution by merger announcement year and acquirer's industry. Panel A presents the mean values of CSR strength and CSR concern ratings and the frequency distribution of sample by years. Panel B reports acquirer's industry distribution and the mean values of CSR measures by selected two-digit SIC industries. The sample consists of 1752 completed domestic mergers between years 1995-2013.

Panel A: Mean values and frequency distribution by year

Year	Number	Strength_Sum	Concern_Sum	Strength_dummy	Concern_dummy
		Mean	Mean	Mean	Mean
1995	35	2.171	1.800	0.857	0.800
1996	56	2.482	1.446	0.732	0.750
1997	45	2.689	2.489	0.844	0.933
1998	64	2.594	2.000	0.750	0.906
1999	96	4.052	2.219	0.844	0.813
2000	87	2.920	2.218	0.828	0.874
2001	82	2.305	1.841	0.634	0.732
2002	54	2.722	2.481	0.630	0.778
2003	97	1.320	1.443	0.495	0.619
2004	135	1.400	1.919	0.548	0.881
2005	147	2.197	2.347	0.537	0.857
2006	121	2.421	2.545	0.620	0.893
2007	145	2.076	2.152	0.614	0.883
2008	105	2.305	2.457	0.629	0.895
2009	94	3.351	2.755	0.660	0.904
2010	96	3.000	2.760	0.479	0.896
2011	106	1.991	2.821	0.349	0.981
2012	99	2.404	1.030	0.556	0.505
2013	88	2.205	1.307	0.511	0.727

(*Continued*)

Table 3.1 – *Continued*

Panel B: Mean values and frequency distribution by acquirer industry					
Industry (Two-Digit SIC)	Number	Strength_Sum Mean	Concern_Sum Mean	Strength_dummy Mean	Concern_dummy Mean
Agriculture, Forestry, and Fisheries (01-09)	6	3.000	2.333	0.333	1.000
Mineral industries and construction (10-17)	92	1.304	3.141	0.663	0.870
Manufacturing (20-39)	1018	2.996	2.336	0.665	0.840
Transportation and communications (40-48)	101	2.386	2.079	0.495	0.832
Wholesale trade and retail trade (50-59)	109	2.193	1.835	0.606	0.743
Service industries (70-89)	426	1.256	1.516	0.507	0.808

The sample distribution based on the industry of the acquiring firms is reported in the Panel B of Table 3.1. The manufacturing (58.1%) and service (24.3%) industries dominate the sample. Despite the lowest merger numbers being in agriculture, forestry, and fisheries, acquirers in those industries have the highest score for CSR strengths (3.000). Mineral and construction industries have the lowest CSR strength scores, while their CSR concerns are the highest (3.141) among all the industries.

3.4 Key variables Construction and Empirical Framework

3.4.1 Measuring CSR Strength and Concern

KLD scores firms based on thirteen CSR dimensions in two main categories, which are qualitative issue areas and controversial business issue areas. The CSR dimensions of qualitative issue areas are diversity, environment, community, corporate governance, human rights, employee relations, and product characteristics. KLD presents a binary (either 0 or 1) rating of strength (positive) and concern (negative) ratings for each qualitative issue dimension[12]. For each dimension, they score 1 if a rating is either assigned as a strength

[12] For details of the measure of CSR see Appendix B.2.

(positive) or a concern (negative), and score 0 otherwise. For example, in the community area, KLD assigns 1 for "charitable giving" if a company has a charitable giving strength, and 0 otherwise. In the employee relations dimension, KLD assigns 1 for "workforce reductions concern" if a company has made large-scale layoffs in recent years, and 0 otherwise. In contrast, companies are only assigned concern ratings for controversial business issues, which dimensions are based on firearms, alcohol, military, gambling, nuclear power, and tobacco.

The aggregate CSR rating is measured as the sum of CSR strengths rating minus the CSR concerns rating; this has been used as a measure of CSR in previous research (El et al., 2011; Deng et al., 2013; Di et al., 2014). A higher aggregate CSR rating implies a better social performance. For example, the KLD employee relations rating is calculated as the employee relations strength score minus its concern score. We then calculate the sum of KLD scores across the seven qualitative CSR dimensions to calculate the aggregate CSR rating.

The innovation in this chapter is to better evaluate the impact of CSR by using two groups of alternative CSR measurements. First, the variable *Strength_Sum* is calculated as the sum of CSR strengths and *Concern_Sum* is estimated as the sum of the total number of CSR concerns, based on the seven qualitative CSR dimensions. The CSR strength score represents the firm's socially responsible behaviours rating, and the CSR concern score represents the firm's socially irresponsible behaviours rating. These summed CSR variables could better measure the intensity of CSR strength and concern. A higher score indicates higher social responsibility (for the strength score) or irresponsibility (for the concern score)[13].

The second group of measurement is strength and concern dummy variables, with the value equals to 1 for the presence of any CSR strengths or concerns in the seven qualitative CSR dimensions, and 0 otherwise. The variable *Strength_dummy* equals 1 if the firm has any dimensions from the diversity, environment, community, corporate governance, human rights, employee relations, and product characteristics marked as a strength, and 0 otherwise. The variable *Concern_dummy* value equals to 1 if the firm has any seven qualitative CSR dimensions marked as a concern, and 0 otherwise. These dummy variable indicators capture a

[13] Detailed variable definition is included in Appendix B.1.

firm's performance on any socially responsible or irresponsible behaviours, regardless of the effects of a number of CSR strengths or concerns[14].

Table 3. 2
Summary Statistics for Chapter 3

This table shows the statistics of variables of this chapter. The sample covers of 1752 completed domestic mergers between years 1995-2013, which is selected by the following criteria: (1) the merger deal status is marked as completed; (2) the merger is greater than $1 million regarding the deal value, to exclude the effects from small deals; (3) the acquirer has 100% ownership of the target firms' shares after the merger deal; (4) the acquirer is a publicly listed firm in the US, with the market data available from CRSP to compute the abnormal returns; (5) the accounting and financial data of acquirer is available from Compustat; (6) the acquirer is covered by the KLD database and CSR scores are available for various strength and concern dimensions prior to the merger deal announcement; (7) acquirers from the utilities and financial industries are excluded. All continuous variables are winsorized at 5% and 95% level. See Appendix B.1 for variable definitions.

	Number	Mean	Std.Dev.	P25	Median	P75
Panel A: Cumulative abnormal returns						
CAR(-1,1)	1752	0.00377	0.05277	-0.02502	0.00089	0.02969
CAR(-2,2)	1752	0.00279	0.06245	-0.03205	-0.00088	0.03604
CAR(-5,5)	1752	0.00338	0.08410	-0.04521	-0.00119	0.04935
Panel B: CSR measures						
Strength_Sum	1752	2.399	3.467	0.000	1.000	3.000
Concern_Sum	1752	2.133	2.173	1.000	2.000	3.000
Strength_dummy	1752	0.612	0.487	0.000	1.000	1.000
Concern_dummy	1752	0.828	0.378	1.000	1.000	1.000
RawCSR	1752	0.217	2.959	-1.000	0.000	1.000
AdjCSR	1752	-0.124	0.486	-0.417	-0.149	0.125
Panel C: Control Variables						
Firmsize	1752	7.893	1.618	6.639	7.850	9.253
Freecashflow	1752	0.054	0.068	0.028	0.059	0.094
Leverage	1752	0.125	0.116	0.023	0.098	0.195
TobinQ	1752	2.510	1.651	1.412	1.946	2.960
MB	1752	4.090	3.296	1.878	3.043	5.039
Diversifying	1752	0.400	0.490	0.000	0.000	1.000
Targetprivate	1752	0.410	0.492	0.000	0.000	1.000
Relsize	1752	0.164	0.292	0.016	0.056	0.183
Cashonly	1752	0.404	0.491	0.000	0.000	1.000
Hostile	1752	0.007	0.086	0.000	0.000	0.000
Tender	1752	0.128	0.334	0.000	0.000	0.000

[14] Adjusted CSR variable is for the robustness check later.

The descriptive statistics of two types of CSR strength and concern measurements are reported in the Table 3.2. The mean value of *Strength_Sum* in the sample is 2.399 while the mean value of *Concern_Sum* is 2.133. *Strength_dummy* is 0.612 and this is lower than for *Concern_dummy* (0.828). In other words, 82.8% of firms in the sample had at least one activity marked as socially irresponsible behaviour, compared with 61.2% of firms who have done at least one socially responsible activity.

3.4.2 Abnormal Stock Performance

To study the effects of socially responsible activities on acquiring firms' merger announcement returns, this chapter uses the standard event research method, which isolates the impact of specific events. The estimation of an acquirer's abnormal stock performance is based on the market model as follows:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (3)$$

where R_{it} is the stock return for period *t*; R_{mt} is the US stock market return on day *t*, which is proxied by the value-weighted return in CRSP; α_j and β_j are the parameters of ordinary least squares (OLS) regression; and ε_{it} is the regressions residual. The estimated window is two hundred trading days, which ends eleven days before merger announcements. We estimate that an acquirer's abnormal return (AR) is the stock return value observed minus the stock return measured using the market model:

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt}) \quad (4)$$

We then calculate the cumulative abnormal return (CAR) for the three-day merger event window *CAR(-1,1)* (one day before and one day after the date of merger announcements), and take this as the key dependent variable. We also estimate the five-day event window *CAR(-2,2)* and eleven-day event window *CAR(-5,5)* (five and eleven days, respectively, before and after the date of merger announcements).

The summary statistics for acquirers' CARs for several event windows are reported in the Table 3.2. In all the event windows, the mean and median value of CARs are positive, which are consistent with previous studies. For example, the result for our average *CAR(-2,2)*

is 0.279%; this is comparable with the results of Masulis et al. (2007), who recorded *CAR(-2,2)* of 0.215% for US deals between 1990 and 2003.

3.4.3 Empirical Framework

In order to examine investors' reactions to acquiring firms' socially responsible performance in merger deals, we conduct a regression analysis on the following equation:

$$CAR_{i,t} = \alpha_0 + \alpha_{i,t} + \beta_1 CSR\_Strengths^{i,j} + \beta_2 CSR\_Concerns^{i,j} + \beta_3 Controls_t^i + \varepsilon_t^{ij} \quad (5)$$

where $CAR_{i,t}$ is an acquirer's cumulative abnormal returns in possible event windows; $\alpha_{i,t}$ is the vector of year and industry fixed effects; $CSR\_Strengths^{i,j}$ and $CSR\_Concerns^{i,j}$ are CSR strength and concern measurements (see section 3.4.1); and $Controls_t^i$ is a series of control variables at firm- and deal-level that have been shown to relate to the relation between stock abnormal return and CSR performance in M&A events[15].

The following firm-specific control variables are used: firm size, market-to-book ratio, free cash flow, leverage, and Tobin's Q. These were selected based on Masulis et al. (2007) who studied the determinants of merger and acquisition performance. First, *size* is included since Moeller et al. (2004) show that managers from big companies may overestimate potential merger synergy, therefore inducing lower or negative abnormal returns. Also, McWilliams and Siegel (2001) report that large companies tend to be more socially responsible than smaller companies. Second, firm's financing structure (*leverage)* is included because Goss and Roberts (2011) show that socially responsible companies can access debt financing more easily than more irresponsible firms. Third, *freecashflow* is included because CSR investments are discretionary decisions that may rely on the availability of excess funds. Finally, Jiao (2010) shows that companies having better management quality are inclined to actively participate in CSR activities, thereby we use the market-to-book ratio (*MB*) and Tobin's Q (*TobinQ*) as proxies for management quality.

Merger deal transaction characteristics also need to control for determinants of M&A success (Erel at al., 2012). We control for industry diversification based on whether acquirer

[15] Detailed variable definition is in the Appendix B.1.

and target companies share the same industry classification codes (*Diversifying*). Target status is controlled based on whether target firms are publicly listed or private unlisted (*Targetprivate*). The relative size of the merger deal is also controlled, which is defined as the ratio of the merger deal transaction value to the acquiring firm's market value of equity before the deal announcement year (*Relsize*).

We also control for the deal transaction attitude depend on whether it is a tender offer or has a hostile attitude (*Hostile*). The year and industry fixed effects are controlled in the models to capture the macroeconomic differences. The standard errors are adjusted with White's (1980) heteroscedasticity.

Table 3.2 reports the statistics for the control variables for the empirical framework. In order to remove the outliers effects, all continuous variables in the sample are winsorised at the 5th and 95th percentile. It is shown that all the mean and median values of firm and deal characteristics are broadly consistent with Deng et al. (2013).

3.5 Empirical Results

3.5.1 Univariate Results

The univariate results for acquirer's CARs descriptive statistics for various event windows are reported in the Table 3.3. The mean and median value of CARs are both statistically positive for all event windows, which implies that the public have optimistic attitudes to the firms involved in CSR activities in merger transaction deals. The table further separates the full samples into two subgroups, depending on the median of the total CSR strength and concern measures. Both subsample and difference test results show that acquirers with low CSR concerns have higher cumulative abnormal returns than that of high CSR concerns ratings. For example, the mean and median of *CAR(-1,1)* for an acquirer with a low CSR concern score are 0.744% and 0.5% respectively, while they are 0.064% and -0.15% for an acquirer with a high CSR concern score. The difference group results imply that the mean and median difference between the low and high CSR concern groups are 0.68 and 0.65 basis points higher than an acquirer with a higher total CSR concern score. In both the five- and eleven-day event windows, we also find similar significant differences between high and low

groups of total CSR concern regarding means and medians. Overall, these findings suggest that acquirers with a lower socially irresponsible behaviours experience significantly higher cumulative abnormal returns in merger deals.

3.5.2 Cross-sectional Regression Analysis

3.5.2.1 Aggregate CSR Measurement

We construct the aggregate value of CSR following the method of Deng et al. (2013). Using the dimensions of CSR qualitative issue areas discussed in section 3.4.1, the variable *RawCSR* is calculated for an acquirer as the value difference of the sum of CSR strengths rating and the sum of concerns rating based on qualitative CSR dimensions. To remove any bias, we adjust the total strength and concern score by dividing the dimension scores of strength and concern by their respective indicator numbers. The variable *AdjustedCSR* is calculated as the value difference between the adjusted value of the CSR strength rating and the adjusted value of the CSR concern rating. Table 3.2 shows the summary statistics for *RawCSR* and *AdjCSR*. As previously reported, the mean of *RawCSR* in our sample is 0.217, which is comparable to the mean results of 0.266 reported by Deng et al. (2013); the mean of *AdjCSR* is -0.124, which is also comparable with the mean of -0.112 reported by Deng et al. (2013).

As with Deng et al. (2013), this chapter considers the acquirer's three-day *CAR(-1,1)* to be the key dependent variable, and the *AdjustedCSR* and *RawCSR* to be the primary explanatory variables to examine their relationship. The regression results of acquirers' CARs on aggregate CSR rating are reported in the Table 3.4. We find the coefficient of acquirers' adjusted CSR and raw CSR ratings are both significantly positive which are consistent with Deng et al. (2013). It suggests that firms' CSR performance increases stakeholders' satisfaction to benefit shareholders, and acquirers with high aggregate CSR ratings realise higher abnormal stock returns in mergers than those acquirers with low aggregate CSR ratings. In summary, our findings support the stakeholder value maximisation theory and verify the consistency of our sample with results from earlier literature.

Table 3. 3
Univariate Tests

This table reports the mean and median value of CARs (in percentage) of US acquirers in mergers during different event windows over the period 1995-2013. Acquirers are classified into low and high CSR concerns groups depended on the sample median of CSR concerns sum scores. The significance level of the difference in means values between groups are examined based on standard t-tests. The significance level of the difference in medians values between groups are depend on Mann-Whitney-Wilcoxon tests. *, **, and *** denote significance levels at the 10%, 5% and 1%, respectively.

Panel A: CSR strength sum

CARs	Full sample (N=1752)		Subsample of acquirer with low CSR Strength: A (N=1034)		Subsample of acquirer with high CSR Strength: B (N=718)		Test of difference (A-B)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
CAR(-1,1)	0.00377***	0.00090*	0.00682***	0.00310***	-0.00063	-0.00161	0.00750***	0.00471**
	(2.990)	(1.741)	(3.8574)	(2.924)	(-0.3661)	(-0.930)	(2.9121)	(2.547)
CAR(-2,2)	0.00279*	-0.00090	0.00628***	0.00100**	-0.00224	-0.00348*	0.00852***	0.00448**
	(1.870)	(-0.480)	(3.0029)	(1.926)	(-1.1030)	(-1.771)	(2.8147)	(2.354)
CAR(-5,5)	0.00338*	-0.00119	0.00832***	0.0030**	-0.00372	-0.00274*	0.01204****	0.00574**
	(1.683)	(-0.559)	(2.9565)	(2.027)	(-1.3581)	(-1.676)	(2.9538)	(2.322)

Panel B: CSR concern sum

CARs	Full sample (N=1752)		Subsample of acquirer with low CSR Concerns: A (N=807)		Subsample of acquirer with high CSR Concerns: B (N=945)		Test of difference (A-B)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
CAR(-1,1)	0.00377***	0.00090*	0.00744***	0.00500***	0.00064	-0.00150	0.00680***	0.00650***
	(2.990)	(1.741)	(3.725)	(2.971)	(0.399)	(-0.522)	(2.695)	(2.583)
CAR(-2,2)	0.00279*	-0.00090	0.00647***	0.00131*	-0.00035	-0.00196	0.00682**	0.00327**
	(1.870)	(-0.480)	(2.728)	(1.863)	(-0.188)	(-1.213)	(2.282)	(2.010)
CAR(-5,5)	0.00338*	-0.00119	0.00719**	0.00410*	0.00013	-0.00280	0.00706*	0.00690**
	(1.683)	(-0.559)	(2.251)	(1.829)	(0.050)	(-1.105)	(1.755)	(1.982)

Table 3. 4
The Positive Association between Aggregate CSR and Merger Returns

This table shows the regression results of the acquirer's aggregate CSR rating on merger returns. The dependent variable *CAR(-1,1)* is the acquirer's three-day cumulative abnormal return. Model 1 shows coefficients from a regression of the CAR of acquiring firms on adjusted CSR rating. Model 2 shows coefficients from a regression of the *CAR(-1,1)* on raw CSR rating. The firm and deal level control variables discussed in section 4.3 are included in all models. All models include the year and industry fixed effects. Descriptions of variables are presented in Appendix B.1. *, ** and *** denote significance levels at the 10%, 5%, and 1% level, respectively.

