Empirical Investigations into the Impacts of Corporate Social Responsibility on the Market for Corporate Control: from Deal Initialization to Finalization

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By

Miss Xue Li

ICMA Centre

Henley Business School

University of Reading

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仅以此

献给亲爱的爷爷

献给过去八年的你我他

献给生命中的白驹过隙

献给生命中最永恒的爱

DEDICATION

While my name stands alone on the front cover of this PhD thesis, I am by no means its sole contributor. Rather, there are a number of people who deserve to be both acknowledged and thanked for their contribution to this thesis.

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感恩生活，感恩你们的爱！
I love you all!

DECLARATION

I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

Signature: Date:

    Xue Li

ABSTRACT

This thesis attempts to make original contributions on the empirical impacts of **C**orporate **S**ocial **R**esponsibility (CSR) on the market for corporate control from deal initialization to deal finalization. I identify a bilateral interaction between an acquirer and a target that affects M&A in various ways, rather than the previously identified unilateral impacts from a deal buyer or a seller. Using the most chronologically extensive dataset that has been used in the context of CSR-M&A literature, I first investigate the impacts of corporate social responsibility on M&A likelihood. I find that more M&A deals are initiated for firms with closer CSR proximity between an acquirer and a target. The higher the Acquirer-Target CSR Difference (ATCD), the lower their M&A likelihood, especially when this CSR implied divergence is large in terms of employee relations, environment and product aspects. From these initialized deals, the probability of completing a deal is reduced by 8.65% if there is a 10% unit rise in ATCD. These results indicate that ATCD is an important determinant of M&A likelihood and deal completion likelihood. It indicates that two firms with close CSR scores are more likely to merge together given that such similarity brings about familiarity and trust in cultural and managerial aspects between them, thereby contributing to lower operating frictions in the deal process.

I then extend the research framework to M&A premium and wealth creation and provide evidence of the existence of a 'learning effect'. I identify a strong positive link between ATCD and acquisition premium, announcement time combined abnormal return of an acquirer and a target and 2-year acquirer return. The positive linkage on ATCD and acquisition premium indicates that acquiring firms expect more synergies from the transaction with a target that has a contrasting CSR image. The willingness on paying a higher premium portrays acquiring management's confidence in more future synergistic gains from the deal. The further positive relation between ATCD and announcement time combined abnormal return and acquirer 2-

year return ascertain the expected synergistic gain, indicating the market's appreciation and positive expectation on a mutual 'learning effect'.

The final empirical study explores the impacts of CSR on the M&A method of payment. I find a smaller percentage and a decreased likelihood of stock being used as merger currency as ATCD increases. A 10% unit increase in between-firm CSR difference lowers the stock payment percentage by approximately 5%. A greater fraction of stock is preferred as merger currency to show that the seller and the buyer are willing to share future uncertainties and future profits since a lower ATCD implies a lower level of ideological difference; this results in greater reliability between contracting parties. The potential linkage between the aforementioned relations (the negative relation between ATCD and stock payment percentage and the positive relation between ATCD and acquisition announcement time returns) are jointly consistent with current M&A literature on financing decisions and acquisition returns.

Overall, results in this thesis suggest that practitioners could extend their vision on utilizing CSR engagements as a means of communication, as well as a tool to understanding a contracting party in addition to financial indicators. This work would help firms ease out some of the possible impediments in a deal process and help preserve the value of what has been created and ensure that it continues to grow in the combined entity in the future.

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1. INTRODUCTION

1.1. Motivation for the thesis

Over the past ten years, **C**orporate **S**ocial **R**esponsibility (CSR) has increased in importance because of the role it plays in current business models. In the current competitive commercial environment, an increasing number of firms have started promoting their business through Corporate Social Responsibility (CSR) strategies since their shareholders and stakeholders expect them to behave in a sustainable and responsible manner. This is reflected in the 2010 Social Investment Forum's Report where, during the period between 2003 and 2009, the value of socially responsible investment (SRI) funds increased from $2.16 trillion to $3.07 trillion (assets under management). Moreover, there was a dramatic rise in the number of private equity (PE) signatories joining the PRI[1]. This number grew from 2 (2008) to over 150 in 2012, implying an increased significance being attributed to the integration of social and ethical considerations into activities and guidelines. As an example, the KKR Green Portfolio Programme demonstrates that better engagements in social/ethical activities can create value for both shareholders (an owner of shares in a firm) and stakeholders (a person, group or organisation that has interest or concern in an organization).

Driven by the increased importance of CSR engagements in the field of investment management, PwC[2] conducted a survey on behalf of PRI from June to October 2012. The

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[1] PRI stands for 'The Principles for Responsible Investment' which were launched by the UN Secretary-General at the New York Stock Exchange in April 2006.

[2] PwC is a network of firms in 158 countries with close to 169,000 people who are committed to delivering quality in assurance, tax and advisory services. PwC has a market leading Sustainability and Climate Change (S&CC) team and has won UK Consultancy of the Year at the Business Green Leaders Awards. PwC also won Corporate Livewire's Global Sustainability Private Equity Advisor of the Year. With a global network of 700 full time sustainability professionals and a team of more than 100 specialists in the UK, PwC is a leading advisor on

survey focuses on assessing trade buyer's attitudes towards evaluating CSR related risks and opportunities encountered in M&A related activities. The group positions its focus on M&As because the M&A process provides insights about how a firm integrates CSR considerations into their own investment process and gives some indications as to how CSR impacts a trade buyer's returns. It aims to improve the understanding of the relationship between a firm's social and ethical engagements and value creation as well as management of firm risk. Therefore the survey results provide assistance in recognizing how CSR engagements can be material to the investment process and returns.

One of the three key topics in the survey is the integration of environmental, social and governance (ESG) factors into M&A price, sale and purchase agreements (SPA). The majority of firms (63%) consider that the importance of ESG factors has increased in the market for corporate control and three quarters perceive that this trend will continue for the next three years. The survey also presents an increasing trend in integrating ESG factors into M&A due diligence process though there is yet to be an established standard for the consistent application of ESG factors. Most importantly, more than half of the interviewed firms state that their willingness to purchasing a firm and the valuation of a deal can both be significantly negatively impacted by a poor performance on ESG factors. Conclusions drawn from the 2012 PwC survey indicate that there has been a growing awareness of the contribution that CSR engagements make to M&A wealth creation and firm risk management.

The rapid development of corporate social awareness has attracted attention from the academic community as well. Topics on impacts of acquirer and target standalone CSR on acquisition

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sustainability, climate change and green growth. The team works with clients in both the public and private sectors internationally, providing them with policy, strategy, management, reporting and assurance services.

wealth effects have been investigated by Deng *et al.* (2013) and Aktas *et al.* (2011), however, to the best of my knowledge, there is no research focused on the broader process of M&As from a bilateral point of view, *i.e.* from deal initialization to deal finalization.

Previous research has evaluated the impact of both acquirer CSR and target CSR on wealth creation of corporate acquisition events from a unilateral perspective. Signalling theory prompts me to explore implications from the difference/spread between the acquirer and the target CSR score. This suggests the effectiveness of a firm's social ethical performance as a signal depends not only on the information it conveys, but also on the ability of the receiver to interpret that information. In line with signalling models, there is a possibility that the signal may not truthfully portray the characteristics of a sender and the information that a sender wants to deliver. For instance, investors that keep neutral or support shareholder expense views of CSR are less likely to pay a premium for CSR factors. For instance, a CSR aware acquirer would show a different attitude than a CSR neutral acquirer towards a good CSR target, in terms of due diligence, pre-acquisition negotiation process, and related aspects of an acquisition.

 By affiliation, the effects and associated value of CSR engagements on M&A transactions not only depend unilaterally on a firm's CSR image, but also on how this value is perceived by their contracting party. This problem is mitigated when the sender and receiver of the signal share a high level of ideological proximity (Crawford and Sobel, 1982), *e.g.* when they both engage at a high level in CSR activities. As such a unilateral focus on either the acquirer's CSR or the target's CSR when analysing CSR impact on M&As would appear a subjective description, since different contacting parties (receivers) perceive different views on the same social engagements (signal). Therefore, when analysing CSR impacts on M&A events, it would

be more reasonable to utilize a bilateral analysis (ATCD) rather than analysing standalone CSR scores (acquirer CSR score or target CSR score). In this regard, work in this area is far from conclusive, thereby requiring additional research to understand how the financial market and individual investors perceive firms' adoption of corporate social responsibility in their governance.

As an extension of signalling theory, it is natural to think about what happens next between the two parties (the sender and receiver of the signal) after the signal has been received and interpreted. Inter-organizational trust is one of the most important things on the list. It is defined as 'a shared psychological state among organizational members comprising willingness to accept vulnerability based on positive expectations of an organization' by Fulmer and Gelfand (2012) (Page 1174). Shared characteristics between two organizations including business ethics (Kasper-Fuehrer and Ashkanasy, 2001), cultural diversity values (Stahl *et al.*, 2011), holding common principles among organizational members (d'Iribarne, 2003) and a common business understanding (Kasper-Fuehrer and Ashkanasy, 2001) all contribute to build trust between the sender and the receiver of the signal. Moreover, Kasper-Fuehrer and Ashkanasy (2001) point out that inter-organizational trust is higher when organizations are able to effectively communicate their trustworthiness, *e.g.* when they both have awareness of CSR. Extant literature show fragmental evidence in how inter-organizational trust influences M&As, however, there is no systematically conclusion on the regime and magnitude. In this thesis, I will attempt to answer the question of how and to what extent inter-organizational trust influences the deal process and results.

In addition to trust, another important proposition is the learning effect that happens naturally between two parties. Aktas *et al.* (2011) investigate changes of acquirers' social scores and

ratings following acquisitions. An increase in environmental and social performance following the acquisition of a CSR aware target has been documented. It tells a story of the acquirer learning from the target's CSR practice and experience. I will, in this thesis, further explore what promotes this learning effect and whether it is value destroying or creating.

This thesis extends the ideas of signalling theory, while building on mutual trust and learning effects between two parties, to research the impact of ATCD on the entire M&A process, from deal initialization to deal finalization.

1.2.Intended contribution of the thesis

There is yet little work documenting the investigation of the determinants of M&A probability of initiation and completion, premium, method of payment, and wealth effect from the perspective of CSR. This thesis attempts to fill up this gap in the literature. Therefore, findings in this thesis are of great importance in the area of CSR/ M&A research, as they enhance the CSR/ M&A literature by showing the importance of disentangling the various effects that CSR implied business strategy and cultural differences have on the market for corporate control.

When looking at the literature more broadly, two key contributions of this thesis are: (1) it extends the M&A literature by investigating a potentially important additional determining factor of M&A initiation, completion and wealth effects. This is due to low R-squares in most M&A research which thus indicate omitted variables in determining various issues in the field of M&As; (2) it extends the literature on the financial effects of CSR by focusing on one of the largest corporate finance decisions that a firm will have to make.

Specifically, this thesis contributes to the academic literature in three unique areas. Firstly, unlike previous research that focuses either on the impacts of acquirer CSR on acquisitions or target CSR on acquisitions, I adopt the ATCD as my main explanatory variable. This allows me to investigate whether social and ethical similarities of both acquirers and targets influence their decision in choosing a means of payment, the negotiation process and acquirer and target combined returns. Secondly, I extend previous research by encompassing different levels of an M&A deal. Previous papers focus on M&A wealth effects, whereas I elaborate the impact of between-firm CSR difference on M&A method of payment and combined returns. Therefore, my study helps to elucidate the factors that go into determining the choice of M&A payment and the drivers of an acquisition's financial results. Last but not least, to the best of my

knowledge, the dataset in my study is the most chronologically extensive dataset that has been used in the context of the CSR-M&A literature when the analysis is conducted at the deal level.

The findings of this paper highlight and improve my understanding of a bilateral relationship between CSR engagements and cultural aspects of an acquirer and a target, by examining the value creation effects of M&A deals. This research updates existing literature from both M&A and CSR points of views. It is the first to conduct an investigation of the effects of corporate social responsibility (CSR) on the choice of the M&A payment method and the acquisition returns (CARs) of the combined firm. Utilizing the most chronologically extensive dataset that has been used in the context of CSR-M&A literature, I find a lower percentage and a decreased likelihood of stock being used for merger currency as ATCD increases. A 10% unit increase in between-firm CSR difference results in the reduction of stock payment percentage by approximately 5%. A higher fraction of stock is preferred as merger currency as it demonstrates that both seller and buyer are willing to share future uncertainties and profits since a lower ATCD suggests a lower level of ideological difference and thereby results in a higher degree of reliability, between contracting parties.

1.3.Outline of the thesis

The remainder of this thesis is structured as follows.

Chapter 2 presents a review of the relevant literature and describes its relation to this work.

Chapter 3 examines the impacts of CSR on M&A likelihood which is the very first and necessary stage of an M&A deal. Following the above introduction of CSR engagements and their wider implications in Chapter 1, I introduce inter-organizational trust theory as the theoretical foundation of this chapter. Closer CSR scores of two contracting entities indicate a closer ideological state between them and consequently foster trust. I thereby make the conjecture and testable hypothesis: closer ATCD results in higher M&A likelihood. Chapter 3 serves as the first empirical work in the thesis; in Section 3.3, I describe the details of the KLD database that are related to this thesis and the construction of the respective CSR measures. Next I provide summary statistics of data. Since Logistic analysis comprises an important part of empirical analysis, in order to familiarize readers on the framework of Logistic regressions, I explain the discrete choice modelling framework, highlighting its usefulness and appropriateness. Empirical results are presented in the order of impacts of ATCD on M&A initialization likelihood, compatibility matrix, and completion likelihood. P-score matching techniques are utilized to construct a non-deal sample and compare it to deal sample regarding CSR engagements. This 'intuition' is further verified using Logistic analysis framework. In completion likelihood part, both target CSR and ATCD are investigated as an active factor in influencing M&As. I conclude this chapter by performing a series of robustness checks on industrial effects.

In Chapter 4, I extend the investigation of CSR and M&As into premium and announcement time wealth effects. I conjecture that the market will reward higher ATCD combinations of an

acquirer and a target since more synergistic gains are expected from firms' very contrasting CSR images, though these sorts of combinations are more likely to experience a tougher integration process. The outline of this chapter is similar to that of chapter 3: after introduction and background information, I explain the reasoning of hypotheses development. I continue by describing features of data, summary statistics and specification of control variables. Following this, I present research models and empirical results. This chapter then proceeds with a presentation of the output of the main regressions of ATCD on acquisition premiums and announcement time returns. The results of these analyses are particularly revealing for academics and practitioners and are discussed. They are also interpreted and connected with the limited existing evidence from the CSR-MA literature.

An appropriate method of payment can help improve investment performance and release various signals to the market, hence it is of crucial importance for the benefit of both acquiring and selling shareholders. I investigate impacts of ATCD on the acquisition method of payment in Chapter 5. The main hypotheses in this chapter build on the findings of Chapter 3 and Chapter 4: (1) The higher the ATCD, the lower the likelihood of M&As, and the lower the percentage of stock as merger currency as a result of lack of trust; (2) The higher the ATCD, the higher the percentage of cash payment and the higher the announcement time return. Therefore, instead of standing as a standalone chapter that elucidates a negative association between ATCD and usage of stock as merger currency, Chapter 5 continues and completes the research of previous two chapters on M&A likelihood, M&A premium and announcement time abnormal returns. This chapter begins with a discussion on the acquisition method of payment literature as it conveys more information than the payment percentage number itself. The M&A deals used in this study are identical to those used in previous chapters apart from the fact that I obtain an additional set of method of payment statistics. In the empirical study part, univariate

tests, multivariate tests of OLS regressions and Logistic regressions are utilized. The results are consistent with the hypotheses. Chapter 5 closes with robustness tests on redefining a 'stock-deal'.