	(1)	(2)
AdjCSR	0.00596**	
	(1.977)	
RawCSR		0.00090*
		(1.722)
Firmsize	-0.00345***	-0.00361***
	(-2.838)	(-2.909)
Leverage	0.05295***	0.05339***
	(2.731)	(2.748)
TobinQ	0.00350	0.00353
	(1.587)	(1.597)
MB	-0.00027	-0.00026
	(-0.294)	(-0.279)
Freecashflow	0.00847	0.00826
	(0.354)	(0.347)
Diversifying	-0.00070	-0.00085
	(-0.217)	(-0.264)
Targetprivate	0.01018***	0.01014***
	(2.970)	(2.957)
Relsize	-0.01109	-0.01097
	(-1.439)	(-1.422)
Cashonly	0.00529	0.00532
	(1.569)	(1.579)
Hostile	-0.00436	-0.00423
	(-0.266)	(-0.256)
Tender	0.00426	0.00420
	(0.916)	(0.902)
Constant	0.00952	0.01001
	(0.679)	(0.709)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Observations	1752	1752
Adj. R^2	0.074	0.073

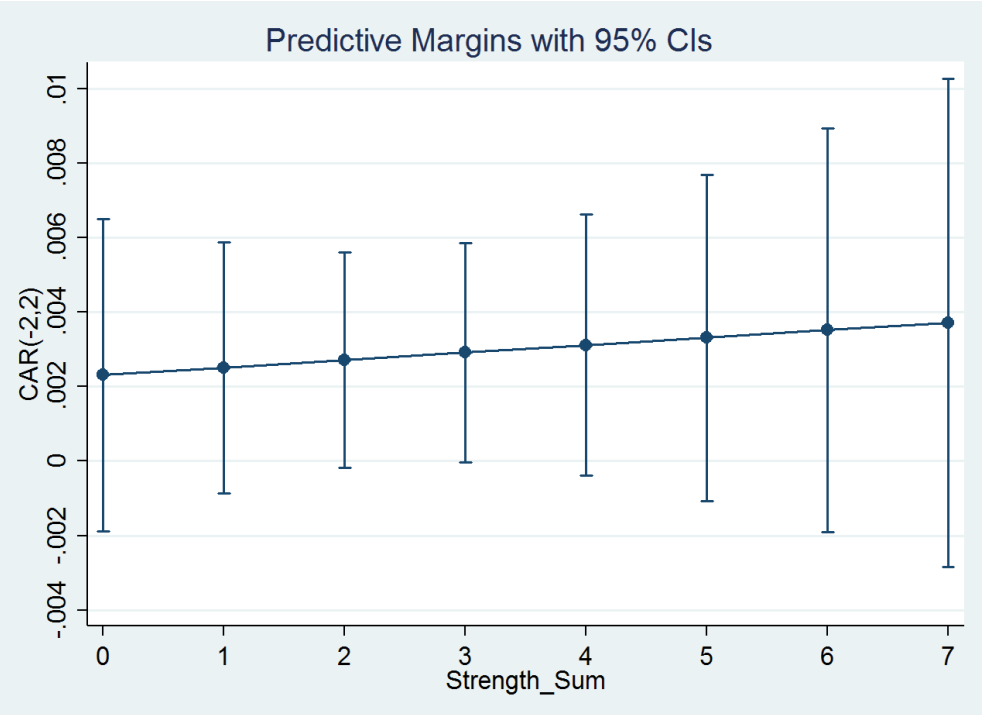
3.5.2.2 CSR Strengths and Concerns Ratings

We further separately examine the effect of responsible and irresponsible CSR ratings through cross-sectional multivariate regressions. We regress the acquiring firm's cumulative abnormal returns on the two responsible and irresponsible (CSR strength and concern) measures, and include the firm- and deal-specific characteristics discussed in section 4.3. We take the three-day merger cumulative abnormal returns *CAR(-1,1)* as the key dependent variable. The CARs of other event windows are used for further sensitivity and robustness tests.

Table 3.5 shows the effects of overall socially responsible and irresponsible ratings on the acquirer's CAR. The results are estimated based on ordinary least squares (OLS) method with standard error for heteroscedasticity adjustment. Model 1 investigates the impact of the total ratings of CSR strengths and concerns on the acquirer's CAR. It is shown that the coefficient for CSR *Strength_sum* is insignificant, while CSR *Concern_sum* is significantly negative at the 1% level. These results imply that the acquirer's merger abnormal announcement returns do not increase with the firm's increasing social responsibility ratings, which is consistent with Hamilton et al. (1993). However, acquirers who display higher social irresponsibility realise significantly lower returns in mergers. The coefficient indicates that there is an average decrease of 0.22% in the acquirer's *CAR(-1,1)* associated with one standard deviation increase in the total value of CSR concerns. Figure 3.1 shows the marginal effects of CSR strength and concern ratings against acquirers' cumulative abnormal returns. CAR increases from 0.023 to 0.038 (0.015 difference) with the increasing CSR strength, while acquirer CAR declines from 0.075 to -0.08 (0.155 difference), which is approximately ten times the difference shown by the CAR increase group.

Figure 3. 1: CSR Marginal Effects

These figures present the marginal effects of CSR strength and CSR concern sum ratings on acquirers' cumulative abnormal returns in mergers.



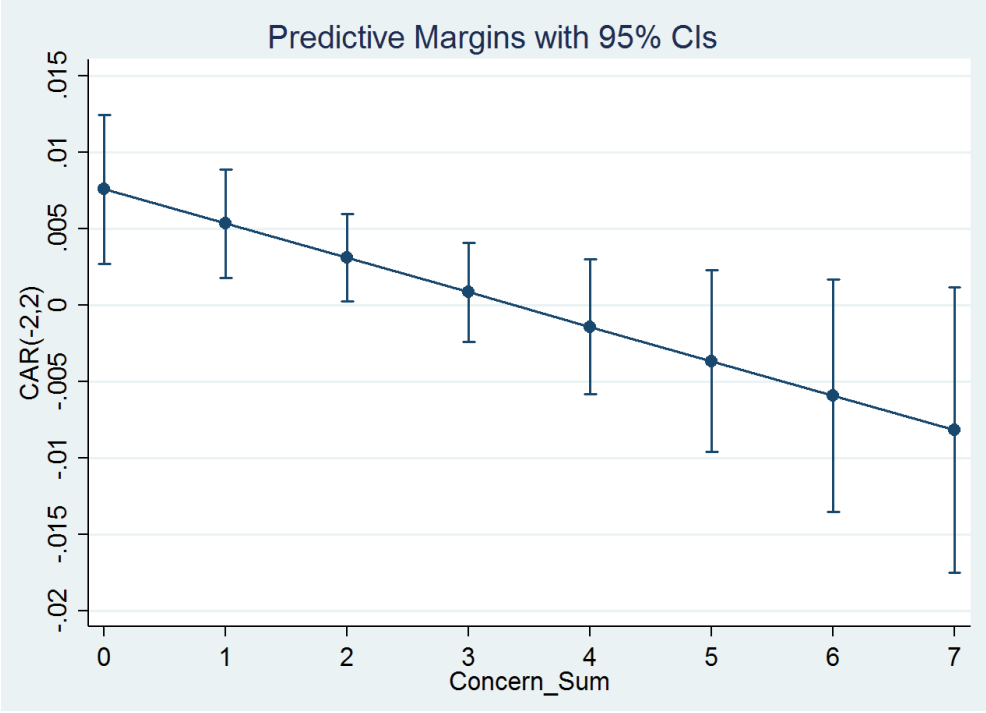


Table 3. 5
Cumulative Abnormal Returns against CSR Strengths and Concerns

This table reports the coefficients from regressions of the CARs of acquiring firms against CSR strengths and concerns in different event windows. Model 1 shows the regression results by acquirer's merger announcement return over CSR strength and concern overall score measurement. Model 2 shows the regression results use acquirer's CSR strength and concern dummy measurement for each CSR dimensions. Model 3-6 use different merger announcement event windows of acquirer's cumulative abnormal returns. The firm and deal level control variables discussed in section 4.3 are included in all models. All models also include the year and industry fixed effects. Descriptions of the explanatory variables are provided in Appendix B.1. *, ** and *** denote significance levels at the 10%, 5%, and 1% level, respectively.

	CAR(-1,1)		CAR(-2,2)		CAR(-5,5)	
	(1)	(2)	(3)	(4)	(5)	(6)
Strength_Sum	0.00030		0.00020		-0.00049	
	(0.547)		(0.307)		(-0.573)	
Concern_Sum	-0.00220***		-0.00225**		-0.00246*	
	(-2.736)		(-2.403)		(-1.957)	
CSR_Strength		0.00053		-0.00054		-0.00531
		(0.137)		(-0.117)		(-0.865)
CSR_Concern		-0.00804*		-0.00991*		-0.01170*
		(-1.922)		(-1.955)		(-1.670)
Firmsize	-0.00202	-0.00270**	-0.00125	-0.00185	-0.00265	-0.00351*
	(-1.383)	(-2.007)	(-0.736)	(-1.197)	(-1.165)	(-1.685)
Leverage	0.05004**	0.05055***	0.05612**	0.05662**	0.01886	0.02100
	(2.571)	(2.600)	(2.385)	(2.417)	(0.586)	(0.652)
TobinQ	0.00347	0.00359	0.00417	0.00436*	-0.00240	-0.00198
	(1.569)	(1.627)	(1.589)	(1.670)	(-0.712)	(-0.585)
MB	-0.00027	-0.00024	-0.00058	-0.00057	0.00116	0.00114
	(-0.297)	(-0.264)	(-0.526)	(-0.513)	(0.827)	(0.804)
Freecashflow	0.00858	0.00961	0.01488	0.01578	0.06380*	0.06368*
	(0.355)	(0.393)	(0.503)	(0.527)	(1.918)	(1.903)
Diversifying	-0.00026	-0.00039	-0.00033	-0.00037	0.00286	0.00273
	(-0.080)	(-0.121)	(-0.083)	(-0.094)	(0.533)	(0.510)
Targetprivate	0.01023***	0.01044***	0.00763*	0.00785*	0.00778	0.00790
	(2.988)	(3.048)	(1.856)	(1.911)	(1.396)	(1.416)
Relsize	-0.01157	-0.01110	-0.01907**	-0.01857**	-0.01740	-0.01666
	(-1.494)	(-1.453)	(-2.199)	(-2.170)	(-1.530)	(-1.482)
Cashonly	0.00509	0.00522	0.00443	0.00458	0.00263	0.00290
	(1.514)	(1.551)	(1.118)	(1.156)	(0.485)	(0.537)
Hostile	-0.00628	-0.00413	-0.00441	-0.00215	-0.01903	-0.01635
	(-0.382)	(-0.243)	(-0.253)	(-0.120)	(-0.895)	(-0.764)
Tender	0.00448	0.00429	0.00443	0.00430	0.00214	0.00212
	(0.965)	(0.923)	(0.837)	(0.812)	(0.297)	(0.294)
Constant	0.00127	0.00880	-0.00663	0.00201	0.02703	0.04069*
	(0.086)	(0.630)	(-0.386)	(0.123)	(1.109)	(1.765)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1752	1752	1752	1752	1752	1752
Adj. R^2	0.075	0.074	0.059	0.059	0.035	0.035

Model 2 of Table 3.5 reports the results by using CSR strength and concern dummy proxies. In contrast to the *CSR_sum* measures, the CSR strength and concern dummy variables measure the presence of any responsible and irresponsible activities respectively. We find consistent results with model 1, that *Strength_dummy* is statistically indistinguishable from zero, but that *Concern_dummy* is negative and significant. These also suggest that acquirers who have better social responsibility cannot realise higher abnormal returns, but that the market is sensitive to CSR concerns and reacts negatively to socially irresponsible behaviour. Models 3–6 re-estimate models 1 and 2 using alternative five- and eleven-day event windows. Results from models 3–6 show that CSR strength is still insignificant, while CSR concern has a significant negative relationship with acquiring firms' CARs. These results indicate that our findings of the asymmetric effects of CSR on acquirers' shareholder returns are robust and sensitive across alternative event windows.

Overall, the findings reported in the Table 3.5 confirm the univariate results. These findings indicate that the stock market does not reward the acquiring firms for making more corporate social responsibility activities in mergers. However, the stock market may punish acquirers who are involved in socially irresponsible behaviour. Our findings do not exclude the theory of stakeholder value maximisation, but work as an extension to Deng et al. (2013). Our research shows that the benefits for shareholder returns to acquirers with higher overall CSR in mergers are driven by lower CSR concern ratings; this is consistent with our *Irresponsible CSR deprecation hypothesis.*

3.5.2.3 Individual dimensions of CSR strengths and concerns

One concern about our results is that some firms may be excessively socially irresponsible in particular areas (for example, those firms who excessively pollute the environment), and that this may be driving our results. Therefore, we further investigate the relationship between acquirer CAR in mergers and the individual CSR dimensions, to empirically determine whether some CSR components dominate acquirer's merger performance.

As with the overall CSR measures, we generate individual CSR measurements from

the total number of scores in each dimension. Table 3.6 shows the effects of CSR dimension values on abnormal returns. The dependent variable is *CAR(-1,1)* and include acquirer- and deal-level control variables, as well as the year and industry fixed effects in all the models. The estimated coefficient of control variables are not reported, because the results are statistically similar to the one shown in Table 3.5. Table 3.6 indicates that no specific dimension of CSR strengths has a significant influence on CARs. However, the aspects of CSR concerns on the community, employment relations, environment and human rights dimensions have significantly negative effects on merger returns. The CSR concerns for the corporate governance, diversity and product characteristics dimensions are not statistically distinguishable from zero. These results indicate that some CSR irresponsible activities have a more significant effect than others.

3.6 Robustness Checks and Sensitivity Tests

This section will further test the robustness of our results by conducting additional analysis. The robustness checks are alternative model specifications, endogeneity tests, alternative CSR measurements and other sensitivity checks. The results of robustness tests are summarised below.

3.6.1 Alternative Model Specifications

The correlation matrix for the variables in our analysis are reported in the Appendix B.3. It shows that CSR strength and CSR concern are highly correlated (0.488). One possible concern for the research results is that the findings might be driven by multicollinearity issues between two variables. Therefore, we take alternative model specifications to further check the robustness of our results. Taking the acquirers' CAR in various event windows as the primary dependent variables, we separately run models with *Strength_Sum* and *Concern_Sum* as the main explanatory variables. All models include a series of firm- and deal-level characteristics, as discussed in section 4.3, and control for the year and industry fixed effects. Table 3.7 reports the consistent results: *Strength_Sum* continues to have insignificant effects on CARs, but the coefficient for *Concern_Sum* is highly significant in every event windows. These findings suggest that our results are robust even taking alternative model specifications.

Table 3. 6
Regression Results for CSR Individual Dimensions

This table represents the coefficients from regressions of the cumulative abnormal returns of acquiring firms against CSR strengths and concerns dimensions. The dependent variable *CAR(-1,1)* is acquirer's three-day cumulative abnormal return. The regression results use the acquirer's CSR strength and concern summing rating measurement. A series of the firm- and deal-level control variables discussed in section 4.3 are included in all models. All models also include the year and industry fixed effects. Descriptions of the variables are reported in Appendix B.1. *, ** and *** denote significance levels at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Corporate Governance	Community	Diversity	Employee Relations	Environment	Human Rights	Product
Strength_Sun	0.00312	-0.00040	-0.00054	-0.00003	-0.00070	0.00403	0.00345
	(0.94)	(-0.18)	(-0.40)	(-0.02)	(-0.37)	(0.67)	(1.04)
Concern_Sum	-0.00349	-0.00832*	-0.00087	-0.00482**	-0.00448**	-0.01208***	-0.00078
	(-1.36)	(-1.77)	(-0.30)	(-1.96)	(-2.02)	(-2.74)	(-0.32)
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1752	1752	1752	1752	1752	1752	1752
Adj. R^2	0.073	0.073	0.071	0.074	0.073	0.075	0.072

Table 3. 7
CSR Strength and CSR Concern Rating Separately

This table reports the regression results of the acquirer's CARs against CSR strength and CSR concern rating separately in different event windows. Model 1 shows the regression results by acquirer's merger announcement return over CSR strength overall score measurement. Model 2 shows the regression results use the acquirer's CSR concern overall score measurement. Model 3-6 use different merger announcement event windows of acquirer's cumulative abnormal returns. A series of the firm- and deal-level control variables discussed in section 4.3 is included in all models. All models also include the year and industry fixed effects. Descriptions of the explanatory variables are reported in Appendix B.1. *, ** and *** denote significance levels at the 10%, 5%, and 1% level, respectively.

	CAR(-1,1)		CAR(-2,2)		CAR(-5,5)	
	(1)	(2)	(3)	(4)	(5)	(6)
Strength_Sum	-0.00011		-0.00022		-0.00095	
	(-0.202)		(-0.339)		(-1.141)	
Concern_Sum		-0.00209***		-0.00218**		-0.00264**
		(-2.680)		(-2.391)		(-2.180)
Firmsize	-0.00294**	-0.00170	-0.00220	-0.00104	-0.00368*	-0.00316
	(-2.091)	(-1.279)	(-1.340)	(-0.681)	(-1.682)	(-1.514)
Leverage	0.05121***	0.04921**	0.05731**	0.05557**	0.02016	0.02022
	(2.620)	(2.538)	(2.427)	(2.378)	(0.624)	(0.630)
TobinQ	0.00337	0.00343	0.00407	0.00414	-0.00251	-0.00233
	(1.530)	(1.557)	(1.555)	(1.586)	(-0.745)	(-0.691)
MB	-0.00018	-0.00026	-0.00049	-0.00057	0.00126	0.00114
	(-0.198)	(-0.281)	(-0.441)	(-0.518)	(0.897)	(0.808)
Freecashflow	0.00945	0.00894	0.01576	0.01511	0.06477*	0.06323*
	(0.396)	(0.369)	(0.538)	(0.511)	(1.953)	(1.900)
Diversifying	-0.00089	-0.00022	-0.00097	-0.00030	0.00216	0.00280
	(-0.276)	(-0.068)	(-0.248)	(-0.077)	(0.405)	(0.521)
Targetprivate	0.01024***	0.01025***	0.00764*	0.00765*	0.00780	0.00774
	(2.984)	(2.995)	(1.855)	(1.860)	(1.397)	(1.388)
Relsize	-0.01128	-0.01172	-0.01878**	-0.01917**	-0.01708	-0.01716
	(-1.462)	(-1.516)	(-2.167)	(-2.215)	(-1.503)	(-1.512)
Cashonly	0.00524	0.00507	0.00459	0.00442	0.00280	0.00266
	(1.553)	(1.510)	(1.154)	(1.115)	(0.516)	(0.490)
Hostile	-0.00501	-0.00673	-0.00311	-0.00471	-0.01761	-0.01830
	(-0.295)	(-0.408)	(-0.172)	(-0.270)	(-0.804)	(-0.868)
Tender	0.00407	0.00444	0.00401	0.00440	0.00169	0.00220
	(0.875)	(0.957)	(0.756)	(0.832)	(0.234)	(0.305)
Constant	0.00555	-0.00066	-0.00227	-0.00792	0.03180	0.03019
	(0.377)	(-0.046)	(-0.133)	(-0.475)	(1.313)	(1.270)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1752	1752	1752	1752	1752	1752
Adj. R^2	0.072	0.076	0.057	0.060	0.033	0.035

3.6.2 Endogeneity Tests

This section examines endogeneity issues using an instrumental variable and the 2SLS technique. Although several acquirer- and deal-specific factors that may affect merger returns are controlled in the models, the potential endogeneity and omitted variable bias problem must still be considered. The causal relationship between CSR and acquirers' returns may be driven by omitted variables related to both CSR and merger performance. For example, a company that pollutes the environment can potentially be the same company with weak management. In this case, a reduction of the acquirer's return in mergers may be due to inferior managerial strength of the merger bidder rather than its socially irresponsible behaviours.

In order to address the potential endogeneity problems, this chapter employs 2SLS regression analysis with instruments for the endogenous variables *Strength_Sum* and *Concerns_Sum*. The first instrument we use is a blue state dummy with a value of 1 if a firm's headquarter is reside in a Democrat ("blue") state, and 0 otherwise. Companies with higher corporate social responsible ratings are more likely to be headquartered in Democrat states (Rubin, 2008). This instrumental variable is associated with the company's CSR rating, but corporate headquarters' preference for "blue" or "red" states is unlikely to have a direct effect on merger performance. The second instrument is the average total number of an acquirer's CSR strength or concern in seven qualitative dimensions of other firms in the same industry and year (El Ghoul et al., 2011; Stellner et al., 2015; Jha & Cox, 2015). Previous studies show that industries have a preference to cluster in specific geographic locations (Baptista & Swann, 1998; Krugman, 1991), which suggests that firms in an industry might be similar. A CSR strength and concern rating for a specific industry correlates strongly with acquirers' CSR strengths and concerns, which meet the instrumental variable relevance requirement. However, the instruments built on the other firms in the entire industry and specific year are unlikly to have significant effects on merger performance, and therefore also meet the instrumental variable exclusion requirement.

Table 3. 8
Robustness to Endogeneity

This table reports the results of the instrumental variables analysis to test the association between acquiring firms' CSR strength and concern on merger returns. The instrument *BlueState* equals to 1 if a company's headquarter resides in a Democrat ("blue") state, and 0 otherwise. The instrument *Strength_Industry* is the average number of an acquirer's CSR strength in seven qualitative CSR dimensions of other firms in the same industry and year. The instrument *Concern_Industry* is the average total number of an acquirer's CSR concern in seven qualitative CSR dimensions of other firms in the same industry and year. Panel A shows the endogeneity test results for *Strength_Sum* by using *BlueState* and *Strength_Industry* as instrumental variables. Model 1 reports the first stage regression results with *Strength_Sum* as dependent variable and Model 2 reports its 2SLS results. Panel B shows the endogeneity test results for *Concern_Sum* by using *BlueState* and *Concern_Industry* as instrumental variables. Model 3 shows the first stage regression results with *Concern_Sum* as dependent variable and Model 4 shows its 2SLS results. A series of the firm and deal level control variables discussed in section 4.3 is included in all models. All models also include the year and industry fixed effects. Descriptions of the explanatory variables are provided in Appendix B.1. *, ** and *** denote significance levels at the 10%, 5%, and 1%, respectively.

Panel A: Strength_Sum			Panel B: Concern_Sum		
	OLS	2SLS		OLS	2SLS
	(1)	(2)		(3)	(4)
Strength_Sum		-0.00284	*Concern_Sum*		-0.00751**
		(-0.79)			(-2.00)
BlueState	0.45031***		*BlueState*	0.30680**	
	(2.76)			(2.29)	
Strength_Industry	0.54718***		*Concern_Industry*	0.53438***	
	(5.63)			(5.21)	
Firmsize	1.28525***	0.00064	*Firmsize*	0.64448***	0.00192
	(22.72)	(0.13)		(16.09)	(0.72)
Leverage	-3.03467***	0.04460**	*Leverage*	-0.92706*	0.04504**
	(-4.01)	(2.09)		(-1.68)	(2.48)
TobinQ	-0.15249*	0.00304	*TobinQ*	0.03411	0.00361*
	(-1.79)	(1.46)		(0.61)	(1.75)
MB	0.03685	-0.00014	*MB*	-0.03925	-0.00051
	(0.93)	(-0.16)		(-1.46)	(-0.59)
Freecashflow	1.20587	0.01296	*Freecashflow*	0.06204	0.00818
	(1.40)	(0.57)		(0.11)	(0.35)
Diversifying	0.20357	-0.00014	*Diversifying*	0.27528**	0.00162
	(1.33)	(-0.04)		(2.64)	(0.49)
Targetprivate	0.09941	0.01068***	*Targetprivate*	0.01994	0.01051***
	(0.71)	(3.34)		(0.21)	(3.31)
Relsize	-0.59717***	-0.01371*	*Relsize*	-0.21519	-0.01372*
	(-2.82)	(-1.85)		(-1.34)	(-1.90)
Cashonly	-0.0862	0.00476	*Cashonly*	-0.09007	0.00443
	(-0.61)	(1.51)		(-0.92)	(1.41)
Hostile	-1.7225***	-0.01371	*Hostile*	-0.99879*	-0.01502
	(-3.75)	(-0.75)		(-1.89)	(-0.99)
Tender	0.04782	0.00438	*Tender*	0.18083	0.00567
	(0.20)	(1.00)		(1.15)	(1.27)
Constant	-9.11913***	0.01094	*Constant*	-4.93269***	0.00336
	(-10.78)	(0.34)		(-7.78)	(0.15)
Year FE	Yes	Yes	Year FE	Yes	Yes
Industry FE	Yes	Yes	Industry FE	Yes	Yes
Observations	1727	1727	Observations	1727	1727
Adj. R^2	0.5919	0.2119	Adj. R^2	0.4872	0.2034

The results of the instrumental variable analysis that investigates the relationship between an acquirer's CSR strength and concern on merger transaction abnormal returns are reported in the Table 3.8. All models include firm- and deal-specific control variables (discussed in section 4.3) and also include the year and industry fixed effects. The first stage regression with *BlueState* and *Strength_Industry* as instruments for the potentially endogenous variable *Strength_Sum* is reported in the Model 1. As expected, both instrumental variables are positive and highly significant (1% level), which confirms the relevance of our instruments for the potentially endogenous variable. The results of 2SLS second stage regression are reported in the Model 2. The coefficient for *Strength_Sum* is still insignificant. Model 3 shows the similar and significantly positive results for first stage regression with *BlueState* and *Concern_Industry* as instrumental variables for testing the potential endogeneity problem of *Concern_Sum*. In contrast, the second stage regression results in Model 4 show *Concern_Sum* to still be significantly negatively correlated with CAR, which further confirms the robustness of our finding that acquirers with more irresponsible CSR activities realise significant negative abnormal returns in merger transactions, even when the potential endogeneity problem is considered.

3.6.3 Additional CSR Controversial Business Issues Controls

In addition to the approximate indicators for the CSR qualitative issues, KLD database also offers the information on controversial business issues for companies in the following areas: nuclear power, alcohol, firearms, tobacco, gambling, and military. In contrast to the CSR qualitative ratings, KLD's controversial business issues are only an indicator that the company is in a controversial business area. Institutional investors who are restricted by societal norms pay a financial cost to avoid stocks with controversial business issues (Hong and Kacperczyk, 2009). One concern in our research is that our findings may be driven by companies in controversial industries. To mitigate concerns from societal norms, we modify our models by including additional CSR controversial controls.

Table 3. 9
Robustness Test with Additional CSR Controversial Controls

This table shows the robustness tests results by adding additional CSR controversial concern variables. The dependent variable *CAR(-1,1)* is the acquirer's three-day cumulative abnormal returns. Mode l-4 show coefficients from regressions of the CARs of acquiring firms' CSR strength and CSR concern ratings. Model 5-8 show coefficients from regressions of the CARs of acquiring firms' CSR strength and CSR concern dummy measurement. Descriptions of the explanatory variables are reported in Appendix B.1. A series of the firm- and deal-level control variables discussed in section 4.3 is included in all models. All models also include the year and industry fixed effects. *, ** and *** denote significance levels at the 10%, 5%, and 1% level, respectively.

	CSR_Sum				CSR_Dummy			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Strength_Sum	0.00017	0.00025	0.00022	0.00024				
	(0.308)	(0.453)	(0.388)	(0.424)				
Concern_Sum	-0.00205**	-0.00205**	-0.00196**	-0.00196**				
	(-2.507)	(-2.519)	(-2.373)	(-2.381)				
Strength_dummy					0.00036	0.00046	0.00048	0.00049
					(0.093)	(0.119)	(0.125)	(0.127)
Concern_dummy					-0.00813*	-0.00796*	-0.00789*	-0.00787*
					(-1.945)	(-1.905)	(-1.895)	(-1.891)
Controversial_Sum	0.01166***				0.01239***			
	(2.632)				(2.814)			
Controversial_dummy		0.01026**				0.01126**		
		(2.000)				(2.209)		
alc_Sum			0.01377				0.01068	
			(1.282)				(0.960)	
gam_Sum			0.00107				0.00253	
			(0.088)				(0.205)	
tob_Sum			0.04455**				0.04688**	
			(2.223)				(2.368)	
mil_Sum			0.01022*				0.01089**	
			(1.945)				(2.083)	
nuc_Sum			0.00514				0.00424	
			(0.252)				(0.203)	
fir_Sum			0.03779**				0.03833**	
			(2.096)				(2.276)	

(*Continued*)

Table 3.9 – *Continued*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
acl_dummy				0.01359				0.01048
				(1.266)				(0.943)
gam_dummy				0.00118				0.00264
				(0.096)				(0.213)
tob_dummy				0.04458**				0.04693**
				(2.224)				(2.371)
mil_dummy				0.00968*				0.01045*
				(1.692)				(1.835)
nuc_dummy				0.00514				0.00424
				(0.251)				(0.203)
fir_dummy				0.03790**				0.03837**
				(2.101)				(2.278)
Constant	0.00041	0.00117	0.00238	0.00246	0.00835	0.00849	0.00973	0.00966
	(0.028)	(0.079)	(0.162)	(0.167)	(0.598)	(0.608)	(0.699)	(0.693)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1752	1752	1752	1752	1752	1752	1752	1752
Adj. R^2	0.079	0.077	0.078	0.078	0.078	0.076	0.078	0.077

As with the variables used in the CSR qualitative analysis, we use two groups of CSR controversial measurements: a total controversial concern rating and total concern for each dimension. Specifically, we create a dummy variable for a company involved in any controversial business problem, and a dummy variable that indicates any concern in each controversial dimension. The detailed variable definition is in Appendix B.1. We control for the additional controversial variables and report the re-estimated models in Table 3.5. Table 3.9 shows that the coefficients for both *Concern_sum* and *Concern_dummy* are still significant and negative across all the event windows when additional CSR controversial variables are used to control the effects of norm concerns. The CSR strength groups continue to be insignificant. These results enhance our previous evidence that acquirers' socially responsible activities do not affect merger returns, but that the market reacts negatively to acquirers' socially irresponsible behaviours.

3.6.4 Other Sensitivity Tests

This section will conduct additional tests for sensitivity and robustness checks. First, the findings of this chapter are robust when considering the effects of target firms' CSR performance. Aktas et al. (2011) show that acquirer's abnormal announcement returns may be related to target CSR performance. One possible explanation is that our results are from socially irresponsible acquirers inclined to merge high CSR concern targets or targets from high CSR concern industries. Therefore, acquirers' merger performance would partially reflect targets' social responsibility performance. In order to examine this alternative explanation, we report the re-estimated models in Table 3.5 with additional CSR target control variables.

Specifically, we first generate a dummy variable to capture any existing target CSR dimensions; we then control when the target's CSR strength and CSR concern ratings are higher than that of the acquirer. The regression results reported in the Table 3.10 are consistent with our earlier results. It indicates that our main findings on the negative relationship between an acquirer's CSR concern rating and CARs are not affected by the target's CSR rating.

Table 3. 10
Additional Target CSR Controls

This table reports the robustness tests results by adding additional CSR performance of target firms. The dependent variable is the acquirer's cumulative abnormal returns of possible event windows. Panel A reports the results by including CSR target dimension controls. Panel B reports the results by including the relative CSR performance between acquirer and target as controls. Descriptions of the variables are provided in Appendix B.1. A series of the firm and deal level control variables discussed in section 4.3 is included in all models. All models also include the year and industry fixed effects. *, ** and *** denote significance levels at the 10%, 5%, and 1%, respectively.

Panel A: CSR target dimension controls						
	CAR(-1,1)		CAR(-2,2)		CAR(-5,5)	
	(1)	(2)	(3)	(4)	(5)	(6)
Strength_Sum	0.00035		0.00026		-0.00040	
	(0.637)		(0.396)		(-0.467)	
Concern_Sum	-0.00203**		-0.00205**		-0.00221*	
	(-2.543)		(-2.206)		(-1.747)	
CSR_Strength		0.00080		-0.00023		-0.00494
		(0.209)		(-0.049)		(-0.806)
CSR_Concern		-0.00812*		-0.01000**		-0.01179*
		(-1.944)		(-1.977)		(-1.688)
TGT_Strength_dummy	-0.02054*	-0.02151*	-0.02254*	-0.02351*	-0.01838	-0.01921
	(-1.780)	(-1.881)	(-1.759)	(-1.855)	(-1.048)	(-1.111)
TGT_Concern_dummy	-0.00025	-0.00067	-0.00104	-0.00153	-0.01147	-0.01241
	(-0.023)	(-0.065)	(-0.093)	(-0.138)	(-0.765)	(-0.844)
Constant	-0.00147	0.00498	-0.00970	-0.00227	0.02372	0.03567
	(-0.099)	(0.355)	(-0.564)	(-0.139)	(0.968)	(1.535)
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1752	1752	1752	1752	1752	1752
Adj. R^2	0.079	0.079	0.063	0.063	0.037	0.038

(*Continued*)

Table 3.10 – *Continued*

Panel B: Relative CSR performance between acquirer and target as controls						
	CAR(-1,1)		CAR(-2,2)		CAR(-5,5)	
	(1)	(2)	(3)	(4)	(5)	(6)
Strength_Sum	0.00024		0.00015		-0.00059	
	(0.434)		(0.233)		(-0.690)	
Concern_Sum	-0.00226***		-0.00233**		-0.00260**	
	(-2.773)		(-2.477)		(-2.062)	
CSR_Strength		0.00027		-0.00080		-0.00583
		(0.069)		(-0.175)		(-0.950)
CSR_Concern		-0.00812*		-0.01010**		-0.01202*
		(-1.942)		(-1.999)		(-1.720)
Target_strength_high	-0.01611	-0.01538	-0.01356	-0.01279	-0.02709	-0.02580
	(-1.555)	(-1.490)	(-1.115)	(-1.049)	(-1.634)	(-1.529)
Target_concern_high	-0.00264	-0.00117	-0.00725	-0.00613	-0.01127	-0.01043
	(-0.159)	(-0.071)	(-0.380)	(-0.322)	(-0.466)	(-0.431)
Constant	0.00004	0.00816	-0.00771	0.00156	0.02490	0.03976*
	(0.003)	(0.583)	(-0.448)	(0.096)	(1.016)	(1.715)
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1752	1752	1752	1752	1752	1752
Adj. R^2	0.075	0.074	0.059	0.059	0.035	0.035

Second, our findings are robust to measuring bidder abnormal announcement returns using alternative five- and eleven-day event windows. Third, our findings are robust when we expand the merger sample to include those acquirers that own more than 50% ownership of the target firm's shares after merger transactions, rather than 100%. Fourth, our evidence is robust when including acquirers in the financial (SIC 6000-6999) and utilities (SIC 4900-4999) industries. Lastly, our results remain robust when adjusting the numbers of CSR indicators for CSR strength and concern ratings[16].

3.7 Summary and Conclusion

This chapter makes contributions from a new perspective to the ongoing debate about

[16] The results of these other sensitive tests are broadly unchanged, and therefore not reported. Available upon request.

the impacts of corporate social responsibility on shareholder wealth. We investigate how a firm's socially responsible and irresponsible activities affect shareholder wealth in mergers differently, using two components of CSR measurements. Our findings extend the stakeholder value maximisation theory by documenting that the CSR strengths of an acquiring firm do not have significant effects on their shareholder returns, while CSR concerns about acquirers have significant negative effects on merger returns. It implies that the stock market does not reward those good CSR activities made by acquiring firms, but rather punishes those that engage in socially irresponsible activities. In particular, acquirers realise lower cumulative abnormal returns when their CSR concerns are high in the community, employment relations, environment and human rights dimensions.

Overall, this chapter indicates that acquirers' CSR concern ratings play a vital role in the stakeholder value maximisation theory. These findings suggest that, although CSR cannot increase shareholder returns in the short-term, acquiring firms can minimise their socially irresponsible behaviours to potentially increase merger returns. Our findings are robust to alternative event windows and tests for endogeneity, and persist after additional CSR controversial business issues and target CSR ratings are considered.

Appendix B. 1: Variable Definitions and Data Sources for Chapter 3

Variable	Variable description & data source
Panel A: Abnormal announcement returns	
CAR(-1, 1)	Three-day acquirer's cumulative abnormal return around merger transactions estimated by the market model. The estimated windows is (−210, −11) and the value-weighted return is used to generate the market index. Source: CRSP.
CAR(-2, 2)	Five-day acquirer's cumulative abnormal return around merger transactions estimated by the market model. The estimated windows is (−210, −11) and the value-weighted return is used to generate the market index. Source: CRSP.
CAR(-5, 5)	Eleven-day acquirer's cumulative abnormal return around merger transactions estimated by the market model. The estimated windows is (−210, −11) and the value-weighted return is used to generate the market index. Source: CRSP.
Panel B: Corporate social responsibility	
Strength_Sum	The sum of the total number CSR strengths in seven qualitative CSR dimensions, which include employee relations, product, community, corporate governance, environment, diversity, and human rights. Source: KLD.
Concern_Sum	The sum of the total number CSR concerns in seven qualitative CSR dimensions, which include employee relations, product, community, corporate governance, environment, diversity, and human rights. Source: KLD.
Strength_dummy	A dummy variable value equals to one if the acquirer's company has any areas of the employee relations, product, community, corporate governance, environment, diversity, and human rights dimensions marked as a strength, and zero otherwise. Source: KLD.
Concern_dummy	A dummy variable value equals to one if the acquirer's company has any areas of the employee relations, product, community, corporate governance, environment, diversity, and human rights dimensions marked as a concern, and zero otherwise. Source: KLD.
RawCSR	The value difference between the sum of CSR strength scores and the sum of CSR concern scores in seven qualitative CSR dimensions. Source: KLD.
AdjCSR	The adjusted value of *RawCSR* variable that is estimated by adjusting the number of indicators of CSR strength and concern in seven qualitative CSR dimensions. Source: KLD.
Controversial_Sum	The total score of CSR controversial (firearms, alcohol, nuclear power, gambling, military, and tobacco) dimensions for the firm-year. Source: KLD.
Controversial _dummy	A dummy variable value equals to one if the acquirer has any areas of above mentioned controversial rating marked a concern, and zero otherwise. Source: KLD.
alc_Sum	The score in CSR alcohol dimension for the firm-year. Source: KLD.

(*Continued*)

Appendix B.1 – *Continued*

alc_dummy	A dummy variable value equals to one if the acquirer in alcohol dimension marked a concern, and zero otherwise. Source: KLD.
gam_ Sum	The score in CSR gambling dimension for the firm-year. Source: KLD.
gam_dummy	A dummy variable value equals to one if the acquirer in gambling dimension marked a concern, and zero otherwise. Source: KLD.
tob_ Sum	The score in CSR tobacco dimension for the firm-year. Source: KLD.
tob_dummy	A dummy variable value equals to one if the acquirer in tobacco dimension marked a concern, and zero otherwise. Source: KLD.
mil_ Sum	The score in CSR military dimension for the firm-year. Source: KLD.
mil_dummy	A dummy variable value equals to one if the acquirer in military dimension marked a concern, and zero otherwise. Source: KLD.
nuc_ Sum	The score in CSR nuclear power dimension for the firm-year. Source: KLD.
nuc_dummy	A dummy variable value equals to one if the acquirer in nuclear power dimension marked a concern, and zero otherwise. Source: KLD.
fir_ Sum	The score in CSR firearms dimension for the firm-year. Source: KLD.
fir_dummy	A dummy variable value equals to one if the acquirer in firearms dimension marked a concern, and zero otherwise. Source: KLD.
TGT_Strength_dummy	A dummy variable value equals to one if the target company has any areas of the seven qualitative CSR dimensions marked as strength, and zero otherwise. Source: KLD.
TGT_Concern_dummy	A dummy variable value equals to one if the target company has any areas of the above mentioned seven qualitative CSR dimensions marked as concern, and zero otherwise. Source: KLD.
Target_strength_high	A dummy variable value equals to one if the target CSR strength rating is higher than that of the acquirer, and zero otherwise. Source: KLD.
Target_concern_high	A dummy variable value equals to one if the target CSR concern rating is higher than that of the acquirer, and zero otherwise. Source: KLD.
Panel C: Bidder characteristics	
Firmsize	Log of the book value of total assets. Source: Compustat.
Freecashflow	Operating income before depreciation the sum of interest expenses, income taxes and capital expenditures, scaled by book value of total assets. Source: Compustat.
Leverage	The ratio of the book value of debts divided to the market value of asset. Source: Compustat.
TobinQ	The ratio of the market value of assets to the book value of assets. Source: Compustat.
MB	The ratio of the market value of equity to the book value of equity. Source: Compustat.