Even though I provide a brief conclusion at the end of each chapter, a more complete discussion and overall conclusions can be found in Chapter 6, which also outlines possible avenues for future research in CSR-M&As.

2. GENERAL LITERATURE REVIEW

2.1.Introduction

At the introduction section of the literature review, I will provide a spherical overview of the issue under examination which is revolving corporate culture and decision making. I will then come down to a facet of corporate culture, i.e. corporate social and ethical aspects and investigate its impacts on one of the most important corporate decisions – M&As.

2.1.1. The big picture: Corporate culture and decision making

When talking about the most successful firms in the world, a discussion of what contributes to their success will always include their corporate strategy, their organizational culture, a strong and effective management and bright employees. Corporate culture is widely cited as a factor underlying corporate success. Why does corporate culture play a pivotal role in influencing the success of a firm? Hofstede (1991) points out that culture is 'the collective programming of the mind which distinguishes the members of one group or category of people from another'.

Extending from Hofstede (1991), organizational culture includes shared beliefs and values established by the firm's management and communicated to its employees, ultimately influencing employees' behaviours by shaping their perceptions and understanding. There is not a template for 'best culture' for all firms to follow and achieve ultimate success. The best and most beneficial culture for a firm is the one that meet the needs of the organization – a firm's culture can be viewed as its soul and it should serve and shape its body (structure and design of a firm) well. Further to this, extant research does suggest that, if a firm's culture aims to boost its performance and effectiveness, the culture must be a strong one that provides a

strategic competitive advantage and reinforces beliefs and values that upheld the firm (Schwartz and Davis, 1981).

Over the past decades, culture has stayed at the central role of strategic research, as though strategy drives the focus of a firm and culture influences corporate actions in which a firm's strategy lives or dies. Both academics and practitioners have conducted research into the issues of corporate culture and its impacts on various corporate decisions, for example capital structure and M&As. Cao and Mauer (2010) have investigated the empirical effects of corporate culture on capital structure policy and stated that corporate culture exerts significant impacts on capital structure policies. In this study, CEO replacement is employed as a proxy for change in corporate culture, an external CEO appointment is deemed as stronger change than internal CEO promotion in firm culture. They have identified that 'the cultural change brought by new CEOs has a significant impact on the continuity of the firm's existing debt policy' and 'the magnitude and significance of the association between CEO turnovers and the subsequent debt policy changes are much stronger for cases with external CEO replacement'.

Furthermore, a report on 'Cultural issues in mergers and acquisitions' by Deloitte Consulting Group shows the industry perspective of cultural side on M&As. Culture is considered as consisting of 'the long-standing, largely implicit shared values, beliefs, and assumptions that influence behaviour, attitudes, and meaning in a company (or society)'. Various aspects of an acquisition can be greatly influenced by cultural difference inherent in two merging entities. This includes the decision – making style, leadership style, the ability to change, how people work together and beliefs regarding personal 'success' (Deloitte, 2009). The decision makers of the two contracting parties in a merger are humans (*i.e.* the CEOs and the board of shareholders) that are both driven by their shared culture and individual personalities.

Divergence in culture results in potential lack of agreement in the deal process and post-merger integration. When the two firms have difference decision making styles, i.e. the acquiring firm has a top-down decision making system while the target firm has a bottom-up one, it will take longer time to reach consensus and might still result in a failure of making decisions or implementing decisions. Firms with different cultures are likely to have different levels of tolerance to risk and ability to change. An acquirer who is unwilling to take risk is less likely to make changes and be adaptive to a target with different views. Likewise, it is more difficult to integrate a target into the acquirer's system if the target only want to maintain current state and meet current goals.

Apart from influencing corporate decision-makings in various business decisions, there are also studies on whether a firm's performance and effectiveness are impacted by its culture. Kanter (1983) established a direct relation between organisational culture and effectiveness by demonstrating how firms with progressive HR management outperformed those with less progressive systems. Denison and Mishra (1995) employ case studies and survey data to investigate if there exists a relation between organizational culture and effectiveness. They find a positive relation between certain cultural traits (involvement, consistency, adaptability and mission) and corporate performance as well as objective measures, i.e. ROA and sales growth.

In conclusion, this section describes influences of culture on various corporate decisions, from both an academic and industrial point of view. An organization's culture is implicit and reflected in its behaviours, i.e. what has been done and how. It concerns decisions, actions, and communication on different levels within and outside a firm and influences corporate decision-makings in various ways.

2.1.2. CSR influencing M&A - one of the most important corporate decisions

In section 2.1.1, I have introduced literature on establishing a relation between corporate culture and corporate decisions, i.e. capital structure policy, M&As *etc*. I will, in this section, focus on the specific issues of the relationship between CSR and M&As.

As reported in news sources and social media, business activities could be harmful to individuals, communities and society in general. Examples of harmful activities include: incomplete Health and Safety standards affecting the health and safety of employees and customers, and lack of concern for environmental damage *etc*. While there are many factors that contribute to these problems, corporate culture is one of these influents impacting the decision-making. It also conveys the message that such firm culture do not explicitly encourage and promote ethical decision-making because social and ethical conduct is not simply an individual decision that is handed down to employees. Instead, encouragement of CSR conduct can reflect institutional culture and is deemed an attribute of the business itself (McCuddy *et al*., 1993).

Social and ethical (CSR) behaviours are related more to attributes of corporate culture than to attributes of individual employees. This is because an individual can only behave ethically when the individual see things from an ethical point of view and can recognise ethical issues (Chen et al., 1997). Such ethical views are more likely to be gained in a working culture that promotes CSR.

As one of the most dramatic means of corporate restructuring, mergers and acquisitions also provide an important means of transferring corporate resources to where they are better utilized and thereby removing less efficient and underperforming management. The past century saw not only the start-up，development and booming of business activities, but also witnessed the collapse and disappearance of firms. This is best illustrated by the ever-changing composition

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of the Fortune 500, where from 1995 to 2008, there were approximately 2000 firms appearing on the list for one period or more, and only 70 out of the original 500 firms were still on that list at the year 2008 (aggdata.com, 2008).

The academic debate concerning the determinants of acquisition motivation, target prediction, method of payment, acquirer return and various aspects of M&As has been a long standing and controversial one. By far, most studies have focused on investigating impacts of quantitative information on M&As, such as corporate financial information (financial statements). Although this hard information can be captured and measured relatively easily through a firm's financial statements and paperwork and investigated through the use of rigorous scientific methods, it is difficult for them to provide a comprehensive view of the world of M&As. Another delicate qualitative but important issue in influencing M&As, are the ethical and social concerns that may affect the market.

Deal initiation is a starting point to look into this. As highlighted by previous research, one of the common reasons for M&A failure is cultural difference between an acquirer and its target. In order to be successful, the management should conduct due diligence meticulously and consider it in making a decision to 'go ahead' or 'abort'. The Cloetta Fazer merger is a successful merger from this point of view. In the due diligence stage, each aspect of cultural difference was identified and a new and shared corporate culture has been designed and implemented in the post – merger integration stage. Current CSR – M&A literature will be introduced in section 2.5.

In order to first understand the M&A market and then further down to CSR impacts on this market, this literature review is structured as general literature review for M&A (Section 2.2, 2.3 and 2.4) and research on M&A – CSR (Section 2.5). Section 2.2 provides a brief

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introduction to merger and acquisition activities, including general motives for mergers and acquisitions, the six merger waves and their causes. Section 2.3 and 2.4 examines the literature focusing on wealth creation of M&A activities under the competitive business environment, including determinants and patterns of returns and premiums. Section 2.5 will explain the current research on CSR – M&A relationship.

2.2.The general overview of M&A activities

2.2.1.   The six merger waves and two explanations

The occurrence of merger and acquisition activities could be attributed to numerous reasons which have been varying with the change of time and the business environment. Documented in the existing body of literature, the pursuit of synergy, which is a rather easy-to-understand notion according to which the combination of two entities would perform better and create more value for shareholders than the two firms operate separately, is the most commonly cited prevalent driver of transactions. Berkovitch and Narayanan (1993) show that synergy is the primary motive in takeovers with positive gains. This is demostrated by two cases in bank mergers. By studying a sample of the largest bank mergers, Houston *et al.* (2001) obtain the management estimation of projected cost savings and revenue enhancements, finding that those mergers lead to a favourable revaluation of acquirer and target stock price, and the majority of the positive revaluation should be attributed to estimated cost savings, *i.e.* operating synergies, rather than the revenue enhancements. DeLong (2003) studied 54 bank mergers announced between 1991 and 1995, and pointed out three circumstances where bank mergers would improve long term performance. One of them is when the acquirer is less efficient than the target, *i.e.* the acquisition target helps to promote operating synergy and therefore helps the improve long term performance. Other motives like business diversification, strategic realignment, tax consideration and, increased market share are also prominent M&A motives.

Despite single M&A deal motivations, it is also meaningful to have a discussion on the clustering of M&A activities. Commencing in the late 1890s, we observe 6 multiyear surges and downfalls of M&A activities which are motivated by factors ranging from synergies to mismanagement: those of the early 1900s, the 1920s, the 1960s, the 1980s, the 1990s and the

most recent one beginning in 2003 and that came to an end in late 2007. Two competing theories attempt to provide explanations for the clustering of M&A activities, *i.e.* the six merger waves: the neoclassical view and the behavioural view (Martynova and Renneboog, 2008).

2.2.1.1.The neoclassical view of the six merger waves

The neoclassical view asserts that the ownership of assets would be naturally driven by the profit motive of the acquirers to the place where they could produce the most value (Ahern and Weston, 2007). Accordingly, in theory, the acquirer's shareholder will be better off from such value- enhancing transactions. Hence, if regulatory changes, technological changes or any other changes render the existing ownership of assets become no longer, M&A activities would take place to reallocate the ownership to achieve the best utilization of assets of the combined entity (Ron Masulis, 2011). These two factors force growth opportunities and create threats to business lines of firms, thereby facilitating M&A activities to take place. Gort (1969), Mitchell and Mulherin (1996), Andrade *et al.* (2001), and Andrade and Stafford (2004) provide evidence that firms react to shocks in the operating environment, leading to a higher level of competition for resources. The number of industries affected and the extent to which they are affected determine the size and the length of the M&A wave. As a response to shocks, firms often acquire either all or part of other firms within the industry.

Strategic realignment is a strategy whereby firms adjust themselves to such changes in the external environment (Harford, 2005). For instance, many scholars provide empirical evidence that the volume of M&A activities is significantly higher in deregulated industries than in regulated ones (Mitchell and Mulherin, 1996, Jensen, 1993), simply because artificially regulated industries impose barriers to entry or exit and therefore decrease competition (Mulherin and Boone, 2000). Moreover, as technological changes create revolutions in an

industry or even create new product lines and new industries (Harford, 2005), M&As driven by technological changes are regarded as creating new products or industries made possible by technological advancements. For example, it is possible for a firm to obtain a target that holds a more advanced technological skill, which may be less costly to acquire than to be developed by the acquirer itself.

Moreover, Harford (2005) takes into consideration the macro-level capital liquidity to accommodate the necessary transactions. I will explain this capital liquidity factor in the following comparative paragraph.

2.2.1.2.The behavioural view of the six merger waves

The behavioural view refers to the situation that in an inefficient market, rational managers exploit pricing errors and take advantage of it by buying undervalued or less overvalued assets using relatively overvalued stock. Rhodes-Kropf and Viswanathan (2004) and Shleifer and Vishny (2003) support this point and provide evidence that managers would choose to acquire firms whose stock is undervalued or less overvalued if they believe their stock is overvalued. In the model proposed by Shleifer and Vishny (2003), they use the neoclassical view to explain who acquires whom, the method of payment, valuation consequence of mergers and merger waves. They claim that overvalued acquirers will choose stock as payment method in order to change their overvalued 'equity currency' into undervalued or less overvalued hard assets. As such, stock market driven acquisitions are clustered during periods when stock market valuation is high per se compared to historical levels. This is well established by the fifth merger wave which was clustered in the late 1990s. In line with low interest rates and a rising stock market associated with a booming economy, both volume and total deal size of U.S. and global M&A deals reached its historical peak.

Many studies identify the existence of a positive correlation between market valuations and the number of M&A deals (Dong *et al.*, 2006, Andrade *et al.*, 2001, Holmstrom and Kaplan, 2001, Daniel *et al.*, 1998); moreover, Dong *et al.* (2006) and Jovanovic and Rousseau (2002) relate this phenomenon to Tobin's Q theory. Tobin's Q theory suggests that, a firm's market valuation status can be measured by the ratio between the market value and the replacement value of the same physical asset (Brainard and Tobin, 1968). If a firm wants to expand its business, it may choose to acquire a target firm whose q ratio is less than 1, *i.e.* whose market value is less than the replacement cost of assets, rather than directly buying plant and equipment at their market value. Dong *et al.* (2006) investigate the Q theories for takeovers using pre-offer market valuations (P/B, P/V), observing consistent evidence with the Q hypothesis especially in the pre-1990 period: bidders are more likely to be highly valued than their targets. This is a profitable way for acquirers as they are converting their 'high - inflated equity' into 'deflated assets'. Given this profitability, the relationship between a firm's investment rate (probability of conducting M&A activities) and its Q ratio is positive (Jovanovic and Rousseau, 2002).

To compare the two theories, Harford (2005) examined whether the aggregate clustering of M&A transactions should be attributed to the neoclassical view or the behavioural view. As the first academic paper to distinguish the two motives, he takes into consideration the macro-level capital liquidity to accommodate the necessary transactions. He provides evidence to support the view that certain kinds of industry shocks in connection with capital liquidity cause the clustering of M&A transactions, and that the latter is not due to market timing as per the behavioural view (Harford, 2005). This means that only shocks themselves are less possible to facilitate merger waves without sufficient liquidity of capital to finance the transactions. Moreover, a certain low cost of capital would induce a boom of M&A deals, even in the

absence of industry shocks. To conclude, Harford (2005) confirms the availability of capital liquidity as an extremely significant factor in facilitating a merger wave.

2.3. Acquiring firms' return

Over the past 40 years, there has been a mountain of research regarding the profitability of M&As. However, it is still not clear to answer whether M&As are value- enhancing or not to acquiring shareholders. The answer seems to depend on various firm and deal characteristics, such as acquiring firm size (Moeller *et al.*, 2004).

A majority of the existing literature suggests that, at best, acquiring shareholders do not lose around the announcement date; in many cases, mergers and acquisitions are harmful to an acquirer's wealth, *i.e.* represent a negative net present value investment. Moeller *et al.* (2005) report that acquiring firm shareholders suffer a 12 percent loss per dollar on average around the acquisition date, over the four years between 1998 and 2001, the aggregate loss amount being close to $240 billion. This is not a special case due to the Internet bubble, the 1980s witnessed a total loss of $7 billion as well (Moeller *et al.*, 2005). Grubb and Lamb (2000) describe this puzzling phenomenon as 'The sobering reality is that only about 20 percent of all mergers really succeed. Most mergers typically erode shareholder wealth… the code, hard reality that most mergers fail to achieve any real financial returns… very high rate of merger failure… rampant merger failure.' Ron Masulis (2011) attribute this commonly reported unprofitability to equity signalling and revelation biases and further examine the acquirer return based on the exclusion of these two endogenous reasons. In their case, takeovers are confirmed to be beneficial to acquiring shareholders in the form of synergistic gains.