(*Continued*)

Appendix B.1 – *Continued*

Panel D: Deal characteristics

Diversifying	A dummy variable value equals to one if acquirer and target firms are from different industries (based on SIC code), and zero otherwise. Source: SDC.
Targetprivate	A dummy variable value equals to one if the target is a private firm, and zero otherwise. Source: SDC.
Relsize	The ratio of the M&A deal value to acquirer's market value of equity. Source: SDC.
Cashonly	A dummy variable value equals to one if the merger is completed entirely with a cash payment, and zero otherwise. Source: SDC.
Hostile	A dummy variable value equals to one if a merger attitude is classified as hostile, and zero otherwise. Source: SDC.
Tender	A dummy variable value equals to one if the M&A deal is reported as a tender offer in SDC, and zero otherwise. Source: SDC.

Appendix B. 2: KLD Strength and Concern Indicators[17]

Category	Strength items	Concern items
Community	(1) charitable giving; (2) innovating giving; (3) non-US charitable giving; (4) support for housing; (5) support for education; (6) indigenous people relations; (7) volunteer programs; (8) other strength.	(1) investments controversies; (2) negative economic impact; (3) indigenous people relations; (4) tax disputed; (5) other concern.
Corporate Governance	(1) limited compensation; (2) ownership strength; (3) transparency strength; (4) political accountability strength; (5) other strength.	(1) high compensation; (2) ownership concern; (3) accounting concern; (4) transparency concern; (5) political accountability concern; (6) other concern.
Diversity	(1) CEO; (2) promotion; (3) board of directors; (4) work/ life benefits; (5) women & minority contracting; (6) employment of the disabled; (7) gay& lesbian policies; (8) other strength.	(1) controversies; (2) non-representation; (3) other concern.
Employee Relations	(1) union relations; (2) no-layoff policy; (3) cash profit sharing; (4) employee involvement; (5) retirement benefits strength; (6) health and safety strength; (7) other strength.	(1) union relations; (2) health and safety concern; (3) workforce reductions; (4) retirement benefits concern; (5) other concern.
Environment	(1) beneficial products and services; (2) pollution prevention; (3) recycling; (4) clean energy; (5) communications; (6) property, plant, and equipment; (7) management systems; (8) other strength.	(1) hazardous waste; (2) regulatory problems; (3) ozone depleting chemicals; (4) substantial emissions; (5) agricultural chemicals; (6) climate change; (7) other concern.
Human Rights	(1) positive record in South Africa; (2) indigenous people relations strength; (3) labour rights strength; (4) other strength.	(1) South Africa; (2) Northern Ireland; (3) Burma concern; (4) Mexico; (5) labour rights concern; (6) indigenous people relations concern; (7) other concern.
Product	(1) quality; (2) R&D/ innovation; (3) benefits to economically disadvantaged; (4) other strength.	(1) product safety; (2) marketing/ contracting concern; (3) antitrust; (4) other concern.

(*Continued*)

[17] The source of this KLD strength and concern indicators is from RiskMetrics Group, Inc. (2010) '*How to use KLD STATS and ESG ratings definitions'*.

Appendix B.2 – *Continued*

Alcohol	N/A	(1) licensing; (2) manufacturers; (3) manufacturers of products necessary for production of alcoholic beverages; (4) retailers; (5) ownership by an alcohol company; (6) ownership of an alcohol company; (7) alcohol other concern.
Gambling	N/A	(1) licensing; (2) manufacturers; (3) owners and operators; (4) supporting products or services (5) ownership by a gambling company; (6) ownership of a gambling company; (7) gambling other concern.
Tobacco	N/A	(1) licensing; (2) manufacturers; (3) manufacturers of products necessary for production of tobacco products; (4) retailers; (5) ownership by a tobacco company; (6) ownership of a tobacco company; (7) tobacco other concern.
Firearms	N/A	(1) manufacturers; (2) retailers; (3) ownership by a firearms Company; (4) ownership of a firearms company
Military	N/A	(1) manufacturers for weapons for weapons systems (2) manufacturers of components for weapons for weapons systems (3) ownership by a military company; (4) ownership of a military company; (5) minor weapons contracting involvement; (6) major weapons-related supplier; (7) military other concern.
Nuclear Power	N/A	(1) construction & design of nuclear power plants; (2) nuclear power fuel and key parts; (3) nuclear power service provider; (4) ownership of a nuclear power company; (5) ownership by a nuclear power company; (6) design; (7) fuel cycle/key parts; (8) nuclear power other concern.

Appendix B. 3: Variable Correlation Matrix

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1)	*CAR(-1,1)*	1.000													
(2)	*Strength_Sum*	-0.067	1.000												
(3)	*Concern_Sum*	-0.099	0.488	1.000											
(4)	*Firmsize*	-0.127	0.612	0.479	1.000										
(5)	*Leverage*	0.069	-0.097	0.059	0.071	1.000									
(6)	*TobinQ*	-0.012	0.118	-0.106	0.085	-0.532	1.000								
(7)	*MB*	-0.003	0.180	-0.046	0.182	-0.327	0.825	1.000							
(8)	*Freecashflow*	-0.007	0.184	0.057	0.182	-0.195	0.250	0.232	1.000						
(9)	*Diversifying*	-0.044	0.143	0.082	0.139	-0.018	0.025	0.066	0.080	1.000					
(10)	*Targetprivate*	0.093	-0.150	-0.174	-0.341	-0.178	0.141	0.055	-0.019	0.014	1.000				
(11)	*Relsize*	-0.020	-0.153	-0.041	-0.090	0.407	-0.256	-0.212	-0.108	-0.063	-0.184	1.000			
(12)	*Cashonly*	0.057	0.103	0.053	0.075	0.024	-0.120	-0.051	0.162	0.059	-0.133	-0.171	1.000		
(13)	*Hostile*	-0.025	0.009	0.028	0.073	0.027	-0.010	0.000	-0.003	0.011	-0.072	0.062	-0.031	1.000	
(14)	*Tender*	-0.021	0.110	0.105	0.198	0.036	-0.049	-0.009	0.077	0.026	-0.319	-0.045	0.235	0.146	1.000

Chapter 4:

The Value of Controversial Social Norms on Mergers and Acquisitions

4.1 Introduction

Researchers have argued that social norms, where the utility of actions is determined by the belief and actions of the community (Akerlof, 1980), have a wide range of influences on many economic and financial areas, including investor behaviours, corporate financial policies, and investment decisions. As a mirror of social norms, socially responsible investment (SRI) is increasingly popular worldwide. According to the 2016 Social Investment Forum, the total value of US-domiciled assets identified as SRI has grown dramatically and reached US$8.72 trillion in 2016.

The range of socially responsible investment varies widely, from corporate investments that are morally and ethically sound (such as doing investments in environmentally friendly institutions) to those that have controversial business issues and are perceived to be unethical. Firms with businesses supporting, manufacturing, retailing, licensing and ownership of military, tobacco, firearms, alcohol, nuclear power, and gambling are generally considered to be sin stocks (Statman & Glushkov, 2009; Leventis et al., 2013). Given their unique business characteristics, sin companies generally create an adverse context for the public, due to the conflict with the prevailing social norms. Due to their controversial issues, sin companies tend to receive stricter levels of regulatory monitoring, and face more litigation risk and higher legislative interventions (Hong & Kacperczyk, 2009), despite providing profitable investment potential (Hong & Kacperczyk, 2009; Chong et al., 2006; Salaber, 2009) and delivering excellent financial reporting and accounting (Kim & Venkatachalam, 2011).

Research on sin has been across a wide range of areas. Merton (1987) provides the theoretical foundation of the relationship between moral grounds and sin stocks return, by providing the neglect effects of the investor on a firm's risk-adjusted returns. Sin stock portfolios generally have higher returns than common benchmarks (Fabozzi et al., 2008). Sin stocks are not well accepted by socially-constrained investors, and therefore have less institutional ownership and analyst coverage; this leads to a lower valuation effect but higher expected returns compared with benchmarks (Hong and Kacperczyk, 2009). The variation of neglect-effects on sin stocks are further broadly extended to Pacific-basin markets (Durand et al., 2013) and G20 countries (Fauver & McDonald, 2014), where evidence is provided for

cultural differences towards sin at the international scale. Prior studies also examine the sin influence on stock dividends (Berman, 2002), financing decisions (Braun & Larrain, 2005), business diversification (Beneish, Jansen, Lewis, & Stuart, 2008), and audit pricing (Leventis et al., 2013).

However, there has been limited studies that offer evidence on the role of sin in corporate investment decisions. Therefore, this chapter investigates sin companies' investment efficiency by focusing on M&As, which set an ideal framework to analyse the relationship between sin and shareholders' wealth effects. First, as an important part of corporate investments, M&As have a significant influence on shareholders' wealth (Deng et al., 2013). Second, M&A deals are generally subject to approval from shareholders, which determines the success of post-deal integration. Therefore, M&As play an ideal role in examining the influence of sin on shareholder wealth. Third, the unanticipated nature of M&As provides a way to mitigate the reverse causality problems of the corporate social responsibility and firm value relations (Waddock & Graves, 1997; McWilliams & Siegel, 2000; Jiao, 2010; Teoh et al., 1999).

In light of the ongoing debate on the economic consequences of sin businesses, it remains an empirical question on how sin affects acquirers' shareholder wealth in M&A transactions. There are two competing predictions for the sin acquirers' M&A performance. One perspective suggests that the general public tends to have adverse impressions of sin companies, because these controversial business activities deviate from the prevailing social norms. This adverse image is exacerbated by media coverage and is always viewed as bad. Sin companies therefore generally receive restrictive legislative interventions and face high litigation risk. Consistent with this perspective, one possible result for sin acquirers is that they exhibit lower cumulative abnormal returns in M&A transactions compared with other comparable acquirers, due to the lack of interest from investors.

However, another perspective suggests sin companies receive favourable attention. For example, sin companies could have better performance than the market (Hong & Kacperczyk, 2009; Fabozzi et al., 2008), provide higher dividends (Berman, 2002), and have better financial reporting and higher accounting quality (Kim & Venkatachalam, 2011). Moreover, the elevated

monitoring from shareholders and the public faced by sin acquirers will force managers from the acquiring firms to produce higher quality M&A decisions to avoid scrutiny, legislative intervention, potential litigation, and negative media exposure of the corporate image. In this case, it is possible that M&A investment decisions made by managers of sin acquirers have more chances to outperform other acquirers and therefore experience higher announcement period abnormal stock returns.

We begin our investigation of our predictions by replicating and extending the valuation and equity returns effects on sin by Hong and Kacperczyk (2009). Their neglect-effect evidence on sin stock performance is based on a group of firms located in the industries with controversial business issues. However, the industry-level identification of sin does not comprehensively reflect the economic influence of controversial business issues, as sin companies are likely to strategically diversify their business into non-sin industries to mitigate the negative exposure to the public (Beneish et al., 2008). Instead, we employ the firm-level classification of sin and identify a broader sample of companies who have involvement in the supporting, manufacturing, retailing, licensing and ownership of tobacco, alcohol, military, gambling, nuclear power, and firearms. Consistent with the interpretation of previous research, we find firm-level evidence that sin stocks experience lower valuation and higher equity return effects, despite diversification into non-sin industries. Our findings suggest that institutional investors and analysts are not generally concerned by those sin industries. Instead, their neglect-effect on sin actually depends on the analysis of the upstream and downstream aspects of controversial business activities.

Next, we develop the standard event study empirical method to clearly distinguish the effects of the sin rating of acquirers on shareholders' wealth in M&As, using a firm-level sin sample from 1995 to 2013. Consistent with Hong and Kacperczyk (2009) and Leventis et al. (2013), we also capture a sample of control companies (non-sin) in the same industries as the sin companies, depend on the two-digit Standard Industrial Classification (SIC) codes. We find that sin acquirers exhibit higher cumulative abnormal returns in M&A transactions than control firms, even after controlling for the determinants of M&A returns. The findings of this chapter are also robust to the variation of M&As event windows. Thus, our collective evidence is

consistent with the view that social norms work as an effective monitoring role in controlling managers' opportunistic behaviour when making M&A investment decisions. Sin acquirers are generally outperform other acquirers regarding M&A shareholder returns, due to managerial pressure arising from the strict regulatory scrutiny and litigation risk. Our findings are consistent with Kim and Venkatachalam (2011) and Yoo et al. (2013), in that better financial reporting by sin acquirers reduces the issues of information asymmetry and adverse selection, and therefore improves monitoring by shareholders and the public of managerial investment behaviours; this in turn enhances M&A investment efficiency.

We then investigate the payment method preference of sin acquirers and the complete duration of sin-related M&A deals. We find that sin acquirers prefer to substitute stock with cash when financing the M&A deals. Our findings reconcile the idea that the pressure from regulatory scrutiny and litigation risk faced by sin acquirers might make them more likely to use cash to complete deals, to bypass legislative intervention (e.g. shareholder voting). Moreover, sin companies are running a cash-rich business (Beneish et al., 2008), which may be another consideration when they choose the M&A payment method. It is also because sin stocks are not well accepted as the payment method to finance the M&As. We also find that sin acquirers generally take ten days longer than non-sin companies for the transaction to be completed. This longer deal completion duration may be due to the conflict of social norms between sin acquirers and non-sin targets, which makes it difficult for post-deal integration.

This chapter makes contributions to the literature in several aspects. The main contribution is to the economic implications of social norms and their behavioural effects on shareholder wealth and corporate investment efficiency. In studying the impacts of sin on M&A investment decision efficiency, we provide evidence that sin acquirers outperform comparable non-sin acquirers in mergers and acquisitions returns. Secondly, we demonstrate the payment preference of sin acquiring firms when financing the M&A deals and find that they generally experience longer expected duration when completing the M&A transactions. Thirdly, our findings extend and generalise the results of Hong and Kacperczyk (2009), by showing firm-level evidence on the neglect-effects of sin stocks and confirming that investors are not simply frightened by the sin industries but are able to investigate the chain business of

controversial business activities. Finally, this chapter extends the determinants of M&A returns.

The organisation of the remainder of the chapter is as follows. We discuss research questions and develop our testable hypotheses in the next section. In Section 4.3, the definition of sin is examined. Section 4.4 shows the data construction and summary statistics. Section 4.5 presents the variables and how they are obtained. Section 4.6 presents the empirical results, and Section 4.7 discusses robustness checks and sensitivity tests. Section 4.8 provides a summary and conclusion.

4.2 Research Questions and Testable Hypotheses

4.2.1 The Valuation and Return Effects of Sin Stocks at Firm Level

Hong and Kacperczyk (2009) provide evidence on the effects of sin stocks on the stock market and show that they generally outperform the market on expected returns. The effects of undervaluation and equity return effects of sin stocks are due to sin stocks are generally neglected by institutional investors and receive less analyst coverage. These investors prefer to adhere to social norms.

However, the evidence on how these neglect-effects are judged by socially-constrained investors is limited. This chapter specifically investigates the neglected effects of investors to sin, by asking whether investors are merely frightened by the companies operating in the sin industries or can they distinguish those companies involved in sin business behaviours despite not being located in those industries. The classification of sin stocks at the industry-level may not comprehensively reflect the issues for controversial business areas, because sin companies are willing to strategically diversify their business into non-controversial business areas to decrease negative exposure (Beneish et al., 2008). In an efficient market, investors and firms' analysts can efficiently investigate the public information on stock to make wise corporate investment decisions. In other words, they have the ability to investigate the upstream and downstream business activities relevant to sin companies. If the results support the arguments, then this would show that identification of these firm-level sin stocks can translate to similar valuation and equity return effects to those found by Hong and Kacperczyk (2009); therefore, this leads to hypotheses H1 and H2:

H1: sin stocks that diversified in non-sin industries also have lower valuation effects.

H2: sin stocks that diversified in non-sin industries have higher equity returns.

4.2.2 The M&A Announcement Returns of Sin Acquirers

Mergers and acquisitions are important forms of corporate investment that provide an ideal framework to examine the shareholders' wealth effects on sin business activity involvement (Deng et al., 2013). Given the mixed evidence from prior studies on the effects of sin on a firm's operations, there are two competing hypotheses on the performance of sin acquirers in M&As.

The deviation between controversial business behaviours and the prevailing social norms creates an adverse image to the general public. Moreover, there is a regulatory scrutiny and potential litigation risk faced by sin companies from third parties. The press has the tendency to influence public perception of sin industries when they are facing legislative interventions (Yu, Sengul, & Lester, 2008). Therefore, sin businesses are interpreted by media coverage and the public as bad. In this case, there is always a "negative headline risk" with sin industries (Fabozzi et al., 2008). As such, considering the sin acquirers' negative reputation among the public, we expect that investors underestimate and are unwilling to support M&A deals made by acquiring firms involved in sin business issues. This argument leads to the third hypothesis:

H3: sin acquirers exhibit lower cumulative abnormal returns in M&A transactions compared with other comparable acquirers.

However, sin acquirers would receive several favourable contexts from different perspectives. They have a better return performance compared with the market benchmark (Hong & Kacperczyk, 2009) and they provide higher dividends for shareholders (Berman, 2002). In addition, their business is quite stable over time due to their addictive attributes (Chong et al., 2006; Salaber, 2009). In addition, sin companies are cash-rich business (Beneish et al., 2008), receive a better quality of financial and accounting reporting (Berman, 2002; Kim & Venkatachalam, 2011), and recession-proof (Salaber, 2009).

Besides, sin companies are subject to higher regulatory and public scrutiny and potential litigation due to their controversial business activities (Hong & Kacperczyk, 2009; Leventis et al., 2013; Fauver & McDonald, 2014; Kim & Venkatachalam, 2011). If social norms work an effective monitoring channel in controlling managers' opportunistic behaviour when making M&A investment decisions, then managers of sin acquirers would invest greater effort and be forced to produce a higher quality of M&A deals to avoid negative media coverage, stricter regulatory scrutiny, and potential litigation. Consequently, it is possible that the M&A investment decisions made by managers from sin acquirers are more likely to outperform other acquirers.

Additionally, the pressure of monitoring and litigation risk causes the tendency for sin companies to deliver better-quality financial reporting and accounting to demonstrate high levels of earning quality to attract more "sophisticated" market participants (Kim & Venkatachalam, 2011). Previous literature also shows evidence that better-quality financial reporting can enhance the ability of shareholders to monitor managerial investment behaviours, and can therefore enhance investment efficiency (Francis & Martin, 2010; Chang et al., 2009). The increased financial reporting by sin acquirers will reduce information asymmetry and adverse selection problems. Therefore, it improves shareholders' ability to monitor managers' investment decisions, which potentially increases the investment efficiency of M&As. Given this perspective, it is possible that managerial pressure from the strict regulatory scrutiny and litigation risk may consequently result in higher cumulative abnormal returns of sin acquirers. This above argument leads to the fourth hypothesis:

H4: sin acquirers experience higher M&A returns than other comparable acquirers.

We explore the different hypotheses in the following sections of this empirical test.

4.3 Identification of Sin

The priority of this chapter is to determine the identification of sin. Generally, sin companies are those business activities that are considered to be unethical or immoral by the general public. However, prior studies show that there is no universal definition of sin companies (Durand et al., 2013) and highlight the difficulties in defining sin (Fabozzi et al.,

2008). Hong and Kacperczyk (2009) define sin stocks as those located in the gambling, alcohol, and tobacco industries. These three industries are regarded as sin because of their addictive attributes that may result in undesirable social outcomes if over-consumed by members of society. Despite Fauver and McDonald (2014) emphasising that attitudes to sin vary in different cultures, their classification of sin stocks was still based on whether an industry's goods and services are against social, moral and religious values. However, this industry-level definition of sin may not comprehensively reflect the issues for controversial business areas, because sin companies are willing to strategically diversify into non-controversial business areas to decrease detrimental exposure to the media and the public (Beneish et al., 2008). This further illustrates that the definition of sin should not be merely based on the industries.

In order to adequately reflect the sin business issues, we therefore depend on KLD STATS, which is generally used in the corporate social responsibility literature (Ghoul et al., 2011) to define sin companies (Leventis et al., 2013; Statman & Glushkov, 2009). KLD's controversial business issues ratings identify sin companies according to the licensing, manufacturing, supporting, ownership and retailing of nuclear power, military, gambling, firearms, alcohol and tobacco activities. Table 4.1 shows a detailed description of KLD controversial business issues for each dimension. In contrast to sin identification based simply on the industry, this firm-level sin classification procedure can comprehensively capture a firms' sin activity characteristics even if it has diversified in different areas. For example, although companies that operate business in the tobacco industry are generally considered to be sin companies, so too would companies that are related to the licensing, manufacturing, and retailing of tobacco products. The sample of this chapter will include all these types of companies.

Table 4. 1
KLD Controversial Business Issues

This table describes the KLD ratings of controversial business issues in different dimensions. In each dimension, there is a number of concern rating indicators on specific controversial business. The source of this rating is from RiskMetrics Group, Inc. (2010) '*How to use KLD STATS and ESG ratings definitions'*.

Dimensions		Rating indicator details	Dimensions		Rating indicator details
Alcohol	(1)	Licensing	**Firearms**	(1)	Manufacturers
	(2)	Manufacturers		(2)	Retailers
	(3)	Manufacturers of products for alcoholic beverages		(3)	Ownership by a firearms company
	(4)	Retailers		(4)	Ownership of a firearms company
	(5)	Ownership by an alcohol company			
	(6)	Ownership of an alcohol company			
	(7)	Alcohol other concern			
Gambling	(1)	Licensing	**Military**	(1)	Manufacturers of weapons or weapons systems
	(2)	Manufacturers		(2)	Manufacturers components of weapons or systems
	(3)	Owners and operators		(3)	Ownership by a military company
	(4)	Supporting products or services		(4)	Ownership of a military company
	(5)	Ownership by a gambling company		(5)	Minor weapons contracting involvement
	(6)	Ownership of a gambling company		(6)	Major weapons-related supplier
	(7)	Gambling other concern		(7)	Military other concern
Tobacco	(1)	Licensing	**Nuclear Power**	(1)	Construction & design of nuclear power plants
	(2)	Manufacturers		(2)	Nuclear power fuel and key parts
	(3)	Manufacturers of products for tobacco products		(3)	Nuclear power service provider
	(4)	Retailers		(4)	Ownership by nuclear power company
	(5)	Ownership by an alcohol company		(5)	Ownership of nuclear power company
	(6)	Ownership of an alcohol company		(6)	Design
	(7)	Tobacco other concern		(7)	Fuel cycle/ key parts
				(8)	Nuclear other concerns

Those dimensions of the KLD controversial issues have been identified as sin due to their devastating social impacts (Cai, Jo, & Pan, 2012; Lindorff, Jonson, & McGuire, 2012). Smoking tobacco has adverse consequences on individual and public health that have been widely known since 1960. A report by the Surgeon General's Advisory Committee on Smoking and Health shows the causality relationship between tobacco smoking and lung cancer. Subsequently, further legislative regulations were imposed on cigarette packaging and tobacco advertising in order to discourage tobacco consumption. Gambling and alcohol are regarded as sin activities and face strict legislative regulation because of the concerns about associated crime that will corrupt society. Military industries are considered to be sin because of the killing that they involve, despite the purpose of military forces being for self-defence and public safety. The nuclear and firearms industries facilitate environmental pollution during testing of biological and chemical weapons, and due to radiation from nuclear waste and reactor failures (Beelitz & Merkl-Davies, 2011).

Table 4.2 reports the sample distribution of sin stocks by the KLD controversial issues. We employ the Fama-French 48 Industry classification to clearly demonstrate sin industries. We find that sin stocks are well diversified in a wide range of industries[18]. Our sample covers those generally acknowledged sin stocks who operate in group 4 (Beer & Liquor), group 5 (Tobacco Products) and the gaming industry identified by NAICS classification. Our sample also contains the "hidden sin" stocks who have controversial business activities but are not located in the sin industries. As we discussed, stocks whose business relates to the licensing, supporting, manufacturing, ownership, and retailing of nuclear power, gambling, tobacco, military, alcohol, and firearms could better reflect the impact of sin.

[18] The sample is also located in a wide range of industries when the SIC industry classification is used.

Table 4. 2

Sin Stocks' Industry Distribution

This table reports the sample distribution by sin stocks' industry. The industries are based on and sourced from the Fama-French (1997) 48 Industrial Classifications while the gaming stocks are identified by NAICS classification. The identification of sin stocks are depend on KLD STATS controversial business issues. The data over the period 1995-2013.

F&F/ NAICS	Industry	Numbers	F&F/ NAICS	Industry	Numbers
1	Agriculture	0	25	Shipbuilding, railroad equipment	48
2	Food products	247	26	Defence	379
3	Candy & soda	36	27	Precious metals	0
4	Beer & liquor	12	28	Non-metallic and industrial metal mining	0
5	Tobacco products	315	29	Coal	0
6	Recreation	36	30	Petroleum and natural gas	84
7	Entertainment	828	31	Utilities	0
8	Printing and publishing	24	32	Communication	132
9	Consumer goods	101	33	Personal services	0
10	Apparel	0	34	Business services	431
11	Healthcare	0	35	Computers	327
12	Medical equipment	72	36	Electronic equipment	1,406
13	Pharmaceutical products	0	37	Measuring and control equipment	564
14	Chemicals	432	38	Business supplies	48
15	Rubber and plastic products	48	39	Shipping containers	96
16	Textiles	0	40	Transportation	0
17	Construction materials	441	41	Wholesale	110
18	Construction	0	42	Retail	60
19	Steel works Etc.	156	43	Restaurants, hotels, motels	372
20	Fabricated products	24	44	Banking	0
21	Machinery	672	45	Insurance	0
22	Electrical equipment	227	46	Real estate	48
23	Automobiles and trucks	178	47	Trading	0
24	Aircraft	903	48	Almost nothing	0
			49	Gaming	91

4.4 Data Construction and Summary Statistics

In order to study the effects of controversial social norms on mergers and acquisitions performance, we construct a data sample from several different databases. The Thomson Securities Data Company (SDC) database offers the merger and acquisition deals information. The Kinder, Lydenberg and Domini (KLD) database offers the controversial business issues rating of various dimensions. The Research in Security Prices (CRSP) daily return files provide the stock return information. The Compustat North America provides various accounting variables in the same time period. The data extraction period is January 1, 1995 to December 31, 2013.

4.4.1 Sample of Valuation Regressions

Hong and Kacperczyk (2009) study sin stock valuation based on the sin industries. We first extend their study by studying the valuation effects of sin companies at the firm level, given their diversified controversial business issues. We start with a broad sample and obtain the data for all companies that are available in the Compustat/CRSP during the study period. This data is merged with the controversial business issues ratings for various dimensions from the KLD database. We then exclude observations with missing values on key characteristics for the firm's valuation effects, such as return on equity, the ratio of capital expenditure to sales, the ratio of free cash flow to assets, S&P 500 index, R&D expenditure to firm sales, Tobins' Q, market-to-book ratio, the ratio of price to earnings, dividends per share, and the ratio of price to EBITDA (earnings before interest, tax, depreciation, and amortisation). After deleting the unavailable firm-year observations, the above mentioned criteria result in a sample of 70,523 firm-year observations from 1,221 firms; these are diversified into 53 different industries depended on the two-digit SIC code. There are 2,729 firm-year observations having at least one controversial business issue in alcohol, tobacco or gambling, and 9,279 firm-year observations having at least one controversial business issue in all six dimensions (nuclear power, gambling, firearms, alcohol, military, and tobacco).

4.4.2 Sample of Cross-sectional Return Regressions

As with the examination of valuation effects, we also build up the sample to test the

cross-sectional return effects of sin companies at the firm level. The sample for cross-sectional return analysis is made up of all available firms that are covered in the Compustat/CRSP during the study period. This sample then matched the data with the KLD controversial business issues. We clean the sample by excluding missing observations of key variables for firms' cross-sectional return effects, which include monthly stock return, risk free rate, firm market capitalisation, market-to-book ratio, daily share turnover, beta of the stock, leverage, free cash flow and firm age. These criteria result in a sample of 114,260 firm-year observations from 1,195 firms, spread over 64 industries depended on the two-digit SIC code. There are 4,307 firm-year observations having at least one controversial business issue in alcohol, tobacco and gambling, and 16,944 firm-year observations having at least one controversial business issue in all six dimensions.

4.4.3 Sample of M&A Regressions

To examine the M&As performance of sin acquirers, we start with all announced M&A transactions in the Thomson Securities Data Company (SDC) database over the study period. We then impose the following M&A sample selection criteria: (1) completed mergers and acquisition deals are included; (2) only M&A deals valued greater than $1 million are included, to exclude the effects from small deals; (3) the acquirer fully owns the target firms' shares after the deal transactions; (4) acquirers are public firms in the US stock market with stock returns data available from CRSP database to compute abnormal returns; (5) firm's financial data is available from Compustat; (6) the acquirer is covered by the KLD database and has corporate controversial business issues ratings for various dimensions available prior to the M&As; (7) acquirers in the financial (SIC 6000-6999) and utilities (SIC 4900-4999) industries are excluded. These selection criteria lead to 4,741 deals. Similar to the methods of Leventis et al. (2013) and Hong and Kacperczyk (2009), we then constrain the sample of control firms (non-sin) to those with available data from the same industries as the sin firms with any ratings in the six KLD controversial business issues. These selection criteria lead to a sample of 4,059 successful deals made by 1,239 acquiring firms (149 sin and 1090 non-sin control) from various industries.

Table 4. 3
Sin Acquirer's Business Activity and Year Distribution

This table reports the sample distribution of sin acquirers by years in different KLD controversial business issues in a sample over the period from 1995 to 2013. The six KLD controversial business issues, which include firearms, gambling, military, tobacco, nuclear power, and alcohol.

Years	Alcohol	Gambling	Tobacco	Military	Nuclear power	Firearms	Total
1995	0	0	0	9	3	0	12
1996	1	2	0	25	5	0	33
1997	1	0	0	25	4	0	30
1998	0	0	0	15	7	0	22
1999	0	0	2	45	10	0	57
2000	0	2	1	41	13	0	56
2001	3	1	1	16	6	3	30
2002	1	2	0	14	7	1	25
2003	1	2	1	33	4	2	43
2004	1	8	1	28	3	0	41
2005	1	4	3	27	3	1	39
2006	1	4	3	26	9	0	43
2007	5	4	2	29	9	1	50
2008	0	3	1	17	4	0	25
2009	0	2	0	25	4	0	31
2010	1	2	2	24	6	0	35
2011	3	5	5	35	6	1	55
2012	4	12	2	28	5	2	53
2013	2	8	3	20	3	0	36
Total	25	61	27	482	111	11	717

Table 4.3 shows the sample distribution of sin acquirers and their controversial business activity dimensions over the study period. There are a total of 717 sin acquirers with different controversial business issues (some acquirers may be involved in more than one controversial dimension). The highest number is for those acquirers involved in military businesses (482), while the lowest number is for acquirers with firearms business activities. The rest of the sample comprises 25 acquirers involved in alcohol businesses, 61 with gambling businesses, 27 with tobacco businesses and 111 with nuclear power activities. In general, the sin acquirers remained relatively stable over the period. The number of acquirers involved in gambling

businesses increased significantly in later years, and this is consistent with the trend of widespread social acceptance of gambling[19].

4.5 Key Variables Construction

4.5.1 Measuring the Controversial Business Ratings

The measure of corporate controversial business issues rating used in this chapter is depended on the work of Kinder, Lydenberg, and Domini (KLD) Research and Analytics Inc. The independent studies from KLD provides consulting and research services to customers for different purposes, including socially responsible investment decision making and academic research. KLD ranks companies' involvement in various activities using a variety of resources, including government publications, media, annual financial reports, and journals. The KLD database has covered S&P 500 companies since 1991, and extended to more than 3,000 companies from the Russell 3000 index from 2003.

KLD STATS scores firms based on six dimensions of controversial business issues. The CSR dimensions of the controversial issue areas are nuclear power, gambling, tobacco, military, alcohol, and firearms. Each dimension contains a number of rating indicators that show a company's relationship to the licensing, supporting, manufacturing, ownership and retailing of controversial businesses. A mark of 1 is given for an area if a rating is assigned as a concern (negative), and a mark of 0 is given if there is no concern on a particular issue. For example, in the alcohol dimension, the KLD database apportions one point for the "retailer" indicator if a firm received 15% or more of their total revenues from an alcoholic drinks account, and zero otherwise. In the nuclear power dimension, the KLD database apportions one point for "nuclear power service provider" if a company has business related to transporting nuclear materials or plant maintenance, and zero otherwise.

In order to accurately study the effects of corporate controversial behaviours on firm's performance, this chapter employs two groups of sin measurements. The first group is the sum

[19] According to the National Gambling Commission report, 26 states of United States had become involved in Nevada and Atlantic City (New Jersey) to legalise casino-style gambling by 1999. See Chen and Bin (2001) for more details.

of the total rating of corporate controversial business issues in all dimensions. These include the variable *SIN_AGT_SUM*, which is the total score of measures in three controversial business issues areas: gambling, tobacco and alcohol (Hong & Kacperczyk, 2009); and the variable *SIN_ALL_SUM*, which is the total score for six CSR controversial business issues areas: nuclear power, gambling, firearms, tobacco, military, and alcohol. These CSR summing variables measure the intensity of an acquirer's sin ratings. A higher rating indicates a higher involvement in sin activities. The second group of measurements is the indicator variables that are equal to 1 when there are any controversial business issues in any dimensions, and equal to 0 otherwise. The variable *SIN_AGT_Dummy* gains a value of 1 if the acquirer has any CSR controversial business issues in the areas of alcohol, gambling and tobacco; and the variable *SIN_ALL_Dummy* equals 1 if the acquirer has any CSR controversial business issues in the areas of nuclear power, gambling, tobacco, military, alcohol and firearms, and equals 0 otherwise. These dummy variable indicators capture a firm's performance on any sin activities.

The descriptive statistics of sin variables is reported in the Table 4.4. *SIN_ALL_Dummy* is 0.1599, which means that 15.99% of our sample involves acquirers with at least one dimension of controversial business issues. *SIN_ALL_SUM* is 0.1801, which indicates that the average acquirers' sin rating is 0.1801. The average sin rating for sin acquirers is 1.1263, which means there is approximately 1.13 involvements in controversial business dimensions for sin acquirers. In contrast, there are no sin activities for the control group.

Table 4. 4
Summary Statistics for Chapter 4

This table reports the statistics of the sample variables over the period 1995-2013. The sample is split into sin acquirers and control group. Panel A reports the statistics of the KLD controversial business related variables. Panel B shows the statistics of the valuation effects related variables. Panel C shows the variables statistics relevant to expected return regressions. Panel D shows the statistics of variables used in M&A return related regressions. Detailed variable definitions are in Appendix C.1.

	Full sample		Sin Acquirers		Control firms	
Variable	Mean	Median	Mean	Median	Mean	Median
Panel A: Controversial issues						
SIN_ALL_SUM	0.1801	0.0000	1.1263	1.0000	0.0000	0.0000
SIN_ALL_Dummy	0.1599	0.0000	1.0000	1.0000	0.0000	0.0000
Panel B: Valuation regressions						
ROE	2.8895	2.7999	3.1067	2.8551	2.8492	2.7591
Dividends/Share	0.3658	0.0000	0.5650	0.2400	0.3323	0.0000
FCF/Assets	0.0189	0.0146	0.0348	0.0094	0.0163	0.0163
CES	0.1134	0.0397	0.0608	0.0366	0.1223	0.0405
S&P500	0.4799	0.0000	0.6373	1.0000	0.4535	0.0000
RD_SALES	0.1654	0.0640	0.0539	0.0373	0.1873	0.0791
LOGMB	1.0386	0.9768	0.9838	0.8805	1.0479	0.9923
LOGPE	-1.8337	-1.7728	-2.0674	-1.8841	-1.7906	-1.7558
LOGPEBITDA	-2.4061	-2.2759	-2.7990	-2.6515	-2.3373	-2.1901
Panel C: Expected returns regressions						
Expected returns	0.0206	0.0180	0.0240	0.0172	0.0201	0.0182
LOGSize	8.0431	7.8015	8.5403	8.2845	7.9614	7.7197
MB	1.0386	0.9768	0.9838	0.8805	1.0479	0.9923
LOGleverage	-2.4501	-2.0352	-2.2257	-1.9280	-2.4922	-2.0567
Freecashflow	0.0455	0.0536	0.0541	0.0555	0.0441	0.0526
Turnover	7330	1600	13518	3634	6288	1354
Beta	1.1317	1.0652	1.0795	1.0331	1.1435	1.0722
Firmage	2.7516	2.8332	3.1891	3.5264	2.6696	2.6391
Panel D: Cumulative abnormal returns regressions						
CAR(-1,1)	0.0049	0.0022	0.0030	0.0009	0.0053	0.0026
CAR(-2,2)	0.0049	0.0022	0.0043	0.0017	0.0049	0.0024
CAR(-5,5)	0.0042	0.0022	0.0048	0.0033	0.0041	0.0020
Firmsize	7.9898	7.8657	8.6194	8.4519	7.8700	7.7380
Diversifying	0.4176	0.0000	0.5794	1.0000	0.3868	0.0000
Targetprivate	0.4326	0.0000	0.3621	0.0000	0.4460	0.0000
Relsize	0.1159	0.0353	0.1155	0.0302	0.1160	0.0360
Stockdeal	0.1853	0.0000	0.1541	0.0000	0.1912	0.0000
Hostile	0.0027	0.0000	0.0062	0.0000	0.0021	0.0000
Tender	0.0544	0.0000	0.0971	0.0000	0.0463	0.0000
Poison	0.0017	0.0000	0.0031	0.0000	0.0015	0.0000
Competing	0.0084	0.0000	0.0108	0.0000	0.0079	0.0000

4.5.2 Abnormal Stock Performance

To study the effects of socially responsible activities on acquiring firms' merger announcement returns, this chapter uses the standard event research method, which isolates the impact of specific events. The estimation of an acquirer's abnormal stock performance is based on the market model as follows:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (6)$$

where R_{it} is the stock return for period *t*; R_{mt} is the US stock market return on day *t*, which is proxied by the value-weighted return in CRSP; α_j and β_j are the parameters of ordinary least squares (OLS) regression; and ε_{it} is the regressions residual. The estimated window is two hundred trading days, which ends eleven days before merger announcements. We estimate that an acquirer's abnormal return (AR) is the stock return value observed minus the stock return measured using the market model:

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt}) \quad (7)$$

We then calculate the cumulative abnormal return (CAR) for the three-day merger event window *CAR(-1,1)* (one day before and one day after the date of merger announcements), and take this as the key dependent variable. We also estimate the five-day event window *CAR(-2,2)* and eleven-day event window *CAR(-5,5)* (five and eleven days, respectively, before and after the date of merger announcements).

Table 4.4 provides a summary of acquirers' CARs for several possible event windows. For all event windows, both the mean and median value of acquirer's CARs are positive, which are consistent with previous studies. For example, the average *CAR(-2,2)* is 0.49%; this is consistent with the findings of Masulis et al. (2007), who recorded a *CAR(-2,2)* of 0.215% for US deals between 1990 and 2003.

4.6 Empirical Results

4.6.1 Firm-level Sin Valuation Effects

Previous studies provide industry-level evidence that sin stocks generally experience

lower valuation effects than comparable stocks. Merton (1987) provides the foundation for understanding why stocks from sin industries are undervalued and therefore outperform other stocks. The fundamental value of sin stocks are depressed because of neglect from investors who are subjected to social norm pressures and thus earn higher expected stock returns. The valuation ratios of sin stocks are lower on average than comparable companies (Hong and Kacperczyk, 2009). Fauver and McDonald (2014) show that the impact of social norms influence valuations differently across different markets, based on their attitude towards sin.