With regards to the measurement of shareholder gains or losses, Zola and Meier (2008) study 88 empirical studies between 1970 and 2006, finding the usage of 12 approaches to measure the wealth creation or damage of the merger of acquiring shareholders. A majority of those studies focus on investigating premerger returns, employing the event study methodology,

while 28 percent of them focus on post-merger returns, utilizing long - term accounting measures. The most popular approach is to examine abnormal stock returns around the announcement date of both acquirer and target; this is Dodd and Warner (1983)'s event study methodology and is adopted by most studies.

In this part, I will present an overview of the effects of various characteristics on acquirer returns from the existing literature.

2.3.1. Listing status of target

Moeller *et al.* (2005), Fuller *et al.* (2002), Ang and Kohers (2001) and Chang (1998) suggest that U.S. acquirers who acquire private targets or subsidiaries of public firms often enjoy positive abnormal return, ranging from 1.5- 2.6 percent. For U.K. acquirers, it is also true that private targets and subsidiaries are more likely to bring positive excess returns to acquirers (Draper and Paudyal, 2006). In the analysis on 17 western European counties conducted by Faccio *et al.* (2006), it is suggested that acquirers of publicly traded firms suffer a significantly negative abnormal return of 0.38 percent between 1996 and 2001, while acquirers of private firms and subsidiaries earn a statistically significant abnormal return of 1.48 percent. Faccio *et al.* (2006) also point out that the impact of listing status persists through time and across countries and even after controlling for several variables

As a conflicting hypothesis, a publicly listed target allows bidders to detect if there is any misvaluation and can take advantage if there is any. Since normally a firm will choose the most profitable way to expand, a misvalued target will award the acquirer the opportunity to gain in theory. However, why do we see different results in empirical studies?

There are six explanations attempting to explain why unlisted targets are associated with positive abnormal returns and listed ones are not. First, Chang (1998) proposed the monitoring benefits that states that the creation of large new blockholders from stock payments will provide a better monitoring on the combined entity's management, which will enhance the wealth of the combined entity in the future. Second, liquidity discount, examined by Fuller *et al.* (2002), indicates that an unlisted target is less possible and profitable to be sold in secondary market compared with listed ones; therefore, it is reasonable for private firms or unlisted subsidiaries to compensate the acquirer for this lack of liquidity. Third, Hansen and Lott (1996) suggest the diversification discount in explaining higher returns when purchasing private firms; this is tested by Fuller *et al.* (2002) by employing 539 unique acquirers making over 3000 bids, and they only find statistically weak evidence in supporting this hypothesis. Fourth, owners of private firms often use M&A as an exit strategy for retirement purposes or to pursue other interests, therefore, they are inclined to agree to a lower selling price of the firm (Poulsen and Stegemoller, 2007, Officer, 2007, Faccio and Masulis, 2005). Fifth, the lower selling price may be attributed to the owners' naivety. Unlisted assets are more difficult to value, especially intangible assets and off-balance sheet liabilities, if the owner lacks financial knowledge, or has a unique preference of the bidder; they may therefore accept a relatively lower price than the actual value of assets(Capron and Shen, 2007). The sixth reason is competition and the so-called Winner's curse. Intuitively, it is not elusive that a listed target is more likely to see multiple bids in the bidding process as it is easier to have access to information of listed firms (Bradley *et al.*, 1988, Jarrell and Poulsen, 1989). Given the highly competitive bidding process of listed targets, Capen *et al.* (1971) points out that the winner is likely to be the bidder who most overestimates the value of the target firm.

As a result of these reasons, acquirers of unlisted firms are very likely to receive a discount on the actual value of targets, which allows them to accrue more abnormal return compared to buying listed firms.

2.3.2. Method of payment

Method of payment is well documented as a determinant in explaining acquiring shareholder returns.

During the largest merger wave in the late 1990s, a positive correlation between stock price level and M&A activities had been observed. A majority of deals in the fifth merger wave chose equity as the mode of payment, and most of these equities are richly priced compared to their historical price. In an inefficient market, assets often deviate from their underlying economic value, as it was the case during the Internet bubble in the late 1990s, in which period the stock market valuation was very high. Under this circumstance, overvalued firms are very likely to undertake M&As in order to take advantage of their overvalued equities, while undervalued firms or relatively less overvalued firms are more likely to become M&A targets (Shleifer and Vishny, 2003). Acquiring firms are motivated by the opportunity to use overvalued assets as M&A currency to exchange for undervalued or less overvalued hard assets, as long as the acquirer is more highly valued than targets (Dong *et al.*, 2006). This phenomenon brings us to the point that overvalued bidders tend to use stock as method of payment as long as the targets' equity is less overvalued (Ang and Cheng, 2003).

For public targets, both method of payment itself and the signalling effect it brings will influence acquirer returns. If a manager believes their stock price is overvalued, he will choose to issue stock to finance the transaction; under the situation of information asymmetries, the

firm will profit from such stock issuance (Myers and Majluf, 1984). However, over time, investors learn from the market and attempt to react to such stock issuance by selling their stock which will result in a fall of stock price. Applying this concept to M&A market, we would observe a share price fall of acquiring firm right after the deal announcement because it signals the message that the acquiring firm is overvalued to the market. Therefore, some firms tend to choose cash as method of payment to signal their value to the market (Myers and Majluf, 1984), simply because investors treat stock-financed firms as overvalued ones (Shleifer and Vishny, 2003, Esty and Megginson, 2003, Heron and Lie, 2002, Linn and Switzer, 2001, Walker, 2000).

Another cause for the share price fall of acquirers around announcement is that the acquirer's announcement period gain associated with stock payment usually disappears within three to five years (Black *et al.*, 2007, Agrawal *et al.*, 1999, Rau and Vermaelen, 1998, Loughran and Vijh, 1997), implying that shareholders will realize the best profit only if they sell their shares at the announcement time. Moeller *et al.* (2007) also find consistent evidence to support the equity signalling theory, showing that abnormal returns to acquirers are negatively related with stock offers but something not true for cash offers

Regarding long- term returns, the existing literature before 2009 tends to support a continuous underperformance of acquirers, however, recent studies turn out produce opposite results. Dating back to the late 1990s, by adopting both the event- time portfolio approach and calendar- time portfolio approach, similar results are established, *i.e.* that acquirers with stock payment realize negative long- term abnormal returns between 1978 and 2003 (Loughran and Vijh, 1997, Rau and Vermaelen, 1998, Mitchell and Stafford, 2000). Combined with the negative announcement period return, stock acquirers appear to document negative returns both upon announcement and over longer horizons. By excluding endogenously failed acquisitions, *e.g.*

those with a subsequent fall of overpriced equity, Savor and Lu (2009) find that successful stock-financed acquirers suffer significantly negative returns, failed acquirers suffer more, and the exact number increases with the widening of the time horizon (1, 2, 3 years). This finding shows that stock acquisitions benefit long-term shareholders. The authors attribute this phenomenon to acquirers' successfully converting overpriced shares to real assets, which is consistent with the market timing hypothesis.

Following Savor and Lu (2009), Ron Masulis (2011) include a longer observation period between bid announcement and bid failure announcement; this is different from Savor and Lu (2009) who assume the absence of synergistic gains. They report takeovers as a value-enhancing transaction to acquirers, accruing a substantial return on capital of 21% utilizing a 60- day initial bid announcement window and a 100- day period following the termination announcement. Two findings support this conclusion. Firstly, the combined value of acquirer and target fall following a failed acquisition announcement, leading to negative abnormal returns for both. Secondly, there appears a positive relationship between acquirer and target returns, meaning that acquirers share an important portion of gains with their targets.

For private targets, stock payment often exhibits positive abnormal returns, while cash payment is likely to lead to zero abnormal returns (Chang, 1998). In that paper, Chang (1998) proposes three hypotheses in explaining the wealth effects of stock payment. They are the limited competition hypothesis, the monitoring hypothesis, and the information hypothesis. The positive abnormal return associated with stock payment in private target deals are attributed mainly to the creation of large blockholders who will provide better monitoring of the management of the combined entity and result in a better performance. Despite monitoring benefits, Fuller *et al.* (2002) confirm that tax benefits also explain larger gains when employing

stock as payment method. If structured properly, *e.g.* choose stock as the method of payment, the capital gain obtained by the target shareholders is deferred until they sell their shares; in this case, normally the target will give the acquirer a tax discount. This discount on the purchasing price decreases the probability of overpayment and thus enables the acquirer to gain more with the payment of stock for a private target. On the contrary, if the transaction is not tax free, the target will require a higher purchase price to compensate for the tax liability (Ayers *et al.*, 2003).

Eckbo and Thorburn (2000) suggest that if there is uncertainty on the bidder's value, the bidder should make cash offer, and if there is uncertainty on target's value, bidder should make stock bids because stock bids can spread the risk of overpayment.

2.3.3. Acquirer size, target size and post-merger integration, and relative size

By comparing average announcement period abnormal returns and equally weighted abnormal announcement returns, Moeller *et al.* (2004) identify the existence of size effect in acquirer announcement returns that is approximately two percentage points higher for small acquirers. This size effect is statistically robust in the 1980s and 1990s, regardless of the form of financing and the listing status of the target. They attribute the size effect to managerial hubris which explains why large firms pay higher acquisition premiums and thereby report negative synergy gains in the transaction. Moeller *et al.* (2005) support this result with new evidence by employing a sample between 1980 and 2001, again finding that large firms destroy shareholder value with 1.55 percent lower announcement period abnormal returns than comparable transactions made by small firms.

Gorton *et al.* (2009) also demonstrate the negative relationship between acquirer size and announcement period abnormal return. He explains it in two ways. First, managers use M&A to avoid losing private benefits and they are taking advantage of the consequence of such 'defensive acquisitions'. Since managerial bonuses and compensations are frequently related to the size of the deal, managers are thus motivated to benefit themselves from large size deals. Moreover, the existence of agency conflicts tends to exacerbate this phenomenon. Second, the so-called 'positioning acquisitions' are undertaken by firms in order to make themselves more attractive as takeover targets to obtain a better price. Given the fact that a firm which possesses a larger market share will enjoy a stronger pricing power and market power, and thus has better negotiating position as a target, 'positioning' acquirers make large deals to re- position themselves to obtain a better position. Therefore they distinguish themselves from peers by the relatively monopoly position and become a unique takeover target with no substitute firms. Moreover, Ghosh (2001) find that compared with pre- acquisition market share levels, market shares of merging firms increase by more than 30%, and there is a positive relationship between abnormal returns and market share around announcement. He also finds that with the increase of market share, there are increases in the acquirers' long run profitability. This improved profitability also helps to attract more bidders.

On the other hand, target absolute size and target relative size also play a role in influencing acquirer returns. Hackbarth and Morellec (2008) suggest that a larger target size or relative size to the acquirer (the larger the deal) will result in a lower post- merger stock price of acquiring firms. Conversely, small size targets tend to provide positive abnormal returns to acquirers. An example is the high-tech industry; firms in that industry tend to acquire relatively small businesses to fill the gaps in their product lines. Frick and Torres (2002) report an average 39

percent annual total return of high-tech firms who acquire targets that are roughly 1 percent of their market value.

There are several reasons for the negative abnormal returns when target size is large or target relative size is large. A lower post-merger stock price of acquiring firms associated with larger target size, suggests it is more difficult to integrate a larger firm into the acquirer's business. To reconcile potential conflicts inherent in acquiring firms and target firms is costly and difficult, especially when a large size target has its own complete company culture and business strategy. Operational as well as financial performance of the combined entity is therefore negatively affected. Here it also confirms that post- merger integration caused by either hubris or large target size is a convincing reason for M&A failure (Hackbarth and Morellec, 2008). Moreover, as mentioned above, the larger the target or the larger the target is relative to the acquirer, the stronger the target's negotiating position and ability to extract gains from the acquirer. To some extent, target size is positively correlated with its market power and negatively correlated with its substitutability. The acquirer has to pay a higher price for the uniqueness and affiliated attractive market power of the target. Also, a larger size firm is more likely a firm with mature and well- developed skills in that industry which is also valuable for the acquirer.

Fuller *et al.* (2002) extend the size effect to examine the effect when partitioning target firms into public and private. They examine 539 U.S. acquirers making 3135 bids between 1990 and 2000, utilizing an event type methodology to obtain announcement abnormal returns. Targets are divided into four groups based on their relative size that is defined by target market value divided by acquirer market value (less than 5 percent, 5 percent to 9.99 percent, 10 percent to 19.99 percent and more than 20 percent). For private firms and subsidiaries, results exhibit

differences compared with results of public targets. There is a statistically significant increasing trend of abnormal returns associated with increasing relative size regardless of method of payment, which contradicts the results from public targets. They provide similar explanations for the negative abnormal returns for large public targets, and attribute the difference of private and subsidiary targets to the existence of fundamental differences of the division of gains from listed and unlisted targets, *i.e.* partially a liquidity effect. Since unlisted firms cannot be sold and bought as easily as listed ones, this lack of liquidity makes private target deals less valuable and less attractive. Further, as ownership is often more concentrated in privately owned firms, in stock acquisitions, a larger size private target will eventually enable the creation of a large blockholder in the combined entity that will provide monitoring on managerial aspects. This is consistent with the monitoring benefits mentioned in Section 2.1.

2.3.4. Capital structure of acquirer

Past literature provides intuitions of the relationship between capital structure and companies' acquisition propensity.

By using data of large mergers that happened during 1962-1982, 389 acquisitions of all types over the period 1982-1986, and 173 acquisitions over the period 1978-1990, Maloney *et al.* (1993) investigated the influence of leverage on decision making, through looking at the relationship between announcement period acquirer returns and the leverage of the acquirer. Their results are in support of the idea that leverage enhances decision making, *i.e.* higher leverage results in better corporate investment decision making. This positive relation between leverage and acquirer announcement returns should not be interpreted as a reflection that an increase of leverage equals increase of returns. To further interpret this relationship, they compare and contrast two competing explanatory theories, the debt-monitoring hypothesis

(benefits of high leverage) and the financial slack theory (benefits of low leverage). The debt-monitoring hypothesis could largely explain this positive relation between leverage and acquirer announcement return. The point is, agency problems exist and debt markets reduce managerial discretion. Agency costs are therefore mitigated because of disciplined management.

Besides relative capital structure (compared with others) and its impacts on M&A activities, we should also notice the interdependence of corporate leverage deficit (derivation from a firm's own target capital structure) and the corporate acquisition behaviour. In the presence of financial frictions, companies often deviate from their optimal (target) capital structures (Leary and Roberts, 2005, Frank and Goyal, 2009). Firms having leverages above their optimal (target) levels are normally deemed overleveraged while those with leverages below their optimal levels, are called underleveraged. Harford *et al.* (2009) provide evidence on whether firms have target capital structures. They define the leverage deviation as the actual debt ratio minus its predicted debt ratio. They study 1188 takeovers between 1981 and 2000 in which the target firm is at least 20% of the bidder's size. Their analysis shed light on how their deviations from target capital structure affect their choice of method of payment when involved in financing an acquisition and their capital structure adjustment following the acquisition. Uysal (2011) also shows that leverage deviations from firms' own optimal capital structure influence the acquisition propensity. He goes beyond Harford *et al.* (2009) by examining the role of leverage deficit in a firm's ability to make acquisitions and in its acquisition choices. He employs more recent data from 1990 to 2007 to estimate the target debt ratio, defining leverage deficit as the difference between actual leverage and predicted leverage. A two- step estimation procedure is utilized to examine the role of leverage deficit on acquisition choices. In the first step, the target leverage ratio is estimated by running annual regressions of leverage ratios on the main

determinants of capital structure considered in prior studies. In the second step, regressions are performed to examine whether the deviation from the predicted target capital structure affects a firm's acquisition decisions. This study provides novel evidence on the interdependence of financing and investment decisions: a firm's leverage deficit affects both its ability to make acquisitions and the quality of its acquisitions. Specifically, overleverage is an impediment to pursuing acquisition opportunities, but overleveraged acquirers undertake more value-enhancing acquisitions

Leverages might be correlated with growth opportunities and stock overvaluation as well, which influence payment methods in acquisitions, thereby influencing acquirer returns (Martin, 1996, Shleifer and Vishny, 2003).

2.4. Acquisition premium and Target firm's return

Compared with acquirer returns, the majority of the literature is more optimistic about targets' returns. It is reported that total shareholder gain around the announcement date is significantly positive, and most of the gains accrue to target shareholders (Dodd and Ruback, 1977, Jarrell *et al.*, 1988, Andrade *et al.*, 2001, Fuller *et al.*, 2002, Bauguess *et al.*, 2009). In other words, M&A deals are very likely to accrue positive return to target shareholders in both successful and unsuccessful deals.

2.4.1. Successful deals

Several theories provide explanation for this positive return phenomenon for successful deals. The most convincing and straightforward one is the increasingly fierce competition in the bidding process; Bhagat *et al.* (2005) report a steadily upward trend of tender offer abnormal returns over time, which provides supportive evidence for acquirers' offering a substantial premium to pre-empt other potential bidders and the possibility of revising the initial offer price to win the deal. Secondly, increasing takeover defense of targets and antitakeover provisions of acquirers contribute to the overpayment of premiums. For example, as the most famous form of antitakeover mechanism, the adoption of poison pills will result in a significant increase of bid prices (Heron and Lie, 2006). Masulis *et al.* (2007) proposed the anti- takeover value destruction hypothesis, showing that firms protected by anti- takeover provisions are more likely to participate in value- destroying acquisitions, *e.g.* overpayment, since they are less likely to be disciplined for taking such actions by others, *i.e.* being acquired.

2.4.2. Unsuccessful deals

With regards to unsuccessful deals, *i.e.* the bids are not accepted and eventually withdrawn, target shareholders are also very likely to realize significant returns around the deal

announcement (Masulis *et al.*, 2007). However, much of the returns reflected in share price increase will disappear if there are no other bidders. It has been documented that the immediate increase in return around the announcement dissipates in one year's time in an unsuccessful bid (Akhigbe *et al.*, 2000, Asquith, 1983, Bradley *et al.*, 1988, Sullivan *et al.*, 1994).

2.5. CSR – M&A story

From the above literature review with regards to motivations, wealth effects and other aspects of M&As, we understand that M&As, as one of the most important corporate investment decisions, have attracted thousands of research over the past 40 years. However, few of them have initiated any investigation from the perspective of social and ethical aspects. The study of the linkage between CSR and M&As help us in answering the question of whether CSR is value enhancing to a firm, and in understanding the importance of CSR in the business environment through M&As. By far, there are two researches published on investigating the linkage between CSR and M&As from an acquiring firm's perspective and target firm perspective respectively.

2.5.1. Target CSR impacts on M&A returns

Aktas *et al.* (2011) identified a positive relation between acquirer announcement time returns and the level of the target's Intangible Value Assessment (IVA) ratings in his paper titled 'Do financial markets care about SRI? Evidence from mergers and acquisitions'. IVA rating provides a measure of a firm's ability to cope with social and environmental risks. They have proposed that Social Responsible Investment (SRI) is value enhancing as *'acquiring a socially responsible firm could be a signal, sent by the acquirer, about willingness to learn from the target on how to increase or maintain social and environmental screening and manage social and environmental risks'* and SRI is value destroying as *'positive announcement returns imply that the acquirer may reverse the value destroying SRI activities of the target'*. They proved that the value enhancing hypothesis is right and a further learning hypothesis to explain this as *'positive announcement returns imply that the acquirer learns from the target's SRI practices'*.

A dataset of 106 deals over an 11-year period from January 1, 1997 to December 31, 2007 is utilized for this research. Both the acquirer and the target are listed firms, the status of M&A deal is completed, the deal size is above $1 million and the target is fully owned by the acquirer after the transaction. Each deal is matched to IVA ratings for both acquirer and target. This filter has reduced the sample size from 6230 to 129 deals. Event study approach is then used to calculate announcement period returns for each deal. Multivariate regression is applied with announcement time return as dependent variables, target IVA ratings and various control variables as independent variable. Results show that an increase in the target IVA rating by 1 unit leads to an increase in the acquirer's cumulative abnormal return (CAR) by 0.9%. Economically, this corresponds to a change in abnormal returns of $0.9 million in market value for each $100 million equity owned by an acquirer.

They study the evolution of the acquirer's rating after the deal to assess whether the acquirer learning hypothesis is at play in the sample. A positive association is identified between the changes in acquirer rating following the deal decision and the rating spread between the acquirer and its target. This result supports the acquirer learning hypothesis from the target's SRI practise and experiences and SRI benefits shareholders.

2.5.2. Acquirer CSR impacts on M&A returns

Another paper with regards to CSR – M&A, titled 'Corporate Social Responsibility and Stakeholder Value Maximization: Evidence from Mergers' by Deng *et al.* (2013), investigates whether CSR creates value for acquiring firm shareholders through studying acquirers with different ratings from KLD Research & Analytics (KLD). They conclude that *'acquirers' social performance is an important determinant of merger performance and the probability of its completion, and support the stakeholder value maximization view of stakeholder theory'.*

Specifically, high CSR acquirers realize *'higher merger announcement returns, higher announcement returns on the value-weighted portfolio of the acquirer and the target, and larger increases in post-merger long-term operating performance'* and the deal takes less time to finish and are more likely to complete than low CSR acquirers.

They utilize a much larger dataset compared to Aktas *et al.* (2011). The sample consists of 1556 completed U.S. mergers with acquiring firm's KLD ratings available from 1992 to 2007. Target CSR ratings are not necessary as the focus is on studying acquiring firm impacts on acquisition returns. From multivariate analyses, they find strong evidence to support a positive relation between the acquiring firm's CSR and merger returns (acquiring firm announcement time returns, the announcement returns on the value-weighted portfolio of the acquirer and the target, and post-merger operating performance and long-term stock returns).

However, though the results are statistically significant, they did not control for target CSR ratings in their research framework. The reader may argue that, higher CSR acquirers realise higher returns since they are acquiring a high CSR target as Aktas *et al.* (2011) suggests a positive relation between target CSR rating and acquiring returns.

In this thesis, I will incorporate both acquirer and target CSR ratings in analysis to study.

2.6.Conclusion

In this very competitive business environment, a firm has easily been eliminated through corporate restructuring activities, *e.g.* merger, acquisition, bankruptcy. Among them, mergers and acquisitions represent an important change agent. There are numerous motives of M&A activities. Among them, the pursuit of operating and financial synergies is the most common rationale. Diversification, on the face of it, is a strategy of spreading risk among more product lines, however, it is also used as a means to establish managerial entrenchment. In a diversification deal, managers gain more power in corporate governance. This further encourages us to explore the role of corporate governance in influencing acquirer returns. Strategic realignment refers to firm's adjustment to the changes in their external business environment, *e.g.* regulatory change, technological innovation *etc*. Regarding the six merger waves, most studies attribute them to the neoclassical explanation, which asserts that industry shocks help channel resources to their best use, assuming the market can provide sufficient liquidity to support the financing of deals.

Overall, studies show that, around the announcement period, M&A activities pay off for target firms and at best accrue zero abnormal returns to acquirers. For a longer period, *e.g.* three to five years, there is no unanimous consensus regarding shareholder wealth effects because it is subject to many uncertainties. As shown, acquirer abnormal returns are affected by numerous reasons, the most important ones being the method of payment, type of acquirer, size of acquirer and target, and CEO of the acquirer. Acquirers of unlisted targets (private firms and subsidiaries of listed firms) realize significantly higher abnormal returns than acquirers of acquiring public targets. Cash payment is usually more profitable in the U.S. and for private targets, while stock payment is good for European acquirers, public targets and when there is uncertainty of the targets' value. Moreover, from a behavioral point of view, the CEO of an

acquiring firm plays an increasingly important role in influencing the acquirer's returns. With regards to target returns, the established consensus is that M&A targets realize positive abnormal returns around the deal announcement for both successful and unsuccessful deals. The most consistent explanation for this phenomenon is the natural competition inherent in the market for corporate control.

A trend among existing literature is that, in more recent studies, there tends to be more emphasis on CEOs' behavioural aspects and its influence on the fundamental characteristics of a firm, such as capital structure, q ratio and so on. This behavioural aspect mainly refers to the inherent agency problem which seems impossible to be removed from established management bureaucracy and hierarchy. The influence of agency problems per se on influencing the decision- making process of an M&A's transaction is complicated, but it is only the tip of the iceberg. Rather, the chain reaction caused by agency problems in the operations and financial processes of a firm is especially noteworthy. For instance, agency problems are a partial determinant of Tobin's Q which is subsequently directly correlated with a firm's investment rate. The board of shareholders does realize the harmfulness brought by this principle and agent conflicts and attempt to resolve it by aligning management's interests with shareholders' through equity bonus and compensation. This in turn relates the M&A mechanism and M&A wealth effects to the corporate governance mechanism.

For the direction of further research on CSR - M&A, Aktas *et al.* (2011) suggest that, *'using a broader sample of M&A deals, it would be interesting to complement the short-term event study with an analysis of acquirer's long-term financial and operational performance'*. In this thesis, I will improve the size of sample by stretching the sample period to 20 years, *i.e.* January 1, 1992 to December 31, 2012. I will also investigate both short term returns and longer term

returns for the acquiring firm. All these extensions will help to elaborate the CSR – M&A linkage.

3. THE IMPACT OF CORPORATE SOCIAL RESPONSIBILITY ON M&A LIKELIHOOD

3.1.Introduction

Previous discussions on the perceived importance of CSR practice pose the question of if and how ATCD influences various aspects of the market for corporate control. The answer to this question is important for understanding how corporate social ethical engagements impact acquirer-target mutual trust, and as a result directly influence M&A likelihood. In practice, a third of the interviewed firms, in the 2012 PwC survey, favour CSR engagements as a reputation and brand-adding factor, while the remaining two thirds of the interviewees deem CSR disadvantage and an impediment for the willingness to do a deal.

Since CSR reflects the moral character of a firm, a CSR aware firm delivers their commitment to behave honestly (Rode, 2010) and avoids opportunism in future operations, thereby reducing the monitoring costs of the contracting parties. Furthermore, trustworthiness, as implied by CSR engagements, helps to maximize shareholder value in a consistent manner. This is summarized in a simple statement '*good deeds earn chits*' (Godfrey, 2005). Connected to this, positive moral capital is generated among communities and stakeholders by corporate social and ethical engagements. This moral capital contributes to shareholder wealth by '*providing shareholders with insurance-like protection for a firm's relationship-based intangible assets*'(Godfrey, 2005). Consider the examples of loan rates settings; Kim *et al.* (2014) show the importance of a borrower's ethical behaviour in the banks' consideration of loosening financing conditions when there is similarity of lenders and borrowers along their ethical domain.

I conjecture that M&A likelihood is influenced by CSR engagements as the latter are crucial in signalling a firm's trustworthiness and building a positive firm image (Jones, 1995, Bews and Rossouw, 2002, Fulmer and Gelfand, 2012). As a result of a more trustworthy firm's image and increased informational transparency, a firm with good CSR enjoys increased trust from its business partners (Kim *et al.*, 2014). However, as I discussed in the thesis motivation part (section 1.1), the effectiveness of a firm's social ethical performance as a signal depends not only on the information it conveys, but also on the ability of the receiver to interpret this information. It becomes more reasonable to employ absolute ATCD as a variable when examining CSR impacts on the market for corporate control, rather than looking at standalone value of a deal buyer or seller. The key variable 'ATCD' reports the absolute CSR difference between an acquirer and its target in terms of corporate social responsibility; however, it does not distinguish between the two possible scenarios (an acquirer is less socially responsible than its target and an acquirer behaves better regarding social aspects).

Therefore, broadly, we posit that ATCD and its associated implications, *e.g.* trustworthiness, play an important role in the market for corporate control. I now proceed to specify these possible influences on acquisitions. As pointed out in the PwC survey, the ease of post-acquisition integration of corporate social factors, *i.e.* standardizing management control, policies, procedures and operating systems, is regarded as a key factor in influencing the willingness to do a deal and possibly the result of the deal. *'A large number of interviewed firms mention that the cost and difficulty of bringing a target firm up to the trade buyer's standards with regards to managing ESG factors is a significant consideration in the deal process. A number of companies stated that their willingness to do the deal would be seriously impacted if the potential risks and costs are unclear, and if it appears to be too difficult or*

expensive to bring the target company up to their own internal standards on ESG factors[3]'. For instance, when there is a significant CSR difference between an acquirer and a target, their willingness to participate in a deal would be impacted.

However, the awareness of the corporate cultural aspects represented by CSR may not be as clearly defined during due diligence in comparison to financial status and business lines. Any divergences in culture may not be immediately obvious and take some time to materialize post-integration of the two firms. As a result, even in cases when a target is financially attractive or complements the acquirer's business strategy, a deal may be withdrawn throughout the pre-acquisition negotiation process when potentially irreconcilable divergences become apparent.

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[3] Extracted from Trade Buyers Survey Results: The integration of environmental, social and governance issues in mergers and acquisitions transactions. For the full version please see http://www.unpri.org/wp-content/uploads/PRI_PWC_Report_FINAL.pdf

3.2. Background and development of hypotheses

3.2.1. Inter-organizational trust

Although a number of quantitative measures have a confirmed correlation with the outcome of M&A decisions, quantitative (hard) information is still lacking with regards to uncovering the viability of corporate acquisition decisions. For this reason, it has been becoming increasingly common to consider a firm's qualitative (soft) attributes (as defined by Kim *et al.*, 2014)) when examining corporate acquisition behaviours, such as corporate governance, CEO behaviour and inter-organizational trustworthiness.

The importance of inter-organizational trust in proposing an acquisition raises the question as to what factors promote and contribute to inter-organizational trust. According to Fulmer and Gelfand (2012), inter-organizational trust is defined as '*a shared psychological state among organizational members comprising willingness to accept vulnerability based on positive expectations of an organization*' (Page 1174). Shared characteristics between two organizations include business ethics (Kasper-Fuehrer and Ashkanasy, 2001), cultural diversity values (Stahl *et al.*, 2011), holding common principles among organizational members (d'Iribarne, 2003) and a common business understanding (Kasper-Fuehrer and Ashkanasy, 2001). In addition to those shared characteristics, Kasper-Fuehrer and Ashkanasy (2001) propose that inter-organizational trust is higher when organizations are able to effectively communicate their trustworthiness, *e.g.* when they have a close corporate culture and management style in social and ethical engagements that will facilitate communication flow.

Dekker and Van den Abbeele (2010) suggest that organizations are likely to choose an alliance partner based on inter-organizational trust and are less likely to search for alternative partners of lower trust levels. Their research has been extended to the market for corporate control,

which indicates that a higher level of inter-organizational trust results in a higher level of willingness to cooperate (Stahl *et al.*, 2011), and continued increased collaboration (Jensen, 2003, Malhotra and Lumineau, 2011). In addition to the impact of inter-organizational trust on choosing a contracting party and willingness to cooperate, it may also have a notable influence on post-acquisition integration. Stahl *et al.* (2011) propose that the selling firm's trust in the buying firm is higher when the post-acquisition integration takes a shorter period of time to complete and the change in job security and rewards is positive. It is also associated with decreased negotiation costs and conflicts (Zaheer *et al.*, 1998) and reduced transaction costs (Dyer and Chu, 2003, Gulati and Nickerson, 2008). The theory of inter-organizational trust is further related to syndicated loan rates by (Kim *et al.*, 2014). They find evidence that borrowers' ethical behaviour leads lending banks to loosen financing conditions when setting loan rates when there is similarity of lenders and borrowers along their ethical domain (Kim *et al.*, 2014).