However, this valuation evidence is still constrained at the industry-level for the firms located in controversial industries (gambling, tobacco, and alcohol). As discussed previously, sin companies are likely to strategically diversify their business into non-sin industries to reduce their negative public exposure. Therefore, there is still an unanswered question on the criteria for socially constrained investors to consider with regard to sin stocks. Are they simply frightened and neglect stocks because they are sin industries, or are they able to pick up the "hidden sin" stocks at the firm level even after a firm has diversified its controversial business activities? This section will examine the valuation effects of sin at the firm level, beyond the industries boundary.

In order to address this question, the following valuation regression model is estimated following Hong and Kacperczyk (2009) and Fauver and McDonald (2014):

$$VALUATION_{i,t} = \alpha_0 + \alpha_{i,t} + \beta_1 SIN\_ACQ^{i,j} + \beta_2 Controls_t^i + \varepsilon_t^{i,j} \qquad (8)$$

where $VALUATION_{i,t}$ is the sin stocks' valuation proxies, including *LOGMB* as the logarithm of the ratio of the market value of equity to the book value of equity, *LOGPE* as the logarithm of the firm's price to earnings ratio, and *LOGPEBIDTA* as the logarithm of the ratio of the firm's price to EBITDA; $\alpha_{i,t}$ is the vector of year and industry fixed effects, to control macroeconomic differences, and the standard errors are adjusted at the acquiring level; $SIN\_ACQ^{i,j}$ presents different measurements of an acquirer's sin rating (see section 5.1 for definition); and $Controls_t^i$ is a group of firm-level characteristics which are defined next. $Controls_t^i$ is comprised of the following: *LOGROE* is the logarithm of the ratio of the earnings to the book value of equity; *Dividends/Share* is the USD value of dividends per share of firm;

FCF/Assets is the ratio of the USD value of free cash flow to total assets, for each firm; *CES* is the ratio of capital expenditures to sales; *S&P500* is a dummy variable value equals to one if the acquirer is a member of the S&P 500 index, and zero otherwise; *RD_SALES* is the ratio of the firm's R&D expenditures to firm sales in the year; and *Tobin'Q* is the ratio of the market value of assets to the book value of assets.

We first estimate regression models following Hong and Kacperczyk (2009), by assessing sin stock valuation effects based on the alcohol, tobacco, and gambling business issues, the results for which are in Panel A of Table 4.5. The cross-sectional regression is estimated in Model 1 with the dependent variable of *LOGMB*. The coefficient of *SIN_AGT_SUM* is significantly negative at 1% level (-0.3261), indicating that sin stocks' the market-to-book ratio are smaller than comparable stocks by 32.61%. The coefficients of *LOGROE* and *RD_SALES* are significantly positive, which are consistent with the results in Hong and Kacperczyk (2009). We then alter the primary explanatory variable as *SIN_AGT_Dummy* in Model 2. The coefficient of *SIN_AGT_Dummy* is significant and negative (-0.2975). The other coefficients remain qualitatively similar. The remaining models in Table 4.5 take alternative measurements of the valuation. The coefficients in front of *LOGPE* and *LOGPEBITDA* are similar to the market-to-book ratio for both scales and level of significance, which means our results are robust even when using alternative valuation measurements.

In summary, all the alternative models that we used to examine the price impact of alcohol, tobacco, and gambling business activities yield economically interesting effects at the firm-level. Our findings are consistent with Hong and Kacperczyk (2009) that sin stocks are undervalued relative to their comparable stocks. Our firm-level evidence reinforces the finding that the valuation effects for sin companies are not limited to the sin industries, and that investors can tell "hidden sin" even when companies diversify into non-sin industries. Investors are not simply frightened by sin industries but they could able to identify sin characteristics based on their controversial business activities. These results show that the valuation ratio for companies with sin business issues is on average lower than that for comparable companies, while controlling for other stock value determinates.

Table 4. 5
Firm-level Evidence of Sin Stocks Valuation Effects

The table reports the valuation effects of sin stocks at the firm-level for a sample from 1995 to 2013. The dependent variables are three alternative proxies for valuation measurements. In Panel A, we employ the sin rating measurements based on the three KLD controversial business issues (tobacco, gambling, and alcohol). In Panel B, we employ the sin rating measurements based on the six KLD controversial business issues, including nuclear power, firearms, gambling, tobacco, military, and alcohol. In different specifications, a series of the firm- and market-level characteristics is controlled. All models also include the year and industry fixed effects. Detailed variable definitions are in the Appendix C.1. ***, ** and * indicate significance levels at the 1%, 5%, and 10% respectively.

Panel A: alcohol+ gambling+ tobacco						
	LOGMB		LOGPE		LOGPEBITDA	
	(1)	(2)	(3)	(4)	(5)	(6)
SIN_AGT_SUM	-0.3261***		-0.3254**		-0.2998**	
	(-2.591)		(-2.575)		(-2.394)	
SIN_AGT_Dummy		-0.2975**		-0.2941**		-0.2903**
		(-2.157)		(-2.130)		(-2.118)
LOGROE	0.2117***	0.2112***	-0.7857***	-0.7862***	-0.5710***	-0.5715***
	(15.048)	(15.042)	(-55.329)	(-55.477)	(-29.345)	(-29.404)
RD_SALES	0.8677***	0.8680***	0.8275***	0.8278***	1.2404***	1.2407***
	(4.258)	(4.258)	(4.065)	(4.065)	(4.394)	(4.396)
SP500	-0.1090***	-0.1081**	-0.1162***	-0.1153***	-0.5346***	-0.5334***
	(-2.594)	(-2.574)	(-2.720)	(-2.701)	(-9.463)	(-9.425)
Dividends/Share	0.0125***	0.0125***	0.0120***	0.0121***	0.0147***	0.0147***
	(3.645)	(3.622)	(3.512)	(3.490)	(4.143)	(4.129)
FCF_Assets	0.2289***	0.2291***	0.2275***	0.2277***	0.3199***	0.3201***
	(4.924)	(4.926)	(4.729)	(4.730)	(5.477)	(5.477)
CES	0.3023***	0.3038***	0.2672***	0.2686***	-0.0381	-0.0362
	(3.155)	(3.134)	(3.075)	(3.055)	(-0.303)	(-0.287)
Constant	0.5711***	0.5705***	0.5554***	0.5548***	-0.2903***	-0.2910***
	(7.342)	(7.331)	(7.401)	(7.388)	(-3.167)	(-3.174)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	70523	70523	70523	70523	70523	70523
Adj. R^2	0.370	0.369	0.877	0.877	0.779	0.779

(*Continued*)

Table 4.5 – *Continued*

Panel B: alcohol+ gambling+ tobacco+ firearms+ military+ nuclear power						
	LOGMB		LOGPE		LOGPEBITDA	
	(1)	(2)	(3)	(4)	(5)	(6)
SIN_ALL_SUM	-0.1515***		-0.1496***		-0.1818***	
	(-3.504)		(-3.428)		(-3.473)	
SIN_ALL_Dummy		-0.1552***		-0.1505***		-0.1680***
		(-3.092)		(-2.954)		(-2.768)
ROE	0.2124***	0.2115***	-0.7851***	-0.7859***	-0.5700***	-0.5711***
	(15.034)	(15.039)	(-55.039)	(-55.337)	(-29.117)	(-29.319)
RD_SALES	0.8145***	0.8170***	0.7750***	0.7783***	1.1765***	1.1855***
	(4.025)	(4.037)	(3.832)	(3.848)	(4.155)	(4.189)
SP500	-0.1080***	-0.1060***	-0.1153***	-0.1134***	-0.5317***	-0.5303***
	(-2.636)	(-2.588)	(-2.766)	(-2.722)	(-9.610)	(-9.566)
Dividends/Share	0.0127***	0.0127***	0.0122***	0.0123***	0.0149***	0.0149***
	(3.588)	(3.580)	(3.461)	(3.454)	(4.150)	(4.142)
FCF/Assets	0.2261***	0.2265***	0.2247***	0.2252***	0.3162***	0.3171***
	(4.916)	(4.918)	(4.719)	(4.721)	(5.482)	(5.481)
CES	0.2935***	0.2968***	0.2584***	0.2616***	-0.0467	-0.0429
	(3.135)	(3.137)	(3.001)	(3.018)	(-0.380)	(-0.345)
Constant	0.5999***	0.5963***	0.5839***	0.5799***	-0.2563***	-0.2634***
	(7.800)	(7.778)	(7.864)	(7.840)	(-2.836)	(-2.927)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	70523	70523	70523	70523	70523	70523
Adj. R^2	0.370	0.369	0.877	0.877	0.780	0.779

Next, we re-specify the sin companies for those relevant to the dimensions of the KLD controversial business issues. As we discussed earlier, in addition to alcohol, tobacco and gambling, firms involved in the military, nuclear power and firearms business activities have also been considered as sin companies from different perspectives. Therefore, to comprehensively reflect the sin valuation effects, we re-estimate the models in Panel A of Table 4.5 by replacing *SIN_ALL_SUM* and *SIN_ALL_Dummy* as explanatory variables. Our findings from the regressions of the new measures of sin companies are reported in Panel B of Table 4.5. We find that the coefficients in front of *SIN_ALL_SUM* and *SIN_ALL_Dummy* are

significantly negative at 1% level, which are consistent with our previous findings. The results are robust using different alternative valuation measurements. This evidence supports our argument that the neglected-effect for socially-constrained investors is not limited to sin industries, and that they are able to treat sin stocks based on the firm-level diversified controversial business activities.

4.6.2 Firm-level Cross-sectional Returns

According to our findings that sin stocks experience lower valuation effects than comparable stocks, it is logical to suggest that they can also have higher expected returns. Prior studies have provided evidence on sin stocks' expected returns effects of at different levels. Hong and Kacperczyk (2009) show industry-level evidence by analysing time series and cross-sectional variation. Fabozzi et al. (2008) show similar results on excess returns for sin stocks at the portfolio level. Although they consider the product and service providers of sin companies, their study only examines a small sample of 70 sin firms, using univariate tests. In contrast, this study provides a more comprehensive test and evidence, which is depended on a comprehensive sample of 114,260 firm-year observations from 1,195 firms. We also take a wide cross-sectional variation to investigate sin stocks' performance at the firm-level, by controlling for various factors that affect stock returns. To test the sin stock return effects, we estimate the following specification to evaluate return forecasting:

$$EXMRET_{i,t} = \alpha_0 + \alpha_{i,t} + \beta_1 SIN\_ACQ^{i,j} + \beta_2 Controls_t^i + \varepsilon_t^{i,j} \quad (9)$$

where $EXMRET_{i,t}$ is the return of firm's stock net the risk-free rate; $\alpha_{i,t}$ is the vector of year and industry fixed effects to isolate macroeconomic differences, with the standard errors adjusted at the acquiring level; $SIN\_ACQ^{i,j}$ presents different measurements of an acquirer's sin rating (see Section 5.1 for definition); and $Controls_t^i$ is a series of firm-level control variables which discussed as follows. $Controls_t^i$ comprises to the following: *LOGSIZE* is the logarithm of the acquirer's market capitalization; *MB* is the ratio of the market value of equity to the book value of equity; *LOGleverage* is the logarithm of the ratio of the book value of debt to the market value of the asset; *Freecashflow* is the operating income before depreciation minus the sum of interest expenses, income taxes and capital expenditures, scaled by the book

value of total assets; *Turnover* is the average of daily share turnover in stock during month t; *Beta* is the decile for stocks in the following twelve months; and *Firmage* is the logarithm of the firm's operating years which is estimated by the year numbers that have data available in the CRSP/Compustat database.

The results of the firm-level performance of sin stock return are reported in Table 4.6. As with the valuation effects tests, we first examine sin stocks' performance depended on the three sin industries identified by Hong and Kacperczyk (2009) in Panel A. In Model 1, it is reported that the coefficient of *SIN_AGT_SUM* is significantly positive. As Model 2 controls for additional variables relevant to stock returns, the coefficient remains unchanged in both scale and significance. We re-estimate the same models with a changing alternative explanatory variable to *SIN_AGT_Dummy* in Model 3 and Model 4. We find that the coefficient for *SIN_AGT_Dummy* is 0.0035, which is significant (5% level), and other coefficients remain qualitatively similar.

Next, in order to better reflect how social values affect economic values, we re-estimate the cross-sectional regression, considering all six controversial business dimensions. Panel B of Table 4.6 reports the results by taking both *SIN_AGT_SUM* and *SIN_AGT_Dummy* as explanatory variables; the coefficients for the explanatory variables are approximately 0.0015 and statistically significant. These results suggest that returns for sin stocks are about 15 basis points higher than those for other comparable stocks. The coefficients of *LOGSIZE, Turnover*, *LOGage* and *Beta* are statistically and economically consistent with the results shown in Hong and Kacperczyk (2009). Overall, our cross-sectional regression results reinforce the firm-level sin stock return effect. Sin stocks generally outperform their comparable stocks and have higher expected returns, which is consistent with previous research.

Table 4. 6
Firm-level Evidence of Sin Stocks Expected Returns

The table reports the expected return tests of sin stocks at the firm-level for a sample from 1995 to 2013. The dependent variable is the expected returns of sin stocks. In Panel A, we employ the sin rating measurements based on the three KLD controversial business issues, namely tobacco, gambling and alcohol. In Panel B, we employ the sin rating measurements based on the six KLD controversial business issues, including nuclear power, tobacco, military, gambling, firearms, and alcohol. In different specifications, a series of firm- and market-level characteristics is controlled. All models also include year and industry fixed effects. Detailed variable definitions are in the Appendix C.1. ***, ** and * indicate significance levels at the 1%, 5% and 10% respectively.

Panel A: alcohol+ gambling+ tobacco				
	(1)	(2)	(3)	(4)
SIN_AGT_SUM	0.0029*	0.0028*		
	(1.800)	(1.759)		
SIN_AGT_Dummy			0.0034**	0.0035**
			(2.035)	(2.106)
LOGSIZE	-0.0013***	-0.0007***	-0.0013***	-0.0007***
	(-5.343)	(-2.676)	(-5.347)	(-2.695)
LOGLeverage	-0.0010***	-0.0008***	-0.0010***	-0.0008***
	(-3.386)	(-2.967)	(-3.384)	(-2.970)
LOGMB	0.0118***	0.0110***	0.0118***	0.0110***
	(13.957)	(13.050)	(13.972)	(13.068)
Freecashflow		0.0335***		0.0335***
		(3.979)		(3.981)
Turnover		-0.0000**		-0.0000**
		(-2.084)		(-2.083)
LOGage		-0.0006		-0.0006
		(-1.426)		(-1.401)
Beta		0.0091***		0.0091***
		(10.515)		(10.529)
Constant	0.0048*	-0.0069**	0.0048*	-0.0069**
	(1.878)	(-2.356)	(1.885)	(-2.361)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	114260	114260	114260	114260
Adj. R^2	0.028	0.030	0.028	0.030

(*Continued*)

Table 4.6 – *Continued*

Panel B: alcohol+ gambling+ tobacco+ firearms+ military+ nuclear power				
	(1)	(2)	(3)	(4)
SIN_ALL_SUM	0.0012*	0.0014**		
	(1.929)	(2.201)		
SIN_All_Dummy			0.0016**	0.0018**
			(2.038)	(2.373)
LOGSIZE	-0.0014***	-0.0008***	-0.0014***	-0.0008***
	(-5.437)	(-2.836)	(-5.461)	(-2.874)
LOGLeverage	-0.0010***	-0.0008***	-0.0010***	-0.0008***
	(-3.387)	(-2.974)	(-3.390)	(-2.983)
LOGMB	0.0119***	0.0111***	0.0119***	0.0111***
	(13.996)	(13.104)	(14.008)	(13.117)
Freecashflow		0.0336***		0.0336***
		(3.982)		(3.975)
Turnover		-0.0000**		-0.0000**
		(-2.066)		(-2.025)
LOGage		-0.0006		-0.0006
		(-1.522)		(-1.514)
Beta		0.0091***		0.0091***
		(10.516)		(10.531)
Constant	0.0049*	-0.0067**	0.0049*	-0.0067**
	(1.925)	(-2.276)	(1.935)	(-2.266)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	114260	114260	114260	114260
Adj. R^2	0.028	0.029	0.028	0.029

4.6.3 Sin Acquirer M&A Returns

Having provided firm-level evidence relating to sin valuation and stock performance, we now examine the sin acquirer's mergers and acquisitions performance. As one of the most significant investment decisions made by companies, merger and acquisition transactions offer an ideal framework for studying the relationship between sin involvement and wealth effects of shareholders, for several reasons. First, merger and acquisition events have become one of the most crucial determinants of corporate performance in recent decades. Second, approval procedures for M&As are often challenged and supported by various stakeholders who have

an important influence on the merger results and play a significant role in the post-deal integration process (Deng et al., 2013). Third, mergers are primarily unexpected events. Therefore, the analysis of a merger's abnormal announcement returns can potentially alleviate the problem of reverse causality reported in previous research, in terms of the relation between CSR and firm value (McWilliams & Siegel, 2001; Jiao, 2010).

To examine market investor reactions to sin acquirer's performance in M&A deals, we conduct a regression analysis summarised by the equation below:

$$CAR_{i,t} = \alpha_0 + \alpha_{i,t} + \beta_1 SIN\_ACQ^{i,j} + \beta_2 Controls_t^i + \varepsilon_t^{ij} \qquad (10)$$

where $CAR_{i,t}$ is an acquirer's cumulative abnormal returns in possible event windows (see section 5.2 for definition); $\alpha_{i,t}$ is the vector of year and industry fixed effects to isolate the macroeconomic differences, with the standard errors adjusted at the acquiring level; $\beta_1 SIN\_ACQ^{i,j}$ presents different measurements of an acquirer's sin rating (see section 4.5.1 for definition); and $Controls_t^i$ is a series of firm- and deal-level characteristics that have been shown to have effects on the relation between stock abnormal return and CSR behaviours in M&A events.

The firm-specific control variables (market-to-book ratio, leverage, Tobin's Q, free cash flow, and firm size) are selected based on Masulis et al. (2007), who examine the determinants of merger and acquisition performance. First, Moeller et al. (2004) explain how firm size has an influence on merger performance, as managers in large firms may overestimate the potential merger synergy and may thereby induce a lower or negative abnormal return. Besides, McWilliams and Siegel (2001) show that large companies are more inclined to get involved in corporate social responsibility events than smaller firms, to attract attention and meet stakeholders' pressure. The second firm attribute we control for is the firm's financing structure (*Leverage*). Socially responsible firms are easier access to the debt financing than socially irresponsible firms (Goss and Roberts, 2011). Thirdly, corporate socially responsible investments are a type of discretionary decision that primarily rely on the availability of excess funds. A firm's performance may also related to the amount of free cash flow invested in projects (Jensen, 1986; Baker & Gompers, 2003). Therefore, we also control for the potential

CSR impact of free cash flow. Lastly, Jiao (2010) shows that companies with better-quality management are inclined to actively get involved in CSR activities. Therefore, the effects of Tobin's Q is controlled.

The M&A transaction characteristics also need to control for determinants of success (Erel at al., 2012). We control for industry diversification depended on whether acquirer and target firms are coming from the same industry. Target status is controlled based on whether target firms are public or private firms. The relative deal size of merger transactions is also been controlled; that is, the ratio of M&A deal transaction value to the acquiring firm's market value of equity. We also control for the deal transaction attitude, according to whether it was a tender offer or had a hostile attitude.