In summary, the extant literature provides evidence on inter-organizational trust positively influencing decisions on choosing a contracting/ alliance partner because the deal process will be easier with such trustworthiness and familiarity between the two contracting parties. A higher level of similarity in corporate social and ethical engagements will result in a higher level of inter-organizational trust as it is one of the most important and strongest indicators in signalling corporate culture.

3.2.2. Hypotheses

Motivated by the previous background information and the three strands of research literature (M&A, CSR and inter-organizational trust), the general hypothesis is that acquirer-target CSR proximity influences inter-organizational trust, and thereby impacts: **(1)** M&A initialization likelihood, **(2)** M&A compatibility and **(3)** M&A completion likelihood.

My major hypothesis stems from the notable survey results in the 2012 PwC survey. In particular, a greater number of interviewed firms showed their reluctance in dealing with a firm that behaves differently in social and ethical terms (*i.e.* holds different ethical values) because they are more inclined to refuse a deal with potential difficulties and higher costs in the post-acquisition integration stage. By considering the effect of CSR difference on M&As, my hypothesis suggests that M&As are more likely to take place when an acquirer and its target have comparable CSR levels. A greater number of M&A deals are initiated for firms with closer CSR proximity between an acquirer and a target. Initiated deals are more likely to be completed when ATCD is small.

In order to have a greater understanding of the underlying factors determining M&A likelihood (both initialization and completion), I propose that acquirer-target cultural proximity, as implied by ATCD, plays an active role in influencing M&A likelihood. In my research framework, I conjecture that target CSR and ATCD will both influence the deal completion likelihood in addition to the acquirer's CSR (Deng *et al.*, 2013). Thus, my major hypotheses are:

Hypothesis I:

Higher ATCD leads to lower M&A likelihood.

Hypothesis II:

Higher ATCD leads to lower likelihood of M&A deal completion.

3.3. The KLD database and CSR measure

In this section, I will describe the characteristics of the MSCI KLD (Kinder, Lydenberg, and Domini Inc.) STATS database and explain why it is considered to be the most useful and reliable source of corporate social data for empirical research. I will also describe how I use the raw corporate social scores obtained from the KLD social database to quantify a firm's CSR. For simplicity purposes, I will reference the database as KLD from here on.

As this research focuses on the impacts of CSR on a number of aspects of the market for corporate control, I will finally address the measurement of the absolute CSR difference between the two contracting parties, *i.e.* the acquirer and the target.

3.3.1. The KLD database

When investigating CSR impacts on various aspects of M&As, it is crucial to ensure that the measurement of corporate social responsibility (CSR) is solid and reliable, to prevent questionable empirical results relating to M&As and CSR. However, generating a comprehensive proxy for corporate social responsibility is challenging for two explicit reasons:

1) The full spectrum of CSR is broad, as there are many aspects to consider (referred to as dimensions of CSR). Within each dimension, there are also a number of related proxy reasons.

2) The qualitative, rather than quantitative nature of CSR makes it challenging to consistently quantify and measure CSR proxy variables. This problem is exacerbated by the lack of consensus in the current literature.

As defined by Turban and Greening (1997), CSR is '*a construct that emphasizes a company's responsibilities to multiple stakeholders, such as employees and the community at large, in*

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addition to its traditional responsibilities to economic shareholders'. Therefore, a comprehensive expression of CSR and a full coverage of its scope, involves capturing a wide range of social and environmental impacts caused by business operations (Gond and Crane, 2010) in a single numerical value. Despite the difficulty of finding multiple metrics to fully cover its scope, the development of a quantitative measurement of these metrics is also a daunting task (Gond and Crane, 2010, Rowley and Berman, 2000).

KLD STATS is a statistical tool for analysing trends in social and environmental performance in the KLD database. It provides annual snapshots of publicly traded U.S. (and a small number of Canadian) firms' environmental, social and governance performance as rated by KLD Research & Analytics, Inc. Annual ratings are utilized in this research, however the database updates strength or concern ratings on a continuous process (not only once a year). The ratings cover multiple indicators describing seven qualitative issue areas: community, corporate governance, diversity, employee relations, environment, human rights and product (Figure 3.a). All ratings are coded as binary variables, with 1 representing the presence of a particular strength/ concern rating and 0 representing its absence. For instance, in the environmental issue, "beneficial products and services" is rated as 1 if the company derives substantial revenues from innovative remediation products, environmental services, or products that promote the efficient use of energy, or it has developed innovative products with environmental benefits, otherwise the rating for this category is 0. The same rating method applies to the concern category, "hazardous waste" which is considered a concern with a rating of 1 if the company's liabilities for hazardous waste sites exceed $50 million, or the company has recently paid substantial fines or civil penalties for waste management violations (Figure 3.b). Furthermore, KLD rates six controversial ethical and business issues as concerns, *i.e.* alcohol, gambling, tobacco, firearms, military and nuclear power (Figure 3.c).

The data is retrieved from a variety of sources, including internal information such as annual reports and direct communication with the company management, and external public documents, such as government or NGO information and reports in the media. Commencing in 1991, the KLD social database provides tabulated data containing approximately 650 companies from the FTSE KLD 400 Social Index and S&P 500 with one record for each company. There have been two expansions in the coverage of KLD STATS, the first introducing the 1000 largest, U.S. publicly traded firms in terms of market capitalization in 2001 and the second beginning in 2003, enlarging that coverage to the largest 3000 U.S. publicly traded firms by market capitalization.

Though KLD remains the leading position in providing data in assessing corporate social performance (Waddock 2003) of large listed U.S. firms, it is biased towards firms with a large market capitalization. We should recognize the fact that its coverage on only publicly traded large U.S. firms itself is a limitation and the research results based on KLD should not be extended to firms outside of the scope of KLD. Strictly speaking, it also suggests that the research results in this study only stand for the sample that covered by KLD and won't apply to small – cap firms that don't follow CSR.

However, in practice, there are many private firms that also make efforts and investments in corporate social activities, i.e. supporting local communities, encourage diversity of employees. There are no unanimous consensus yet on whether private firms who behave positively with regard to corporate social and ethical aspects earn a better performance.

As the most commonly cited database for CSR research, KLD database covers the widest range of U.S. publicly traded firms for the longest time period (since 1991). In addition, it provides access to U.S. firms' corporate social responsibility ratings within seven qualitative issue areas,

which makes it the most comprehensive social database for empirical research. As my research focuses on U.S. acquisitions between 1992 and 2012, KLD social database is considered to be the most appropriate source for corporate social indicators, though several studies in the literature criticized the measures used in empirical studies (including the KLD database) as not fully grounded in the theoretical development of CSR, and using a fixed set of measures presupposing a "*one-size-fits-all*" approach of CSR for different industries (Rowley and Berman, 2000, Mattingly and Berman, 2006, Gond and Crane, 2010). In the consideration of the complexities in quantifying CSR, the KLD database is still deemed "the de facto research standard at this moment" and "the best currently available to scholars" (Waddock, 2003). As a result, in this research, the KLD database is utilized as the source for corporate social responsibility.

Figure 3.a: KLD Social Database Seven Qualitative Issue Areas-Strengths including their assessed subcategories

Community Strengths	Corporate Governance Strengths	Diversity Strengths	Environment Strengths	Employment Strengths	Human Rights Strengths	Product Strengths
Generous giving	Limited compensation	CEO	Beneficial products and services	Union relations strengths	Positive record in South Africa	Quality
Innovative giving	Ownership strength	Promotion	Pollution prevention	No-layoff policy		R&D innovation
Non-US charitable giving		Board of directors	Recycling	Cash profit sharing	Indigenous peoples relations strength	
Support for housing	Transparency strength	Family benefits	Alternative fuels	Involvement		Benefits to economically disadvantaged
Support for education		Women/minority contracting	Communications	Strong retirement benefits	Labor rights strength	
Indigenous peoples relations	Political accountability strength	Employment of the disabled	Property, plant, and equipment	Health and safety strength		
Volunteer programs		Gay & Lesbian policies	Management systems		Other strength	Other strength
Other strength	Other strength	Other strength	Other strength	Other strength		

Figure 3.b: KLD Social Database Seven Qualitative Issue Areas-Concerns

Community Concerns	Corporate Governance Concerns	Diversity Concerns	Environment Concerns	Employment Concerns	Human Rights Concerns	Product Concerns
Investment controversies	High compensation	Controversies	Hazardous waste	Union relations	South Africa	Product safety
Negative economic impact	Ownership concern		Regulatory problems	Health and safety concern	Northern Ireland	Marketing/ contracting controversy
Indigenous peoples relations	Accounting concern		Ozone depleting chemicals		Burma concern	
	Transparency concern	Non-representation	Substantial emissions	Workforce reduction	Mexico	Antitrust
Tax disputes	Political accountability concern		Agricultural chemicals	Retirement benefits concern	Labor rights concern	
Other concern	Other concern	Other concern	Climate change	Other concern	Indigenous peoples relations concern	Other concern
			Other concern		Other concern	

Figure 3.c: KLD Social Database Six Controversial Issue Areas

Significant Controversies
Concerns

Alcohol
Gambling
Tobacco
Firearms
Military
Nuclear Power

3.3.2. The CSR measurement

In this research, I use the raw corporate social responsibility scores from the KLD database to develop the proxy of corporate engagement in CSR activities for each individual acquirer and target. The use of raw CSR scores from the KLD database allows me to include all the universal dimensions that are considered of interest in Section 3.1.1. As currently, the KLD database is the most widely used and comprehensive information source for CSR research (Waddock, 2003), and also proves convenient for establishing a comprehensive linear weighted average CSR score for each firm.

In this section, I will explain how I use raw CSR scores of the described CSR indicators to compute the overall CSR measurement for a firm. It is more difficult to measure soft attributes of a firm in a quantitative manner since there is no consensus in how to quantify these soft attributes. It is different from measuring corporate financial performance (quantitative), *e.g.* return on assets, since the former is not clearly defined and not readily available and the latter is about extracting key numbers from financial statements and performing calculations. To the best of my knowledge, the dataset I created for this research is the most chronologically extensive dataset that has been used in the context of the CSR-M&A literature when the analysis is conducted at the deal level.

Following Oikonomou *et al.* (2012) and Hillman and Keim (2001), five out of seven dimensions of CSR are extracted from the KLD social database as those five dimensions have a direct linkage with specific, primary stakeholder groups. Therefore the overall CSR score may concentrate on the most important representative facets of corporate social responsibility. In this sense, the whole set of controversial business issues are disregarded since they are representative of corporate action that Hillman and Keim (2001) deem "social issues

participation". Moreover, to fully capitalize on the lengthiness of the dataset, as well as for the sake of consistency and comparability with previous research, only the omnipresent indicators of those selected five qualitative business issue dimensions are utilized. As a result of this selection and utilization process, the individual indicators that are included in this research are displayed in Figure 3.d.

Figure 3.d: Omnipresent indicators of qualitative CSR issue areas of interest

Community Strengths	Diversity Strengths	Environment Strengths	Employment Strengths	Product Strengths
Generous giving	CEO	Beneficial products and services	Union relations strengths	Quality
Innovative giving	Promotion	Pollution prevention	Cash profit sharing	R&D innovation
Support for housing	Board of directors	Recycling	Involvement	Benefits to economically disadvantaged
Other strength	Family benefits	Alternative fuels	Strong retirement benefits	Other strengths
	Women/minority contracting	Other strength	Other strength	
	Employment of the disabled			
	Other strength			

Community Concerns	Diversity Concerns	Environment Concerns	Employment Concerns	Product Concerns
Investment controversies	Controversies	Hazardous waste	Union relations strengths	Product safety
Negative economic impact		Regulatory problems	Health and safety concern	Marketing/ contracting controversy
Tax disputes	Other concern	Ozone depleting chemicals	Workforce reduction	Antitrust
Other concern		Substantial emissions	Other concern	Other concern
		Agricultural chemicals		
		Other concern		

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After carefully selecting the most related qualitative issue area and CSR indicators, I quantify strengths and concerns for each selected qualitative issue areas (five in total). In order to extrapolate the greatest possible information from that score, firstly I find the mean value of each individual indicator within a specific qualitative issue area, for both strength and concern respectively (Eqn. 3.1). Therefore, the general formula for calculating any individual qualitative issue component for a particular firm is:

$$\text{COMP} = \frac{1}{N} * \sum_{i=1}^{n} \text{Respective Indicators' ratings} \tag{3.1}$$

where N is the number of indicators that are relevant to the particular issue area. As an example, the formula for calculating the "Environment strength" score is:

$$\text{ENVS} = \frac{\begin{array}{c}\text{Beneficial products and services} + \text{pollution prevention} \\ + \text{recycling} + \text{alternative fuels} + \text{other strength}\end{array}}{5}$$

Following the above procedure, I obtain the strength and concern scores for five qualitative issue areas, which provides valuable information on a firm's detailed CSR facets. To conduct my research on the impact of CSR on the market for corporate control, I will proceed to obtain a recapitulative measurement of corporate social responsibility as Deng *et al.* (2013) have done. In order to create the "Aggregate Strengths" and "Aggregate Concerns" measures for a particular firm, I have used the method outlined by Oikonomou *et al.* (2012). The sum of each respective individual strengths/concerns indicator obtained in the previous procedure is divided by five (Eqn. 3.2 and 3.3 respectively).

The formula for calculating the "Aggregate Strengths" measure is:

$$AGGS = \frac{1}{5} * (COMS + DIVS + EMPS + ENVS + PSQS) \tag{3.2}$$

where COMS stands for the Community strengths component, DIVS stands for Diversity strengths, EMPS stands for Employment strengths, ENS stands for Environment strengths and PSQS for Product Safety and Quality strengths.

Analogously for "Aggregate Concerns":

$$AGGC = \frac{1}{5} * (COMC + DIVC + EMPC + ENVC + PSQC) \tag{3.3}$$

with the notation being equivalent to the one of equation (3.2).

I assume that each qualitative issue carries the same weight, *i.e.* each qualitative issue is equally weighted and taken arithmetic average when calculating "Aggregate Strengths" and "Aggregate Concerns". For example, environmental contributions are regarded as equally important as product safety and quality. This is done in accordance with the work of Hillman and Keim (2001), Oikonomou *et al.* (2012) and Deng *et al.* (2013) and is due to the lack of conceptual work concerning the quantification of each indicator that has importance among the various facets of CSR. Therefore it is a practical compromise to assign equal importance to CSR dimensions when constructing aggregated strengths/concerns measures. The logic of equal weighted various CSR indicators for constructing individual strengths/concerns is analogous.

In practice, it make little sense to assign the same weight to environmental aspect when it comes to assess financial institutes and oil firms, however, there is not a database so far that gives CSR ratings that based on sectors.

As CSR is fundamentally multidimensional in nature, all CSR dimensions have to be taken into consideration when considering assigning an overall CSR score to a firm. It will be considered objective and not fair to manually choose one dimension to represent a firm's overall CSR image, i.e. a firm might act well in terms of community dimension but not being responsible for the environment. In this case, it will be difficult for the rating agent to 'pick' environment dimension and say the firm is a bad CSR firm. In the same vein, it will be difficult to assign different weights to community and environment. Therefore the equally weighted approach is considered moderate in calculating a fair and consistent CSR score for more than one firm.

Following the CSR measure construction of Deng *et al.* (2013), my last reformulation of the CSR measure is to take the difference between AGGS and AGGC which leaves the 'remaining good CSR score'. Thus, for a particular firm, its overall corporate social responsibility performance is expressed by:

$$CSR = AGGS - AGGC \tag{3.4}$$

The core idea of my research is centred on the impact of between-firm CSR difference on various aspects of M&As; therefore measuring the corporate social responsibility difference becomes essential upon obtaining the CSR measure for individual acquirers and targets. A firm's engagement in CSR activities reflects its corporate soft attributes as well as corporate culture. From the previous construction process of the CSR measure for a particular firm, the constructed CSR measure conveys substantial valuable information about various

characteristics of a firm. A number of studies show that individual firms who share similar ethical values enjoy higher levels of mutual trust, which results in increased communication flows, commitment, cooperation and willingness to support the partner (Kim *et al.*, 2014). By studying the difference between the borrower's and the lender's ethical behaviour, Kim *et al.* (2014) point out that "*borrower's ethical behaviour leads lending banks to loosen financing conditions when setting loan rates when there is similarity of lender s and borrowers along their ethical domain*". I take the CSR difference in accordance with Kim *et al.* (2014):

$$\begin{matrix} \text{Between} - \text{firm CSR difference} \\ \text{(CSR distance)} \end{matrix} = |\text{Acquirer CSR} - \text{Target CSR}| \qquad (3.5)$$

The between-firm CSR difference is an absolute value *i.e.* a positive number that is equal to or greater than zero.

3.4. Data, sample selection and summary statistics

3.4.1. Data and sample selection

The initial sample of M&A deals comes from Thomson Financial SDC and consists of both completed and withdrawn deals between 1992 and 2012. The final sample includes all deals that meet the following selection criteria:

(1) Acquirers and targets are both publicly traded firms in the U.S. or Canada for the reason that KLD STATS provides annual snapshots of publicly traded U.S. (only a few Canadian) firm's environmental, social and governance performance rated by KLD Research & Analytics, Inc.,

(2) Deal value is at least $1 million,

(3) the acquirer owns less than 10% of target shares prior to the acquisition announcement and more than 50% after the transaction,

(4) Deal type does not include spin-offs, recapitalizations, self-tender offers, repurchases, minority stake purchases, acquisitions of remaining interest, exchange offers or privatizations,

(5) Both acquirers and targets are covered by the KLD Research & Analytics, Inc. (KLD) STATS database,

(6) Both acquirers' and targets' data is available from the Centre for Research in Security Prices (CRSP) as well as Standard & Poor's Compustat North America database.

These restrictions are standard in the extant M&A literature (Fuller *et al.*, 2002, Harford, 2005, Deng *et al.*, 2013), and result in a final sample of 842 acquisitions.

3.4.2. Sample distribution

In Table 3.1, I present the distribution of my sample M&As according to acquirer industry and year. The total number of acquisitions in each year increases more or less consistently amid the 1992-1998 surges, the time during which the fifth merger wave takes place. It then decreases significantly before rebounding in 2003, the year where the most recent merger wave begins. This level-off in activity amid the 2001-2002 recession was associated with a significant decline of acquisitions in the manufacturing industry and the Transportation, Communications & Utilities industries, possibly as a result of the collapse of the 'dotcom bubble'. The acquisition market started recovering in 2003 and since then has approached its highest activity levels.

During the financial crisis commencing in 2007, the number of acquisition deals in my sample experiences a steady peak and trough, though less substantial than during the previous 2004-2007 period. Starting in 2003, KLD enlarges its coverage to the largest 3000 U.S. publicly traded firms by market capitalization; this explains the inflated number of M&A deals. My sample has been enlarged from 2004 onward since the extension in KLD database leads to an improved coverage of M&A acquirers and targets. Most of the acquirers are in manufacturing (38.36%), financial industry (23.28%) and service industry (14.13%). In summary, the dataset in this research provides a good coverage of all the basic industries.

Due to KLD's coverage on mostly U.S. publicly traded firms, out of the 842 deals in the sample, there are 828 (98.3%) acquirers from the U.S. and 816 (96.9%) deals with both acquirers and targets from the U.S..

Table 3.1: Sample distribution by Year and Industry

The sample consists of 842 completed and withdrawn the U.S. and Canadian M&A deals between 1992 and 2012. The initial sample of M&A deals comes from Thomson Financial SDC and consists of both completed and withdrawn deals between 1992 and 2012. The final sample includes all deals that meet the following selection criteria: (1) acquirers and targets are both publicly traded firms in the U.S. or Canada, (2) the deal value is at least $1 million, (3) the acquirer owns less than 10% of target shares prior to the acquisition announcement and more than 50% after the transaction, (4) deal type does not include spin-offs, recapitalizations, self-tender offers, repurchases, minority stake purchases, acquisitions of remaining interest, exchange offers or privatizations, (5) both acquirers and targets are covered by the KLD Research & Analytics, Inc. (KLD) STATS database, (6) both acquirers' and targets' data are available from the Centre for Research in Security Prices (CRSP) as well as Standard & Poor's Compustat North America database.

Acquirer Industry (First two digits of the SIC code)	Agriculture, Forestry, &Fisheries (01-09)	Mineral Industries & Construction (10-17)	Manufacturing (20-39)	Transportation, Communications & Utilities (40-49)	Wholesale Trade & Retail Trade (50-59)	Financial Industry (60-69)	Service Industries (70-89)	Total
1992			1		1	1		3
1993		1	1	3				5
1994			5	3		1	1	10
1995			5	1		4	1	11
1996		2	4	7			1	14
1997		1	5	4		7		17
1998		3	10	3	2	11	1	30
1999		3	11	12		2		28
2000	1	1	8	3		5	1	19
2001		2	6			4		12
2002			4	2	1	1		8
2003		1	5	1		5	4	16
2004		6	25	4	3	35	19	92
2005		5	37	10	4	15	8	79
2006	1	9	34	8	7	26	21	106
2007		7	32	4	11	28	17	99
2008		7	23	9	4	8	15	66
2009		5	27	4	1	7	7	51
2010		5	37	7	3	10	13	75
2011		4	17	6	2	12	6	47
2012		2	26	5	3	14	4	54
Total	2	64	323	96	42	196	119	842

3.4.3. Measure of CSR difference and summary statistics

As has previously been stated, the core ideas of this chapter are centred on the impact of ATCD on M&As' completion likelihood. Therefore, measuring the corporate social responsibility difference becomes essential upon obtaining the CSR measure for individual acquirers and targets. A firm's engagements in CSR activities reflects its corporate soft attributes *e.g.* corporate culture since CSR measures conveys substantial valuable information about various characteristics of a firm. A number of studies show that individual firms which share similar ethical values enjoy higher levels of mutual trust, which results in increased communication flows, commitment, cooperation and willingness to support the partner (Kim *et al.*, 2014). Kim *et al.* (2014) defines the CSR difference between a borrower and a lender as a measure of how trust affects the setting of loan rates. In this vein, I measure the ideological difference between the two parties by defining ATCD in accordance with Kim *et al.* (2014):

$$\text{Acquirer} - \text{target CSR difference} = |\text{Acquirer CSR} - \text{Target CSR}|$$

Thus ATCD is always a positive number that is equal to or greater than zero since I take the absolute value of the difference between acquirer CSR and target CSR.

The sample of acquisitions is partitioned into two subsamples (Large and Small) based on the sample median of the algebraic ATCD (not the absolute difference). Table 2 provides summary statistics for the full sample and two subsamples, and tests the impact of changing key variables on each subsample. Definitions of each of the variables in Table 2 are provided in the Appendix. Several features are worth noting:

(1) Acquirers in the large CSR difference group show a significantly higher Return on Asset ratio than acquirers in the small CSR difference group.

(2) Compared to acquirers in the subsample with a lower algebraic ATCD, the market capitalization of those acquirers who buy a target with very different CSR behaviour is statistically higher (this holds for targets as well, which could suggest that both acquirers and targets with a larger market capitalization are inclined to be paired with a contracting party that behaves differently in CSR terms).

(3) The relative deal size is smaller when there is a larger difference of CSR between an acquirer and a target (this phenomenon signals that firms are less inclined to invest in/merge with a contracting party with larger cultural/ ethical difference in view of the greater future uncertainties and risks involved when cooperating with each other).

Table 3.2: Summary statistics

The sample consists of 842 completed and withdrawn U.S. and Canadian M&A deals between 1992 and 2012. The initial sample of M&A deals comes from Thomson Financial SDC and consists of both completed and withdrawn deals between 1992 and 2012. This sample is partitioned into two subsamples (Large ATCD and Small ATCD) based on the sample median of the variable between-firm CSR difference. This table provides summary statistics for the full sample and those two subsamples, as well as tests of difference of key variables between large and small ATCD subsamples. For calculations of each variable, please refer to Appendix A: Variable Definitions.

Variable	Full Sample (N=842)		Subsample of Large CSR Distance: A (N=422)		Subsample of Small CSR Distance: B (N=420)		Test of Difference (A-B)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
CSR difference measure								
CSR Difference	0.088	0.063	0.146	0.118	0.030	0.029	0.116***	0.089***
Acquirer Characteristics								
CSR	-0.025	-0.033	-0.011	-0.026	-0.038	-0.033	0.027***	0.007
Collateral	0.236	0.141	0.241	0.140	0.231	0.142	0.009	-0.002
Financial leverage	0.257	0.223	0.254	0.218	0.261	0.231	-0.007	-0.014
ROA	0.047	0.044	0.054	0.050	0.040	0.037	0.014**	0.013***
Market cap	8.830	8.704	9.158	9.180	8.503	8.330	0.656***	0.851***
Market to book	3.510	2.435	3.422	2.533	3.598	2.332	-0.176	0.201*
Runup	-1.236	-0.362	-1.164	-0.367	-1.315	-0.355	0.152	-0.013
Acquirer information asymmetry	0.018	0.016	0.017	0.015	0.018	0.016	-0.002**	-0.001
Hightec (dummy)	0.444	0.000	0.467	0.000	0.421	0.000	0.045	0.000
Target Characteristics								
CSR	-0.044	-0.042	-0.046	-0.056	-0.042	-0.036	-0.004	-0.052**
Collateral	0.247	0.133	0.237	0.137	0.258	0.131	-0.020	0.006
Financial leverage	0.281	0.227	0.272	0.209	0.289	0.242	-0.017	-0.033**
ROA	0.010	0.027	0.011	0.029	0.009	0.025	0.002	0.005
Market cap	7.076	6.967	7.183	7.055	6.968	6.855	0.215**	0.200
Market to book	2.689	2.116	2.491	2.143	2.890	2.097	-0.398	0.046
Target information asymmetry	0.024	0.021	0.024	0.021	0.024	0.021	0.000	0.000
Hightec (dummy)	0.444	0.000	0.479	0.000	0.410	0.000	0.069**	0.000**
Deal Characteristics								
Deal relative size	0.280	0.242	0.267	0.214	0.294	0.270	-0.027*	-0.056**
Intra-industry (dummy)	0.545	1.000	0.526	1.000	0.564	1.000	-0.038	0.000
Hostile (dummy)	0.045	0.000	0.045	0.000	0.045	0.000	0.000	0.000

3.4.4. Specification of main variables and the correlation matrix

3.4.4.1.Main variables

To better understand the cross-sectional variation of ATCD on various aspects of the market for corporate control, I conduct multivariate regressions using ATCD as the main explanatory variable. When investigating my major hypothesis on the impact of CSR difference on merger completion likelihood, I control for acquirer CSR since Deng *et al.* (2013) identify a positive relation between acquirer CSR and merger completion likelihood, though they do not go into detail.

I also control for a number of important variables to account for the effects of well-known influential factors on an M&A deal's initiation and completion likelihood. Palepu (1986) suggests that inefficient management will lead to an increased likelihood of being acquired since the market for corporate control provides a mechanism to discipline those managers who fail to maximize a firm's market value. Accordingly, I include ROE and ROA to capture management efficiency (Dong *et al.*, 2006). Apart from replacing an incompetent managerial team, Hasbrouck (1985) suggests that a takeover bid of a low Tobin Q firm is an attempt to acquire valuable resources at a cost below that of a de novo investment. As long as q is less than 1, which means that market value is less than the replacement cost, any agent desiring to enter the industry would prefer acquisition over a de novo investment. Both ROE and Tobin Q demonstrate that a better managerial competency, as well as a more outstanding operating performance, facilitate M&A completion.

In order to account for the fact that high leverage will lead to a decreased likelihood of acquisition (since there are far fewer financial resources available), I control for the target's

financial leverage (Palepu, 1986). Despite, his results showing an ambiguous impact from the variable financial leverage, it serves as a proxy for a firm's financial reserves, collateral, and is identified to be positively associated with the M&A completion likelihood (Palepu, 1986). I include both financial leverage and collateral in my study.

Dong *et al.* (2006) find that higher target valuation is in association with a less combative offer, in terms of a lower probability of hostility, a lower probability of tender offer and a higher probability of offer success. Price-to-book ratio is employed in their research, whereas I use market-to-book ratio[4], an information asymmetry variable (Moeller *et al.*, 2007, Officer *et al.*, 2009) and runup variable. Information asymmetry is defined as the idiosyncratic volatility of the stock. It is computed as the standard deviation of the residuals from the Fama-French Three-factor (excess of the risk-free rate) (FF 3-Factor) model of daily returns within 250 trading days preceding the acquisition announcement day. Runup refers to buy and hold abnormal returns (BHAR) of the stock over the 60 days preceding the acquisition announcement day.

Research shows that the size of a target firm will be negatively related to the likelihood of acquisitions (Rodrigues and Stevenson, 2013); therefore I include target size, deal relative size and relative size into regressions in order to control for the size effect (Moeller *et al.*, 2004, Alexandridis *et al.*, 2013). I measure relative size by using a ratio of target total assets over acquirer total assets (Moeller *et al.*, 2004). Following on from Barnes (1990), I include the intra-industry dummy to control for industry effects. The intra-industry dummy equals 1 if the primary with 3-digit acquirer's SIC code coincides the 3-digit target's SIC code.

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[4] Market to book ratio is used in this study rather than price to book for two reasons: (1) M/B ratio is the standard ratio for measuring a firm's relative valuation position (i.e. undervalued, and overvalued) in M&A research ((Moeller *et al.*, 2004, Alexandridis *et al.*, 2013, Travlos, 1987); (2) data availability on M/B ratio is more complete than on P/B ratio.

3.4.4.2. The correlation matrix

Before moving forward to the regression analysis stage, in Table 3, I present a correlation matrix of all dependent and independent variables to demonstrate that the correlation between any two variables is within the threshold level.

Ordinary least square regression model is probably the most frequently used research method by most economists. Researchers have extensively studied and documented the properties and limitations of it, and problems with the model could be non-normality, heteroscedasticity, serial correlation *etc.*. By realizing the strictness of the model, an admiration for its robustness under departures from many assumptions has been grown. One area is the requirement that explanatory variables should be truly independent of one another. Researchers have also developed proper treatment of the models classical problems in two separate stages: detection and correction (Farrar & Glauber, 1967).

I group correlation coefficients by less than 30%, 30%-50% and above 50%. When correlation coefficient between a pair of variable reaches 50%, the pair is not included in a regression model to avoid potential collinearity problem. In order to detect any collinearity problem and provide reassurance, I use Belsey *et al.* (1980)'s test methodology in SAS for detecting any collinearity problem.