The descriptive statistics of variables classified as sin and non-sin acquirers in the M&A empirical framework are reported in the Table 4.4. Sin acquirers have a relatively large average size and free cash flow, and appear to have greater opportunities for growth due to a higher capital expenditure to sales ratio. Moreover, the higher equity return of sin acquirers indicated that they provide investors with higher returns than non-sin acquirers. In addition, sin acquirers are more leveraged than non-sin acquirers. Furthermore, the deals for sin acquirers are more likely to be diversified into different industries, and less stock is used as the payment method to finance deals. These initial experiments confirm previous research on the characteristics of sin companies (Hong & Kacperczyk, 2009; Leventis et al., 2013; Kim & Venkatachalam, 2011; Fauver & McDonald, 2014). Finally, three different valuation proxies of sin acquirers are lower than of non-sin acquirers, and sin acquirers earn higher the excess returns than of their comparable non-sin acquirers. These results confirm our hypothesis and are consistent with the findings of Hong and Kacperczyk (2009) and Fauver and McDonald (2014).

Table 4. 7
Sin Acquirer's Cumulative Abnormal Returns in M&As

This table reports the coefficients from regressions of the CARs of sin acquirers in different event windows for a sample from 1995 to 2013. Model 1-2 show the regression results by sin acquirer's three-day M&A announcement returns over the total numbers of sin rating considering the six KLD controversial business issues (firearms, nuclear power, tobacco, gambling, military, and alcohol). Model 3-4 show the regression results by sin acquirer's five-day M&A announcement returns over the total numbers of sin rating considering the six KLD controversial business issues. Model 5-6 show the regression results by sin acquirer's eleven-day M&A announcement returns over the total numbers of sin rating considering the six KLD controversial business issues. A series of the firm- and deal-level control variables discussed in section 6.3 is included in all models. All models also include the year and industry fixed effects. Descriptions of the explanatory variables are provided in the Appendix C.1. *, ** and *** denote significance at the 10%, 5%, and 1% level, respectively.

	CAR(-1,1)		CAR(-2,2)		CAR(-5,5)	
	(1)	(2)	(3)	(4)	(5)	(6)
SIN_ALL_SUM	0.0030*	0.0031*	0.0044**	0.0043**	0.0068**	0.0068**
	(1.652)	(1.698)	(2.107)	(2.091)	(2.093)	(2.082)
Firmsize	-0.0036***	-0.0038***	-0.0039***	-0.0041***	-0.0045***	-0.0048***
	(-5.995)	(-6.059)	(-5.532)	(-5.672)	(-4.709)	(-4.765)
LOGleverage	0.0015*	0.0015*	0.0021**	0.0022**	0.0030**	0.0030**
	(1.786)	(1.728)	(2.209)	(2.265)	(2.076)	(2.133)
TobinQ	-0.0003	-0.0000	-0.0001	0.0002	-0.0009	-0.0006
	(-0.285)	(-0.037)	(-0.070)	(0.221)	(-0.563)	(-0.398)
LOGMB	0.0051***	0.0047**	0.0052**	0.0045**	0.0057*	0.0051*
	(2.622)	(2.417)	(2.453)	(2.139)	(1.894)	(1.688)
Freecashflow	0.0271**	0.0233*	0.0408**	0.0362**	0.0626***	0.0587***
	(1.972)	(1.692)	(2.392)	(2.100)	(2.948)	(2.757)
Diversifying		-0.0031		-0.0032		-0.0030
		(-1.637)		(-1.465)		(-1.018)
Targetprivate		-0.0022		-0.0018		-0.0010
		(-1.131)		(-0.801)		(-0.307)
Relsize		-0.0043		-0.0079		-0.0071
		(-0.907)		(-1.355)		(-1.169)
Stockdeal		-0.0089***		-0.0099***		-0.0086**
		(-2.967)		(-2.858)		(-2.016)
Hostile		-0.0143		-0.0078		-0.0060
		(-0.920)		(-0.515)		(-0.230)
Tender		-0.0031		-0.0003		-0.0004
		(-0.718)		(-0.075)		(-0.055)
Constant	0.0358***	0.0447***	0.0382***	0.0480***	0.0429***	0.0511***
	(4.984)	(5.802)	(4.446)	(5.184)	(3.638)	(4.181)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4059	4059	4059	4059	4059	4059
Adj. R^2	0.020	0.024	0.012	0.017	0.010	0.011

Table 4.7 reports the regression results of the CARs of sin acquirers from various specifications of equation (10). Column 1 reports the estimated value of the model with *CAR(-1,1)* as the dependent variable, and includes a set of firm-level independent variables, including *SIN_ALL_SUM, Firmsize, Leverage, TobinQ, MB,* and *Freecashflow*. The coefficient of *SIN_ALL_SUM* is 0.0030, which is statistically significant. Firm size has significantly negative coefficients, suggesting that managers in large firms may overestimate the potential merger synergy and thereby induce a lower or negative abnormal return. Both *Leverage*, *Freecashflow* and *MB* have significantly positive coefficients, which indicates that acquirers with market-to-book ratio, free cash flow, and leverage have potentially higher abnormal returns.

In Model 2, an additional set of M&A deal-level characteristics are further controlled, including *Diversifying, Targetprivate, Relsize, Stockdeal, Hostile* and *Tender.* The coefficient of *SIN_ALL_SUM* is still significantly positive (0.0031), suggesting that sin acquirers with a higher rating have higher CARs in M&As. In columns 3–6, we continue to estimate with alternative specifications through alternative M&A event windows, to illustrate the robustness of our findings. We take *CAR(-2,2)* (five-day event windows) in columns 3–4 and find that *SIN_ALL_SUM* continues to have a significantly positive coefficient (5% level). We further take *CAR(-5,5)* (eleven-day event windows) in columns 5–6. The key observation from all of these alternative specifications is that the coefficients of *SIN_ALL_SUM* remain significantly positive, and the economic effects results are similar to the one reported in the second column. For example, sin acquirers are still estimated to have 0.0068 higher cumulative abnormal returns than their comparable non-sin stocks (column 6). Overall, our results in Table 4.7 support our hypothesis that sin acquirers have higher merger and acquisition returns, as measured by M&A abnormal announcement returns.

Due to the nature of controversial business activities that oppose social norms, sin firms are always under a high degree of regulatory and public scrutiny, and face high litigation risk (Hong & Kacperczyk, 2009; Kim & Venkatachalam, 2011; Leventis et al., 2013; Fauver & McDonald, 2014). A sin company is a "company under siege from lawyers, politicians, and public opinion" (Edgecliffe-Johnson, 2001). Therefore, in order to reduce the unfavourable commercial content, managers in sin companies are expected to make more careful corporate

investment decisions than other companies. Consistent with this view, a possible explanation for the high accumulated excess returns of sin acquirers can be found in the managerial pressure from the strict regulatory scrutiny and litigation risk.

To provide conclusive evidence in this conjecture, we compare the M&A returns while incorporating different levels of monitoring of sin acquirers. The following empirical specifications are estimated to test the hypothesis:

$$CAR_{i,t} = \alpha_0 + \alpha_{i,t} + \beta_1 {SIN_{ACQ}}^{i,j} + \beta_2 {SIN_{ACQ}}^{i,j} * VOTE + \beta_3 VOTE + \beta_4 Controls_t^i + \varepsilon_t^{ij} \quad (11)$$

where $CAR_{i,t}$ is an acquirer's cumulative abnormal returns in possible event windows (see section 4.5.2 for definition); $\alpha_{i,t}$ is the vector of year and industry fixed effects to isolate the macroeconomic differences, with the standard errors adjusted at acquiring level; $\beta_1 SIN\_ACQ^{i,j}$ presents different measurements of an acquirer's sin rating (see section 4.5.1 for definition); *VOTE* is a proxy for the scrutiny on acquirers, with a value of 1 if a M&A deal needs a shareholder vote to approve the finance process, and 0 otherwise; $Controls_t^i$ is a series of firm- and deal-level characteristics that have been shown to have influences on the relation between stock abnormal return and CSR behaviours in M&A events. The variables in $Controls_t^i$ include *Firmsize, LOGleverage, TobinQ, LOGMB, Freecashflow, Diversifying, Targetprivate, Relsize, Stockdeal, Hostile* and *Tender*.

Table 4. 8
Sin Acquirer's CAR and Vote Interaction

This table compares the interaction regression results between sin acquirers' rating and shareholder voting to finance the M&A deals in different event windows for a sample from 1995 to 2013. Model 1-2 show the regression results by sin acquirer's three-day M&A announcement returns. Model 3-4 show the regression results by sin acquirer's five-day M&A announcement returns. Model 5-6 show the regression results by sin acquirer's eleven-day M&A announcement returns. A series of firm- and deal-level control variables discussed in section 6.3 is included in all models. All models also include the year and industry fixed effects. Descriptions of the explanatory variables are provided in the Appendix C.1. *, ** and *** denote significance levels at the 10%, 5%, and 1%, respectively.

	CAR(-1,1)		CAR(-2,2)		CAR(-5,5)	
	(1)	(2)	(3)	(4)	(5)	(6)
*SIN_ALL_SUM*VOTE*		0.0111**		0.0167***		0.0199*
		(2.220)		(2.666)		(1.868)
SIN_ALL_SUM	0.0031*	0.0017	0.0043**	0.0022	0.0068**	0.0043
	(1.698)	(0.869)	(2.091)	(0.996)	(2.082)	(1.442)
VOTE		-0.0203**		-0.0210**		-0.0303**
		(-2.237)		(-1.981)		(-2.319)
Firmsize	-0.0038***	-0.0037***	-0.0041***	-0.0040***	-0.0048***	-0.0046***
	(-6.059)	(-5.901)	(-5.672)	(-5.515)	(-4.765)	(-4.653)
LOGleverage	0.0015*	0.0014	0.0022**	0.0020**	0.0030**	0.0029**
	(1.728)	(1.624)	(2.265)	(2.156)	(2.133)	(2.043)
TobinQ	-0.0000	0.0000	0.0002	0.0003	-0.0006	-0.0005
	(-0.037)	(0.046)	(0.221)	(0.312)	(-0.398)	(-0.320)
LOGMB	0.0047**	0.0048**	0.0045**	0.0046**	0.0051*	0.0053*
	(2.417)	(2.464)	(2.139)	(2.171)	(1.688)	(1.729)
Freecashflow	0.0233*	0.0221	0.0362**	0.0348**	0.0587***	0.0568***
	(1.692)	(1.599)	(2.100)	(2.023)	(2.757)	(2.657)
Diversifying	-0.0031	-0.0031*	-0.0032	-0.0033	-0.0030	-0.0031
	(-1.637)	(-1.688)	(-1.465)	(-1.536)	(-1.018)	(-1.081)
Targetprivate	-0.0022	-0.0024	-0.0018	-0.0021	-0.0010	-0.0014
	(-1.131)	(-1.275)	(-0.801)	(-0.941)	(-0.307)	(-0.441)
Relsize	-0.0043	-0.0044	-0.0079	-0.0079	-0.0071	-0.0071
	(-0.907)	(-0.909)	(-1.355)	(-1.336)	(-1.169)	(-1.164)
Stockdeal	-0.0089***	0.0073	-0.0099***	0.0060	-0.0086**	0.0150
	(-2.967)	(0.865)	(-2.858)	(0.615)	(-2.016)	(1.217)
Hostile	-0.0143	-0.0142	-0.0078	-0.0082	-0.0060	-0.0061
	(-0.920)	(-0.901)	(-0.515)	(-0.522)	(-0.230)	(-0.234)
Tender	-0.0031	-0.0038	-0.0003	-0.0011	-0.0004	-0.0014
	(-0.718)	(-0.874)	(-0.075)	(-0.250)	(-0.055)	(-0.222)
Constant	0.0447***	0.0453***	0.0480***	0.0489***	0.0511***	0.0522***
	(5.802)	(5.740)	(5.184)	(5.204)	(4.181)	(4.299)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4059	4059	4059	4059	4059	4059
Adj. R^2	0.024	0.027	0.017	0.019	0.011	0.014

Table 4.8 reports the results of sin acquirers' *CAR* and *VOTE* interaction tests. Consistent with our expectations, the interaction terms of *SIN_ALL_SUM* and *VOTE* are significantly positive. The coefficient of the interaction term in Model 2 is 0.0111 and statistically significant, and the value of this coefficient is three times that of the coefficient in Model 1 (0.0031). The results are consistent and robust if we re-estimate the regressions using dependent variables measured in five-day and eleven-day M&A event windows. In general, we find that those sin acquirers who are subject to shareholder voting to finance M&A deals experience significantly higher CARs around the deal announcement dates. This evidence is consistent with our view that the managerial behaviours forced by the greater scrutiny faced by sin acquirers can partially explain the superior performance of these M&As.

In addition, sin companies have better financial reporting and accounting, which enable them to demonstrate high levels of earning quality to attract investors to work against the greater scrutiny that they face (Kim & Venkatachalam, 2011). The better-quality financial reporting can benefit companies through the reduction of the problems of information asymmetry and adverse selection, improved cost of capital, and increased liquidity (see Hong & Kacperczyk, 2009). Previous studies also demonstrate that high-quality financial reports can improve the ability of shareholders to supervise managerial investment activities, thereby improving investment efficiency. For example, Francis and Martin (2010) investigate the relation between timely loss identification and corporate M&A decisions. They find that accounting conservatism decreases the information asymmetry for shareholders, and therefore plays a powerful role in supervising management performance, which will lead to more benefits. Chang et al. (2009) show that companies with better financial reporting are more able to access to capital, and it is due to the high-quality financial reports reduce the costs of adverse selection related to investment efficiency, and reduce external financing costs.

M&A decisions are one of the most important corporate investments. Given the high risk of censorship and supervision, managers of sin acquisition companies are under pressure to generate higher-quality M&A transactions to avoid the risk of litigation and regulatory interventions in the capital market. High-level scrutiny and litigation risk work as an effective monitoring mechanism for controlling shareholder and investor managers' opportunistic

behaviours when making M&A investment decisions; consequently, sin acquirers can outperform comparable companies regarding M&A announcement returns.

4.6.4 M&A Payment Preference

This section examines the payment preferences for sin acquirers to finance M&A deals. As sin acquirers face higher regulatory scrutiny, they may be more likely to substitute stock with cash to bypass shareholder voting when accomplishing M&A deals. In addition, sin companies are running cash-rich businesses (Beneish et al., 2008), which may be another consideration when they choose the payment method to complete deals. Therefore, we generate the following cross-sectional regression specification:

$$CashOnly_{i,t} = \alpha_0 + \alpha_{i,t} + \beta_1 SIN\_ACQ^{i,j} + \beta_2 Controls_t^i + \varepsilon_t^{ij} \qquad (12)$$

where $CashOnly_{i,t}$ is a dummy variable that value equals 1 if M&A deals are fully paid by cash; $\alpha_{i,t}$ is the vector of year and industry fixed effects to control for the macroeconomic differences, with the standard errors adjusted at acquiring level; $\beta_1 SIN\_ACQ^{i,j}$ presents different measurements of an acquirer's sin rating (see section 4.5.1 for definition); $Controls_t^i$ is a series of firm- and deal-level characteristics, including firm size, diversifying deal dummy, leverage, MB, Tobin's Q, free cash flow, target private dummy, relative size, hostile dummy, and tender offer dummy.

We are interested in the coefficient of β_1, which is a measure of whether sin acquirers have a higher cash payment preference after controlling for a group of other characteristics. Table 4.9 reports that the coefficient of *SIN_ALL_SUM* reported in Model 1 is 0.2145 and is highly significant. When controlling for the other features in Model 2 and Model 3, the coefficients gradually weaken but they remain significantly positive after controlling for all the business- and transaction-level variables. These results imply that sin acquirers are inclined to use full cash as a means of payment to accomplish transactions. This is consistent with our hypothesis that, due to the pressure from regulatory scrutiny and litigation risk faced by sin acquirers, they may be more likely to use cash to complete M&A deals in order to bypass the shareholder voting process. Moreover, sin stocks are not well accepted as the currency to pay

the M&A deals because of their controversial business issues.

Table 4. 9
Sin Acquirer's Cash Payment Preference

This table reports the probit regressions results of the payment method preference of sin acquirers to finance the M&A deals for a sample from 1995 to 2013. The dependent variable is a dummy variable value equals to one if the M&A deals are fully paid by cash, and zero otherwise. *SIN_ALL_SUM* is the total score of six CSR controversial business issues measures in areas of nuclear power, military, tobacco, gambling, firearms, and alcohol. A series of firm- and deal-level control variables is included in all models. All models also include the year and industry fixed effects. Descriptions of the explanatory variables are provided in the Appendix C.1. *, ** and *** denote significance levels at the 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)
SIN_ALL_SUM	0.2145***	0.1644***	0.1454**
	(3.288)	(2.931)	(2.521)
Firmsize		0.0454***	0.0123
		(2.588)	(0.673)
LOGleverage		-0.0032	0.0024
		(-0.161)	(0.117)
TobinQ		-0.0354	-0.0240
		(-1.178)	(-0.780)
LOGMB		0.1070**	0.0695
		(2.234)	(1.435)
Freecashflow		1.0043***	0.8868***
		(3.040)	(2.706)
Diversifying			0.1001**
			(2.103)
Targetprivate			-0.2181***
			(-4.461)
Relsize			-0.4990**
			(-2.431)
Hostile			-0.9813**
			(-2.230)
Tender			0.8107***
			(7.397)
Constant	-0.9030***	-1.0849***	-0.8161***
	(-3.735)	(-3.731)	(-2.699)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	4674	4059	4059
Pseudo R^2	0.0426	0.0500	0.0749

4.6.5 M&A Completion Duration

M&As are complex processes, and the integration of deals require the collaboration of different functional parts. We predict that M&As proposed by sin acquirers are likely to have a longer completion duration time. This may be due to the conflict of social norms between sin acquirers and non-sin targets, which makes it difficult for post-deal integration. The following cross-sectional regression model is estimated to test this hypothesis:

$$Completion_{i,t} = \alpha_0 + \alpha_{i,t} + \beta_1 SIN\_ACQ^{i,j} + \beta_2 Controls_t^i + \varepsilon_t^{ij} \quad (13)$$

where $Completion_{i,t}$ is the number of days between the M&As announcement date and the effective date; $\alpha_{i,t}$ is the vector of year and industry fixed effects to control for the macroeconomic differences, with the standard errors adjusted at acquiring level; $\beta_1 SIN\_ACQ^{i,j}$ presents different measurements of an acquirer's sin rating (see section 4.5.1 for definition); and $Controls_t^i$ is a vector of the following firm- and deal-level characteristics: *Firmsize* is the logarithm of book value of total assets; *LOGMB* is the logarithm of the market-to-book ratio of stock; *Diversifying* is a dummy variable value equals to 1 if M&A parties are from the different industries, and 0 otherwise; *Targetprivate* is a dummy variable value equals to 1 if the target firm is private and unlisted, and 0 otherwise; *Relsize* is the ratio of the deal value of the M&A transaction to the market value of acquirer equity; *Hostile* is a dummy variable value equals to 1 if an M&A deal's attitude is classified as hostile, and 0 otherwise; *Tender* is a dummy variable value equals to 1 if the M&A deal is classified as a tender offer, and 0 otherwise; *Poison* is a dummy variable equal to 1 if the deal is reported as a poison pill, and 0 otherwise; and *Competing* is a dummy variable equal to 1 if the deal is reported as competing deal, and 0 otherwise.

Table 4.10 provides empirical support for our prediction. In both regressions, the explanatory variables of the sin acquirer rating are significantly positive, which indicate that the acquisition took longer for the sin acquirer than for the non-sin acquirer. The average range of the coefficient of explanatory variables is between 8.2 and 11.8, which means that sin acquirers take an average of ten days longer than comparable non-sin firms. These results might be due to the conflict of social norms between sin acquirers and targets, presenting difficulties

for post-deal integration.

Table 4. 10
Completion Time of M&A Deals for Sin Acquirers

This table reports the regressions results of the M&A deals' completion duration for sin acquirers for a sample from 1995 to 2013. The dependent variable is defined as the number of days to complete the M&A deals between the announcement date and the effective date. The explanatory variables are different measurements of sin acquirer ratings in firearms, gambling, military, tobacco, nuclear power, and alcohol dimensions. A series of firm- and deal-level control variables is included in all models. All models also include the year and industry fixed effects. Descriptions of the explanatory variables are provided in the Appendix C.1. *, ** and *** denote significance levels at the 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)
SIN_ALL_SUM	11.8885**	8.9567**		
	(2.331)	(1.990)		
SIN_ALL_Dummy			11.5303**	8.2907*
			(2.230)	(1.763)
Firmsize		6.4549***		6.5505***
		(6.967)		(7.071)
LOGMB		-0.3947		-0.5265
		(-0.188)		(-0.248)
Diversifying		-19.0147***		-18.9454***
		(-5.930)		(-5.901)
Targetprivate		-25.9155***		-25.9418***
		(-9.394)		(-9.392)
Stockdeal		36.9501***		36.8455***
		(10.302)		(10.288)
Hostile		141.7156***		141.5015***
		(3.326)		(3.317)
Tender		2.7314		2.7942
		(0.541)		(0.547)
Poison		107.3276*		107.2815*
		(1.857)		(1.855)
Competing		10.1290		10.3830
		(0.832)		(0.852)
Constant	86.1277***	21.4115	86.3645***	21.0910
	(9.016)	(1.637)	(9.048)	(1.612)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	6087	6087	6087	6087
Adj. R^2	0.145	0.213	0.144	0.212

Table 4. 11
Firm-level Valuation Effects for Sin Acquirers–M&A Sample

The table reports the results of the valuation effects of sin stocks at the firm-level for an M&A sample from 1995 to 2013. The dependent variables are three alternative proxies for valuation measurements. The dependent variable for model 1-3 is the logarithm of the market to book ratio of stock. The dependent variable for model 4-6 is the logarithm of the firm's price to earnings ratio. The dependent variable for model 7-9 is the logarithm of the firm's price to EBITA ratio. *SIN_ALL_SUM* is the total score of six CSR controversial business issues measures in areas of nuclear power, firearms, tobacco, gambling, military, and alcohol. In different specifications, a series of the firm- and market-level characteristics is controlled in all models. All models also include the year and industry fixed effects. Detailed variable definitions are in the Appendix C.1. ***, ** and * indicate significance levels at the 1%, 5%, and 10% respectively.

	LOGMB			LOGPE			LOGPEBITDA		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
SIN_ALL_SUM	-0.1317**	-0.1454***	-0.1727***	-0.4056*	-0.1464***	-0.1723***	-0.4318***	-0.2018***	-0.2545***
	(-2.030)	(-2.816)	(-2.963)	(-1.837)	(-2.858)	(-2.981)	(-2.922)	(-2.879)	(-3.191)
LOGROE		0.1809***	0.1875***		-0.8211***	-0.8168***		-0.6105***	-0.6316***
		(9.380)	(7.305)		(-42.895)	(-32.229)		(-22.352)	(-19.531)
RD_SALES		-0.1376**	-0.1220		-0.1348**	-0.1094		-0.4577***	-0.3934***
		(-2.338)	(-1.523)		(-2.256)	(-1.331)		(-6.334)	(-3.998)
SP500		-0.0301	-0.0355		-0.0339	-0.0432		-0.0198	-0.0425
		(-1.053)	(-0.754)		(-1.230)	(-0.930)		(-0.599)	(-0.738)
Dividends/Share		0.7317***	0.7940***		0.7432***	0.8016***		0.8739***	0.9498***
		(6.714)	(5.533)		(6.611)	(5.366)		(6.026)	(4.476)
FCF_Assets		0.0985	0.2799***		0.0999	0.2888***		0.0068	-0.0847
		(1.478)	(4.158)		(1.459)	(4.498)		(0.079)	(-1.135)
CES			0.5275			0.4304			0.0272
			(1.603)			(1.351)			(0.053)
Constant	1.4928***	0.8743***	1.0095***	-1.8932***	0.8846***	1.0284***	-2.2569***	-0.0285	0.1894
	(9.772)	(6.781)	(6.761)	(-5.663)	(6.643)	(6.638)	(-7.378)	(-0.177)	(0.934)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4606	2517	1589	2555	2517	1589	4484	2524	1589
Adj. R^2	0.193	0.331	0.347	0.194	0.899	0.904	0.172	0.800	0.818

Table 4. 12

Firm-level Expected Returns for Sin Acquirers–M&A Sample

The table reports the expected return tests of sin acquirers at the firm-level for an M&A sample from 1995 to 2013. The dependent variable is the expected returns of sin acquirers. *SIN_ALL_SUM* is the total score of six CSR controversial business issues measures in areas of nuclear power, firearms, gambling, tobacco, military, and alcohol. In different specifications, a series of the firm- and market-level characteristics is controlled. All models also include the year and industry fixed effects. Detailed variable definitions are in the Appendix C.1. ***, ** and * indicate significance levels at the 1%, 5%, and 10% respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
SIN_ALL_SUM	0.0073*	0.0112***	0.0109**	0.0123***	0.0127***	0.0104**
	(1.760)	(2.651)	(2.412)	(2.744)	(2.797)	(2.083)
LOGSIZE	-0.0006	-0.0042***	-0.0038***	-0.0025	-0.0010	-0.0030
	(-0.553)	(-3.572)	(-2.952)	(-1.588)	(-0.619)	(-1.481)
LOGMB		0.0229***	0.0236***	0.0223***	0.0180***	0.0216***
		(6.269)	(5.871)	(5.580)	(4.323)	(4.438)
LOGLeverage			0.0013	0.0016	0.0012	0.0013
			(0.765)	(0.917)	(0.663)	(0.593)
Freecashflow				0.0601*	0.0413	-0.0797
				(1.881)	(1.116)	(-1.613)
Turnover				-0.0000***	-0.0000**	-0.0000
				(-2.824)	(-2.262)	(-1.474)
LOGage					-0.0043	-0.0053*
					(-1.584)	(-1.731)
Beta						-0.0001
						(-0.021)
Constant	0.0235	0.0207	0.0162	0.0064	0.0137	0.0345
	(1.533)	(1.364)	(0.982)	(0.353)	(0.716)	(1.467)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4214	4150	3632	3632	3203	2118
Adj. R^2	0.020	0.032	0.034	0.036	0.031	0.043

4.7 Robustness Checks and Sensitivity Tests

This section further considers some robustness tests. Our firm-level evidence on valuation and expected returns of sin acquirers in sections 4.6.1 and 4.6.2 are based on the universe sample covers from 1995 to 2013. It is important to consider whether our results might be due to the influence of other factors that may not reflect valuation and equity return effects. To confirm the robustness of our findings, we re-estimate regressions depended on the M&A sample discussed in section 4.6.3. The robustness test results for the valuation effects of sin

acquirers, by considering those involving business in all six controversial issues is reported in the Table 4.11. Consistent with previous tests, we use three proxies for the acquirer's valuation measurements. The coefficients for the valuation variables are significantly negative. The results show a negligible change in scale, which is mainly due to the sample difference. Therefore, these results show the robustness of our firm-level valuation effects, even when re-estimating the M&A sample. We then consider the robustness check of the equity return effects and the results are shown in Table 4.12. Similarly, we re-estimate the models in the M&A sample and consider the sin acquirers with all six controversial business ratings. The control variables are unchanged with the variation in different models. We find that the results remained largely unchanged, both in the scale and significance levels, compared with the previous tests on equity returns. In summary, these further tests and analyses confirm that all the results of our return and valuation regressions are robust by using alternative samples.

4.8 Summary and Conclusion

Social norms affect a wide range of economic behaviours around the world. While many companies implement socially responsible investments to promote their adherence to moral values, there is a group of companies that is perceived to be unethical due to their controversial business activities. According to KLD STATS, these unethical firms are considered sin companies due to their business related to the supporting, licensing, manufacturing, ownership, and retailing of firearms, tobacco, military, alcohol, gambling, and nuclear power.

This chapter investigates the value of controversial social norms in M&As performance. We find that sin acquirers outperform comparable non-sin companies and generally experience higher cumulative abnormal returns in M&As. Our findings are consistent with the idea that these high M&A returns are due to the greater regulatory scrutiny and litigation risk faced by sin acquiring firms, which force managers to deliver high-quality M&A deals. Moreover, the superior quality of financial reporting by sin companies enhances the monitoring role of shareholders in controlling managerial investment behaviours, thereby increasing investment efficiency.

Furthermore, sin acquirers have the propensity to use cash instead of stocks as the payment method to finance M&A deals. This cash payment preference generally demonstrates sin acquirers' keenness to avoid monitoring from shareholders and the legislative intervention process when completing the M&A transactions. It is also because sin stocks are not well accepted currency to finance the M&A deals. In addition, completion of M&A deals by sin acquirers takes a longer time, which may be due to a social norms conflict between acquirer and target which makes it more difficult for the post-deal integration.

This chapter also extends the study of Hong and Kacperczyk (2009) and offers new firm-level evidence on the neglect effects on sin by investors. We show that socially constrained investors are not simply frightened by sin industries on the valuation and equity return effects. Instead, the treatment by institutional investors and analysts actually depends on their analysis of the upstream and downstream aspects of controversial business activities, despite sin companies strategically diversifying their business into non-sin industries.

Overall, our findings suggest that controversial business issues have an influence on M&As in terms of shareholder wealth, deal payment preference, and completion duration. One caveat of this study is that we do not examine the long-term mergers and acquisitions performance of sin companies, as we leave this for future research.

Appendix C. 1: Variable Definitions and Data Sources for Chapter 4

Variable	Variable description & data source
Panel A: Controversial business issues	
SIN_AGT_SUM	The sum of three CSR controversial business issues measures in areas of alcohol, gambling, tobacco. Source: KLD.
SIN_AGT_Dummy	A dummy variable value equals to one when the acquirer has any CSR controversial business issues in areas of alcohol, gambling and tobacco, and zero otherwise. Source: KLD.
SIN_ALL_SUM	The total score of six CSR controversial business issues measures in areas of nuclear power, tobacco, firearms, gambling, military, and alcohol. Source: KLD.
SIN_ALL_Dummy	A dummy variable value equals to one when the acquirer firm has any CSR controversial business issues in areas of nuclear power, tobacco, firearms, gambling, military, and alcohol, and zero otherwise. Source: KLD.
Panel B: Valuation regressions	
LOGROE	The logarithm of the ratio of earnings to the book value of equity. Source: Compustat.
Dividends/Share	The ratio of dividends per share in USD. Source: Compustat.
FCF/Assets	The ratio of free cash flow of acquirer to the total assets of the acquirer. Source: Compustat.
CES	The ratio of capital expenditures to sales. Source: Compustat.
S&P500	A dummy variable value equals to one if the acquirer is a member of the S&P 500 index, and zero otherwise. Source: Compustat.
RD_SALES	The ratio of research and development (R&D) expenditures to sales. Source: Compustat.
Tobin'Q	The ratio of the market value of assets to the book value of assets. Source: Compustat.
LOGMB	The logarithm of the market to book ratio. Source: Compustat.
LOGPE	The logarithm of the firm's price to earnings ratio. Source: Compustat
LOGPEBITDA	The logarithm of the ratio of firm's price to EBITA (earnings before interest, tax, depreciation, and amortization). Source: Compustat.
Panel C: Expected returns regressions	
Expected return	The return of firm's stock net the risk-free rate. Source: CRSP/Compustat.
LOGSIZE	The logarithm of the acquirer's market capitalization. Source: Compustat.
MB	The ratio of the market value of equity to the book value of equity. Source: Compustat.
LOGleverage	The logarithm of the ratio of the book value of debts to the market value of assets. Source: Compustat.

(*Continued*)

Appendix C.1 – Continued

Freecashflow	Operating income before depreciation minus the sum of interest expenses, income taxes and capital expenditures, scaled by the book value of total assets. Source: Compustat.
Turnover	The mean value of daily share turnover in stock. Source: Compustat.
Beta	Beta decile for stocks in the following twelve months. Source: WRDS.
Firmage	The logarithm of the firm's operating years which is estimated by the year numbers that have data available in the CRSP/Compustat database. Source: CRSP/Compustat.
Panel C: Cumulative abnormal returns regressions	
CAR(-1,1)	Three-day acquirer's cumulative abnormal return around merger and acquisition transactions estimated by the market model. The estimated windows is (−210, −11) and the value-weighted return is used to generate the market index. Source: CRSP.
CAR(-2,2)	Five-day acquirer's cumulative abnormal return around merger and acquisition transactions estimated by the market model. The estimated windows is (−210, −11) and the value-weighted return is used to generate the market index. Source: CRSP.
CAR(-5,5)	Eleven-day acquirer's cumulative abnormal return around merger and acquisition transactions estimated by the market model. The estimated windows is (−210, −11) and the value-weighted return is used to generate the market index. Source: CRSP.
Firmsize	The logarithm of the book value of total assets. Source: SDC.
Diversifying	A dummy variable value equals to one if M&A parties are from the different industries, and zero otherwise. Source: SDC.
Targetprivate	A dummy variable value equals to one if the target firm is private and unlisted, and zero otherwise. Source: SDC.
Relsize	The ratio of the deal value of the M&A transaction to the market value of acquirer equity. Source: SDC.
Stockdeal	A dummy variable value equals to one if the M&A deal is partially or fully paid with stock, and zero otherwise. Source: SDC.
Hostile	A dummy variable value equals to one if an M&A deal's attitude is classified as hostile, and zero otherwise. Source: SDC.
Tender	A dummy variable value equals to one if the M&A deal is classified as a tender offer, and zero otherwise. Source: SDC.
Poison	A dummy variable value equals to one if the M&A deal is reported as a poison pill, and zero otherwise. Source: SDC.
Competing	A dummy variable value equals to one if the M&A deal is reported as a competing deal, and zero otherwise. Source: SDC.

Chapter 5:

Conclusions and Future Research

5.1 Concluding Remarks for This Thesis

Corporate governance has significant influence and will continue to grow in importance in firms' operations and performance. As important corporate investment decisions, M&As work as an ideal channel to investigate the effects of corporate governance. This thesis has effectively assessed both the risk management and shareholder wealth effects in M&As, by studying different perspectives of corporate governance practices. This thesis shed light on the economic roles of corporate governance in M&A performance and efficiency at both the domestic and international levels.

The first inquiry presented in Chapter 2 focuses on the issue of governance arbitrage strategies on corporate credit risk through cross-border M&As. The research in this chapter contributes to existing studies on multinational corporate credit risk and corporate governance spill-overs in cross-border M&As, by addressing the gaps and disparities that currently exist in our understanding of the impacts on shareholder announcement return issues.

The recent financial crisis had raise an increasing concern about the stability of the global credit market. Cross-border M&As enable firms to exploit additional opportunities abroad, moving beyond the demanding economic and governance environments at home. This chapter investigates how the change in governance quality environment induced by cross-border M&As affects corporate credit risk. The results show that acquiring firms from countries with a weak regulatory environment experience a reduction in their credit default swap spread after taking over a target firm that operates under a stricter creditor or shareholder protection regime. This suggests that cross-border M&As provide a governance arbitrage channel that enables acquirers to be exposed to a jurisdiction with better-quality corporate governance with which they must comply, and that this affects corporate credit risk. However, in contrast, an acquirer's credit risk does not deteriorate after completing M&A transactions in a country with weaker corporate governance. These results indicate that managerial behaviour is still constrained by the more stringent home governance regulations. This chapter also provides evidence that the asymmetric effect of corporate governance on credit risk is robust to the asset quality of the target firm and is more pronounced when it involves a publicly listed target company but are not stronger when acquiring a relative larger target firm. The findings of

Chapter 2 have direct implications for corporate executives regarding risk management strategies through cross-border M&A investment.

The second inquiry in this thesis moves the focus to another corporate governance practice, namely corporate social responsibility. It contributes to a comprehensive assessment on the ongoing controversy on the effects of CSR on shareholder wealth, from a new perspective. This chapter focuses on corporate social responsibility, as there is compelling evidence that it is a crucial driver of corporate financial performance, and because sustainability has been embedded into business practices for corporations to provide additional exposure. This chapter offers a further understanding on the economic implications of CSR by examining the market reactions to firms' socially responsible and irresponsible behaviour in merger transactions.

The results of this chapter extend the stakeholder value maximisation theory by documenting that a strong social responsibility performance by an acquiring firm does not have significant effects on acquirer shareholder returns, while their socially irresponsible activities have significant adverse effects on merger returns. It is found that the stock market does not reward good CSR activities made by acquiring firms, however it punishes those that engage in CSR concern activities. In particular, acquirers whose CSR concerns are high in the community, employment relations, environment and human rights dimensions realise lower merger announcement abnormal returns. The clear implication of this chapter is that an acquirer's CSR concerns rating plays a vital role in the stakeholder value maximisation view. These findings are also informative for corporate decision makers, showing that, although firms cannot create shareholder wealth by simply investing in socially responsible activities, they can achieve this result by minimising their socially irresponsible behaviours.

The third inquiry examines a particular perspective of corporate social responsibility with unique characteristics: controversial social norms. While many companies implement socially responsible investments to promote their adherence to moral values, there is a group of companies that is perceived to be unethical due to their controversial business activities. This chapter offers a better knowledge of the value of controversial social norms on M&A performance including shareholder wealth effects by studying sin companies, i.e. those that are

involved in the supporting, licensing, manufacturing, retailing, and ownership of firearms, gambling, military, tobacco, nuclear power, and alcohol.

The results of this chapter show that sin acquirers can outperform comparable non-sin companies and generally experience higher CARs in M&As. The findings are consistent with the idea that high acquirers' returns in M&As are due to the greater regulatory scrutiny and litigation risk faced by sin acquiring firms, which will force managers to deliver high-quality M&A deals. Moreover, the better-quality financial reporting released by sin companies also enhances the monitoring role of shareholders in controlling managerial investment behaviours, thereby increasing investment efficiency.

The results also show that sin acquirers have the propensity to choose cash instead of stocks as the payment method to finance M&A deals. This preference is likely to demonstrate sin acquirers' wish to avoid monitoring from shareholders and the legislative intervention process when completing M&A deals. It is also because sin stocks are not well accepted as the payment method to finance the M&As. In addition, the duration of completion of M&A deals by sin acquirers is longer, which may be due to the social conflicts between a sin acquirer and non-sin target making it more difficult for post-deal integration.

By extending the work of Hong and Kacperczyk (2009), this chapter offers new firm-level evidence on the neglect effects of sin. It shows that socially constrained investors are not simply frightened by sin industries on the valuation and equity return effects; instead, the treatment of companies by institutional investors and analysts depends on their analysis of the upstream and downstream aspects of controversial business activities, despite sin companies strategically diversifying their business into non-sin industries. The findings of Chapter 4 have implications for investors and fund managers in terns of sin-related stock investment.

To sum up, this thesis has presented evidence that corporate governance has profound effects on the risk management and shareholder wealth effects for mergers and acquisitions investment across borders and at the national level.

5.2 Directions for Further Research Work

This thesis has made substantial inroads into the important research area of exposing

the range of opportunities for corporations to use different corporate governance practices to better manage risk and shareholder wealth strategies in mergers and acquisitions. However, it calls for further research to better examine the full ramifications of the influence of corporate governance on M&A performance and efficiency.

M&A transactions will not happen without consensus from both acquirer and target firms. Although more empirical research has been focused to the M&A performance of acquiring firms, a clear direction for future research is increasing our understanding of the target companie's credit risk management strategy and shareholder return issues in domestic and cross-border M&As. Other worthwhile avenues for future research are to examine long-term mergers and acquisitions performance, through different perspectives of corporate governance practices. Building upon the work initiated in this thesis, the contributions of further research in these above-mentioned areas are potentially enormous.

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