There are 8 pairs of correlation coefficients that exceed 30%, but are below 50%. They are: acquirer collateral-acquirer financial leverage (31.9%), acquirer financial leverage-target collateral (33.0%), acquirer market capitalization-acquirer information asymmetry (-40.4%), acquirer market capitalization-deal relative size (-48.9%), acquirer information asymmetry-target information asymmetry (48.9%), target ROA-target information asymmetry (-34.8%), target market capitalization-target market capitalization (-37.2%), target market capitalization-

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deal relative size (30.8%). There is one pair's correlation coefficient that above is 50% namely acquirer collateral-target collateral (80.8%).

Table 3.1 includes all main variables that I will use throughout all three chapters. However, I will still present the correlation matrix for further chapters as new variables regarding returns (Chapter 4) and method of payment (Chapter 5) will be added. Therefore, the readers can see how new variables correlate to existing variables in Table 3.1.

I do not include pairs of high correlation coefficient (over 50%) in one regression framework in order to avoid any multicollinearity issues. However, for medium highly correlated pairs such as acquirer collateral-acquirer financial leverage, I include them in one regression as they both reflect key financial characteristics of a firm and this is a common approach in the literature (Deng *et al.*, 2013; Chang, 1998).

In order to further ensure there are no multicollinearity issues, following Belsley *et al.* (1980), I conduct collinearity diagnostics for each analysis in this chapter to detect any potential multicollinearity problems and ensure the accurateness of this research. I apply their methods in SAS (COLLIN function) when conducting each regression analysis as outlined by Freund and Littell (1986). Essentially, this method is about calculating 'the condition indices' in SAS using COLLIN function. Belsey *et al.* (1980) suggest that, when this number is around 10, weak dependencies might be starting to affect the regression estimates. When this number is larger than 100, the estimates might have a fair amount of numerical error. In my regressions, the condition indices are well below 10 (the maximum number is 9.38), which implies multicollinearity is not a problem.

Table 3.3: Pearson correlation coefficients

This correlation matrix aims to demonstrate Pearson correlation coefficients between any two variables in my sample. There are 8 pairs of correlation coefficients that exceed 30%, but are below 50%. They are acquirer collateral-acquirer financial leverage (31.9%), acquirer financial leverage-target collateral (33.0%), acquirer market capitalization-acquirer information asymmetry (-40.4%), acquirer market capitalization-deal relative size (-48.9%), acquirer information asymmetry-target information asymmetry (48.9%), target ROA-target information asymmetry (-34.8%), target market capitalization-target market capitalization (-37.2%), target market capitalization-deal relative size (30.8%). There is one pair's correlation coefficient that is above 50% namely acquirer collateral-target collateral (80.8%). I do not include highly correlated variables in one regression.

	ATCD	A_ Collateral	A_ Financial leverage	A_ ROA	A_ Market cap	A_ Market to book	A_ Runup	Acquirer information asymmetry	T_ Collateral	T_ Financial leverage	T_ROA	T_ Market cap	T_ Market to book	Target information asymmetry	Deal relative size	Intra-industry (dummy)	Hostile (dummy)
CSR Distance	1.000																
A_ Collateral	-0.033	1.000															
A_ Financial leverage	-0.061	0.319	1.000														
A_ROA	0.116	-0.010	-0.258	1.000													
A_ Market cap	0.278	-0.066	-0.164	0.278	1.000												
A_ Market to book	0.002	-0.057	0.086	0.197	0.136	1.000											
A_Runup	0.005	0.010	-0.073	0.079	0.043	0.054	1.000										
Acquirer information asymmetry	-0.129	0.044	0.068	-0.258	-0.404	0.020	-0.034	1.000									
T_ Collateral	-0.067	0.808	0.330	0.003	-0.109	-0.072	0.024	0.054	1.000								
T_ Financial leverage	0.003	0.245	0.246	-0.028	0.046	-0.013	0.005	-0.006	0.379	1.000							
T_ROA	0.001	0.021	0.017	0.127	0.026	0.035	-0.019	-0.228	0.059	-0.181	1.000						
T_ Market cap	0.051	0.142	0.060	0.071	0.458	0.048	0.063	-0.103	0.164	-0.181	0.202	1.000					
T_ Market to book	-0.083	-0.021	0.002	0.042	0.072	0.111	0.019	-0.023	0.013	-0.038	0.111	0.129	1.000				
Target information asymmetry	-0.001	-0.059	-0.070	-0.088	-0.070	0.016	-0.008	0.489	-0.117	0.032	-0.348	-0.372	-0.036	1.000			
Deal relative size	-0.141	0.217	0.214	-0.173	-0.489	-0.076	0.013	0.249	0.247	0.021	0.138	0.308	0.031	-0.168	1.000		
Intra-industry (dummy)	-0.106	0.142	0.059	-0.029	-0.120	-0.002	-0.046	0.097	0.138	0.049	-0.104	0.027	-0.080	0.002	0.123	1.000	
Hostile (dummy)	-0.052	0.087	0.031	0.007	-0.002	0.035	0.018	0.002	0.081	-0.008	0.022	0.115	0.004	-0.047	0.091	0.026	1.000

3.5.Methodology

3.5.1. The discrete choice modelling framework

In order to measure the likelihood and magnitude of ATCD impacts on M&A likelihood in this chapter and method of payment in following chapter, I apply the logistic model following Palepu (1986) who applies the logit method on takeover prediction. By utilizing logit regressions, it allows me to report whether ATCD plays a role in affecting the likelihood of M&A initialization or completion as well as the magnitude based on a series of acquirer, target and deal characteristics. The logistic regression overcomes the rigidities of the linear probability model in the presence of a dichotomous state problem. As shown in Figure 3.f, the logit transformation maps probability (P_i) ranging between 0 and 1 to log odds ($Ln(\frac{P_i}{1-P_i})$) ranging from negative infinity to positive infinity; this removes the challenge of modelling a variable that has restricted range, such as M&A completion (1) or acquisition failure (0).

The first step transformation from probability (P_i) to odds ($\frac{P_i}{1-P_i}$) is a monotonic transformation, *i.e.* the greater the probability, the greater the odds and vice versa. For example, the probability of success of an event is 0.6, and therefore the probability of failure is 0.4. The odds of success are defined as the ratio of the probability of success over the probability of failure. It is 3/2 in above example (calculated as 0.6/0.4).

The second step log transformation from odds to log of odds is again a monotonic relation, suggesting that the log odds increases as the odds increases or vice versa.

The model is defined by equations (3.6)-(3.8).

$$P_i = E(Y = 1|X_i) = \frac{1}{1+e^{-Z_i}} \qquad (3.6)$$

where $Z_i = \beta_0 + \beta_1 X_{1i} + \cdots + \beta_k X_{ki}$

$$L_i = \ln\left(\frac{P_i}{1-P_i}\right) = Z_i = \beta_0 + \beta_1 X_{1i} + \cdots + \beta_k X_{ki} \qquad (3.7)$$

Equation (3.7) is a mathematical transformation of Equation (3.6), by applying a natural logarithmic function on both sides of Equation (3.6). It presents the existence of a linear relation between the log odds ratio L_i and right-hand side independent variables.

$$\frac{\partial P_i}{\partial X_i} = \beta_i P_i (1 - P_i) \qquad (3.8)$$

Equation (3.8) measures the change in the probability of the event as a consequence of a small change in the independent variables, X_i, i=1,2…, k.

Mathematically, when the probability of the event is high or low, a large change in the explanatory variables is required to change the classification of the observation since the incremental impact of a change in an explanatory variable on the likelihood of the event will be compressed. Hence, if a deal is clearly classified as completed or withdrawn, a large change in the explanatory variables is required to change its classification.

Figure 3.e: Logit regression maps

The upper plot is derived from Probability (P_i) to Odds ($\frac{P_i}{1-P_i}$) and the lower plot is derived from Odds ($\frac{P_i}{1-P_i}$) to Log odds ($\text{Ln}(\frac{P_i}{1-P_i})$)
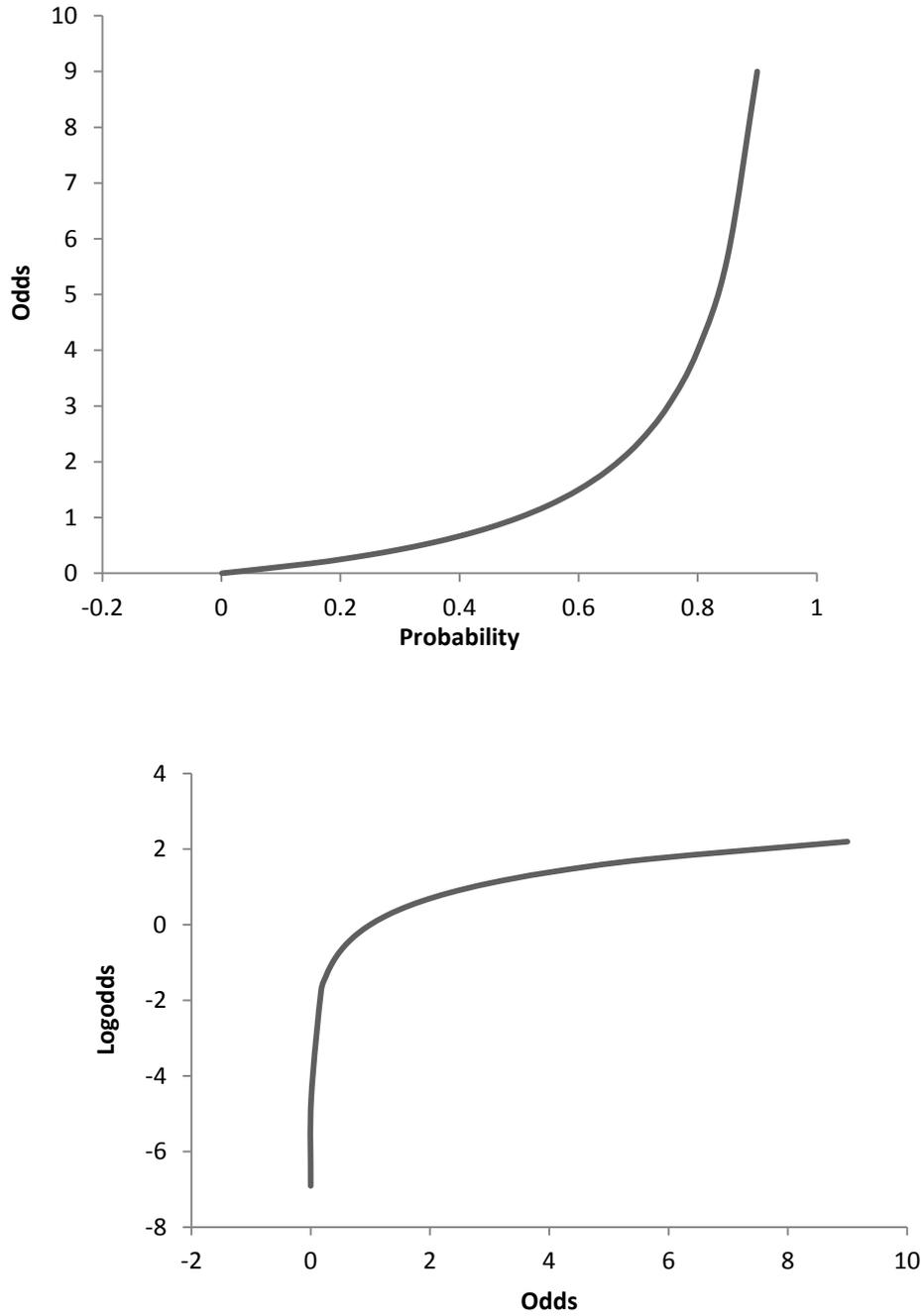
I specify two logistic regression models to study ATCD impacts on M&A likelihood of initialization and completion (**Model I** and **Model II**), the rationales for the inclusion of each of the variables having already been specified in section 3.4.4. I will explain here the rationale of the combinations of control variables for each model:

Model I: Impact of ATCD on M&A initialization likelihood

$$Log\ odds\ (M\&A\ initialization) = \beta_0 + \beta_1 CSRDIFF + \beta_2 TCOLLATERAL +$$
$$\beta_3 TLEVERAGE + \beta_4 TMKTCAP + \beta_5 TROA + \beta_6 TTOBINQ + \beta_7 TMTB + \beta_8 TDIV + \varepsilon_{it}$$

where CSRDIFF refers to ATCD, TCOLLATERAL refers to target collateral, TLEVERAGE refers to target financial leverage, TMKTCAP refers to target market capitalization, TROA refers to target return on asset ratio, TTOBINQ refers to target Tobin-q ratio, TMTB refers to target market to book ratio, TDIV refers to target dividend payout ratio.

When predicting the initialization likelihood of a deal, it is more about analysing the characteristics of the target as like an acquirer's selection process of targets, *i.e.* is it the target that of interests of an acquirer. For this reason, I control for various target characteristics as well as ATCD. This is also the approach utilized by Palepu (1986).

Model II: Impact of ATCD on M&A completion likelihood

$$Log\ odds\ (M\&A\ completion) = \beta_0 + \beta_1 CSRDIFF + \beta_2 ACSR + \beta_3 ALEVERAGE +$$
$$\beta_4 RELSIZE + \beta_5 DRELSIZE + \beta_6 AMB + \beta_7 AROA + \beta_8 AMKTCAP + \beta_9 ARUNUP +$$
$$\beta_{10} AIA + \beta_{11} TIA + \beta_{12} INTRAIND + \beta_{13} HOSTILE + \varepsilon_{it} \qquad ```$$

where CSRDIFF refers to ATCD, ACSR refers to acquirer CSR, ALEVERAGE refers to acquirer leverage, RELSIZE refers to the ratio of target size over acquirer size, DRELSIZE refers to deal relative size, AMB refers to acquirer market to book ratio, AROA refers to acquirer return on asset ratio, AMKTCAP refers to acquirer market capitalization, ARUNUP refers to buy and hold abnormal return (BHAR) of the acquirer stock over 60 days preceding the acquisition announcement day, AIA and TIA refer to acquirer information asymmetry and target information asymmetry respectively, INTRAIND is the intra-industry dummy and HOSTILE refers to hostile deal dummy.

When it comes to estimating ATCD impacts on the M&A completion likelihood, I control for both acquirer and deal characteristics as acquiring firms are the dominating power at that stage. As long as a target has been chosen, the acquirer will reach out to the potential target and the deal enters the negotiation stage. The outcome from this stage largely depends on the acquirer's characteristics since a target's characteristics are already on the table. For example, the acquiring firm's financial status could directly influence the amount of proceeds and the method of payment. The deal could end up with being withdrawn if this amount or the payment method does not satisfy the target. TIA (target information asymmetry) is included as the only controlling target characteristic because it signals the transparency of the target's stock price which will influence various decisions from the acquirer.

3.6.Results and Discussion

In this section, I will analyse the impacts of ATCD on the M&A initialization likelihood, acquirer-target compatibility and M&A completion likelihood. I identify a negative linkage between ATCD and the likelihood that a deal is initialized. Among these initialized deals, I observe that high CSR acquirers are more likely to pair with high CSR targets while poor CSR acquirers are more likely to pair with a poor CSR target. Moreover, the closer the acquirer-target CSR score, the more likely it is that the deal will be completed.

3.6.1. M&A likelihood: deal and non-deal sample

To demonstrate that CSR is an active factor that influences the decision making process during an M&A, I create a non-deal sample, where no M&A deals have been initiated, and compare it to a deal sample, in which the M&A process has been started. The non-deal sample is constructed by matching a comparable non-acquired firm to each event firm. With regards to obtaining the non-deal sample, I first create a shortlist from the KLD database by excluding all firms that have been involved in M&A deals between 1992 and 2012 (either in the role of an acquirer or a target). I then aim to obtain a p-score for each acquirer and target in both the deal sample and the non-deal sample. One of the methods used in this area of research involves employing a small number of firm characteristics to perform the matching procedure. In this study, I use a propensity score matching method. The characteristics taken into consideration are: market capitalization, financial leverage, Tobin Q and ROE ratio as I consider them to be the most important generic aspects of a firm's identity. Each acquirer and target from the deal-sample are then paired with a non-deal firm from the KLD shortlist which has closest p-score. Thus, we have a pair of firms that are very similar in terms of most key characteristics but may be dissimilar when it comes to CSR aspects. Industry is not controlled in this case as all non-

acquired firms are randomly selected depending only on their financial (accounting) data. We will smoothen industrial impacts in the robustness test section.

I break down corporate CSR engagements to six dimensions as specified by KLD: community, diversity, employee relation, environment, product and corporate governance. This breakdown elucidates how M&A likelihood is influenced by CSR engagements. Table 3.4 reports tests of difference between deal sample and non-deal sample firms, and shows that, for each dimension, the absolute CSR differences of non-deal samples are generally larger than those of deal samples. This difference is statistically significant for employee relations, environment and product dimensions. In general, it shows that actual deal pairs have a closer ethical proximity compared to artificially constructed non-deal pairs. Even when the CSR difference is insignificant, it is interesting that the non-deal sample always has a higher CSR difference. This means that, the CSR difference between the deal and non-deal samples are always positive. When considering the example of Pfizer's failure in acquiring AstraZeneca these factors can be used to explain the failure; more specifically it is worth nothing Pfizer's failure to establish an agreement with AstraZeneca regarding employee relations after the proposed merger.

Moreover, considering the average ATCD across the full sample (0.088 with medium 0.063), a difference of 0.037 between deal sample and non-deal sample firms is considered bearing a very strong economic magnitude. Even if it comes down to 0.007 for the overall CSR difference, it still indicates an economically significant difference.

Table 3.4: Test of difference: M&A sample and p-score matched non-deal sample

The sample consists of 842 U.S. acquisitions and 662 p-score matched non-deal pairs between 1992 and 2012. I obtain the initial sample of 842 acquisitions from Thomson Financial's Security Data Corporation (SDC) Platinum database. The non-deal sample is constructed by matching a comparable non-acquired firm to each event firm. With regards to obtaining the non-deal sample, I first create a shortlist from the KLD database by excluding all firms that have been involved in M&A deals between 1992 and 2012 (either in the role of an acquirer or a target). I then obtain a p-score for each acquirer and target in both the deal samples and the non-deal samples using a propensity score matching method. The characteristics taken into consideration are: market capitalization, financial leverage, Tobin Q and ROE ratio. Each acquirer and target from the deal-sample are then paired with a non-deal firm from the KLD shortlist which has closest p-score. For companies where financial information was missing, deals to which they match were removed from the sample, to prevent biasing the results.

CSR measures are further classified in their six dimensions to record any specific CSR impact on M&A deal completion likelihood. They are Community, Diversity, Employee relations, Environment, Product and Corporate governance. The symbols *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

	CSR difference	Community	Diversity	Employee relation	Environment	Product	Corporate governance
Deal sample (1)	0.088	0.104	0.280	0.157	0.090	0.133	0.164
Non-deal sample (2) (Propensity score matched)	0.095	0.117	0.281	0.178	0.127	0.164	0.171
Diff (2)-(1)	0.007	0.012	0.001	0.021**	0.037***	0.031***	0.007
T-value	1.550	1.340	0.110	2.310	4.140	2.810	0.760
No. of observations	662	662	662	662	662	662	662

Observing a significant and consistently positive CSR difference between the deal and the non-deal samples, it indicates that a deal is less likely to be initiated with a larger CSR difference between an acquirer and a potential target. I investigate the hypotheses further in this section by utilizing a logit regression. This will help in providing more insights in the economic magnitude of ATCD impacts on the M&A initialization likelihood.

Table 3.5 constructs two univariate logit regressions. Dependent variables are 1 if there is an M&A deal (deal sample) and 0 for a matched pair (non-deal sample). Regression results are consistent with Hypothesis I: the higher the ATCD in general, the lower the M&A deal initialization likelihood. Simply put, there is a negative relation between ATCD and the M&A initialization likelihood. A 10% unit increase in ATCD will result in a 3.67% decrease in initializing an M&A deal. This relation is statistically strong for the factors employee relations and environment that are two of the most important components of a firm's public image. As a result of a 10% unit increase in the acquirer-target difference in employee relations and environment, there will be a 2.62% and 2.81% decrease in the M&A initialization likelihood respectively. For example, a common problem after deal completion is the effect of redundancy on employee relations. Therefore, a deal is less likely to be initialized if a deal buyer and its seller have drastically different solutions to these problems. Divergence in dealing with employee relations further implies culture differences between two firms which is regarded as an impediment in dealing with a target firm. Regarding the environment dimension, it's one of the most important ways that announces a firm's engagements with social and ethical aspects (*e.g.* Unilever is committed to fighting deforestation). It is expected that ATCDs in employee relations and environment dimension are both negatively related to initializing a deal.

Table 3.5 shows the regressions on the impacts of ATCD (CSR dimensions) on M&A likelihood. In addition to the main explanatory variable ATCD and its six dimensions when breaking it down, I also control for the main influential variables that are mentioned in literature concerning takeover target prediction. Pseudo R-squares are at satisfactory levels compared to literature (*i.e.* 0.077 and 0.105), which suggests the set of control variables provides a reasonable explanatory power to the M&A likelihood. The signs of control variables are in line with the predicted signs as in the literature. I find that the size of a firm (market capitalization) is significantly negatively related to the likelihood of acquisition. This is based on the premise that there are several size-related 'transaction costs' associated with acquiring a firm. Also it includes higher costs to integrate a larger firm into the acquirer. Costs are likely to increase with the target size and hence the number of potential bidders for a firm is likely to decrease with size. Firms with more collateral are less likely to initiate a deal while a higher financial leverage contributes to the likelihood of acquisition. In my sample, undervaluation of a firm (Market-to-book) leads to an increased likelihood of acquisition. High payout ratios will result in a decreased likelihood of acquisition as shown by an insignificantly negative relation between these two.

I do not control for industry variables due to the nature of my sample construction; the non-deal sample is constructed by matching each deal firm with a non-deal firm with the closest propensity score. As no deals in the non-deal sample are actually happening in reality but firms in this sample have the closest financial features with firms in deal sample. It's not reasonable to have a '*real*' intra-industry variable for the deal sample and a '*hypothetical*' one for the non-deal sample (it's hypothetical since the 'deal' is not happening). Moreover, I apply no restrictions on industry when constructing the non-deal sample; firms are allocated from random industries. The total number of cross-industry deals in the 'fictional' pair sample is

comparable with that of the deal sample (40%). Hence, considering the uniqueness of this sample (which consists of both the deal sample and the non-deal sample), there is no need to control for intra-industry effects.

Table 3.5: Impacts of ATCD (CSR dimensions) on M&A likelihood

The sample consists of 842 U.S. acquisitions and 662 p-score matched non-deal pairs between 1992 and 2012. I obtain the initial sample of 842 acquisitions from Thomson Financial's Security Data Corporation (SDC) Platinum database. The non-deal sample is constructed by matching a comparable non-acquiring firm to each event firm. With regards to obtaining the non-deal sample, I first created a shortlist from the KLD database by excluding all firms that have been involved in M&A deals between 1992 and 2012 (either in the role of an acquirer or a target). I then obtained a p-score for each acquirer and target in both the deal sample and the non-deal sample using a propensity score matching method. The characteristics taken into consideration are: market capitalization, financial leverage, Tobin Q and ROE ratio. Each acquirer and target from the deal-sample are then paired with a non-deal firm from the KLD shortlist which has closest p-score. For companies where financial information was missing, deals to which they were matched were removed from the sample, to prevent biasing the results.

CSR measures are further classified as in six dimensions as to record any specific CSR impact on M&A deal completion likelihood. They are Community, Diversity, Employee relations, Environment, Product and Corporate governance. All variables are defined in the Appendix. The symbols *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

	Impact of ATCD (CSR dimensions) on M&A happening likelihood (Logit)			
	(1)	Marginal effect (1): dy/dx	(2)	Marginal effect (2): dy/dx
CSR difference measure (absolute):				
ATCD	-1.680** (4.833)	-0.367		
Community			0.786* (3.320)	0.177
Diversity			-0.334 (1.454)	-0.083
Employee Relations			-1.100*** (6.662)	-0.262
Environment			-1.191*** (7.333)	-0.281
Product			-0.492 (1.995)	-0.122
Corporate Governance			0.092 (0.049)	0.022
Target Characteristics:				
Collateral	-1.226*** (18.426)	-0.287	-1.168*** (15.856)	-0.276
Financial leverage	1.756*** (18.823)	0.322	1.870*** (21.092)	0.333
Market cap	-0.100** (4.353)	-0.025	-0.086* (2.821)	-0.021
ROA	0.532 (2.104)	0.125	0.441 (1.386)	0.104
Tobin Q	-0.038 (1.815)	-0.009	-0.035 (1.631)	-0.009
Market to book	-0.008 (0.740)	-0.002	-0.011 (1.288)	-0.003
Dividend payout ratio	-0.008 (0.017)	-0.002	-0.008 (0.014)	-0.002
Sample size	886		883	
Pseudo R-square	0.077		0.105	
Log likelihood	-611.958		-609.655	

In summary, results suggest that ATCD should be considered as an active variable in influencing takeover target prediction and the M&A deal likelihood. When considering the potential of a firm being a takeover target, apart from analysing hard quantitative attributes of a firm, it is also worthwhile to consider the soft qualitative attributes. When it comes down to corporate social aspects, while the big picture (such as corporate culture and business strategies) is essential, the details in depth (*i.e.* employee relations and environment) are also worth taking into consideration. This is because a firm's behaviour in social and ethical terms reflects its culture as well as its business strategies and two firms who have very different ideas in these two areas will take more effort to coordinate. It remains unclear whether this kind of coordination will bring value to the acquiring and combined firm or not.

3.6.2. Acquirer-target compatibility matrix analysis

To capture an initial and intuitive association between CSR and the M&A completion likelihood, I assess the relation between CSR proximity and initiation of a deal before analysing the logistic regression.

In Table 3.6, I report the compatibility matrix of acquirers and targets according to their CSR scores' relative position in the full sample, with both completed and withdrawn deals included. Acquirers are sorted into tertiles, acquirers that fall into the upper tertile are defined as 'high CSR acquirer', the middle tertile acquirers are 'medium CSR acquirer' and the lower tertile acquirers are 'low CSR acquirer'. Targets are categorized into 'high CSR target', 'medium CSR target' and 'low CSR target' analogously.

Each acquirer tertile is then further partitioned depending on the targets' respective score. For example: High acquirer becomes:

High acquirer – High target
High acquirer – Medium target
High acquirer – Low target

This produces a total of nine subsamples describing all deal types in terms of acquirer and target CSR score.

In Table 3.6, the value in each column shows the total number of initiated M&A deals, including both completed and withdrawn deals for that subsample. The matrix shows that: more M&A deals are initiated for firms with higher CSR proximity between an acquirer and a target; and acquisitions are most likely to happen between an acquirer and a target at comparable CSR

levels (41.568%)[5], *i.e.* 'high CSR acquirer-high CSR target' (14.371%), 'medium CSR acquirer-medium CSR target' (12.827%) and 'low CSR acquirer-low CSR target' (15.321%).

The second most likely scenario is that acquisitions take place at one level difference between an acquirer and a target (40.380%), *i.e.* 'high CSR acquirer-medium CSR target' (10.333%), 'medium CSR acquirer-high CSR target' (10.689%), 'medium CSR acquirer-low CSR target' (9.857%) and 'low CSR acquirer-medium CSR target' (9.501%). The least likely case is that a high CSR acquirer merges with a low CSR target (8.670%) or a low CSR acquirer buys a high CSR target (8.432%). The first two scenarios dominate over 80% of total initiated M&A deals, while the remaining 20% of deals take place between an acquirer and a target at two-level CSR difference. The findings are measured to ensure their economical and statistical significance, describing that more M&A deals are initiated between an acquirer and a target with higher level of CSR proximity. These findings are further validated by comparable results when the sample is analogously partitioned into quintiles.

Using an identical subsampling rationale in Table 3.6, I calculate the percentage of completed deals for each of the Table 3.6 columns in Table 3.7. The highest completion percentage falls in 'high CSR acquirer-high CSR target' subgroup. 'Low CSR acquirer-low CSR target' combination has the lowest completion rate. In general, Table 3.7 reveals a positive association between acquirer CSR score and completion of a deal. The finding is consistent with Deng *et al.* (2013)'s identification of an independent variable 'acquirer CSR score', which is introduced in later logistic regressions.

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[5] This is calculated as the total number of deals where the acquirer's CSR is comparable with the target's CSR as a percentage of the total number of deals in the sample, *i.e.* (121+108+129)/842=41.568%

Table 3.6: Compatibility matrix analysis for deal completion likelihood according to CSR score tertiles

The acquirers are sorted into 3 subgroups according to the order of acquirer CSR scores, acquirers that fall into the first (top) tertile are defined as 'high CSR acquirer', the second (medium) tertile acquirers are 'medium CSR acquirer' and the third (bottom) tertile acquirers are 'low CSR acquirer'. Targets are categorized into 'high CSR target', 'medium CSR target' and 'low CSR target' analogously. The 'high CSR acquirer' group is then partitioned into three subsamples according to target CSR scores, *i.e.* 'high CSR acquirer-high CSR target', 'high CSR acquirer-medium CSR target' and 'high CSR acquirer-low CSR target'. 'Medium CSR acquirer' and 'low CSR acquirer' are partitioned comparably, which enables me to obtain 9 subsamples indicating various acquirer-target combinations based on CSR score. The number in each column shows the total number of initiated M&A deals, including both completed and withdrawn deals. The matrix shows that more M&A deals are initiated for firms with higher CSR proximity between an acquirer and a target.

		Target			
		High	Medium	Low	*Total*
	High	**121**	87	*73*	*281*
Acquirer	Medium	90	**108**	83	*281*
	Low	*71*	80	**129**	*280*
	Total	*282*	*275*	*285*	*842*

Table 3.7: Completion percentage according to CSR score tertiles

Analogously the subsampling technique in Table 6, in Table 7, I calculate the percentage of completed deals for each of the columns in Table 6. The highest completion percentage falls in 'high CSR acquirer-high CSR target' subgroup. 'Low CSR acquirer-low CSR target' combination has the lowest completion rate. In general, Table 7 exhibits a positive association between acquirer CSR score and completion of a deal.

		Target		
		High	Medium	Low
	High	92.562%	91.954%	87.671%
Acquirer	Medium	92.222%	84.259%	81.928%
	Low	80.282%	87.500%	76.744%

3.6.3. ATCD and the completion likelihood of M&A deals

In the previous section, I demonstrated that over 40% of the completed M&A deals are between pairs of acquirers and targets with comparable CSR scores. In order to answer the question of the magnitude of this association, I proceed by investigating the impact of the between-firm CSR difference on M&A completion using multivariate logistic regressions.

The dependent variable, 'completion', is considered to have a value of 1 if a deal is completed and 0 otherwise. In Table 3.8, the main independent variable is between-firm CSR difference, which measures the absolute ideological difference on CSR engagements between an acquirer and a target. All statistically significant estimated coefficients in regression specifications (1)-(9) present us with a negative sign, suggesting an overall statistically negative relation between ATCD and M&A completion likelihood for the full sample and two subsamples. The levels of pseudo R-squares are at around 10% which is consistent with the CSR and M&A literature (Billett and Qian, 2008, Deng *et al.*, 2013). Regression models (3), (6) and (9) provide the best explanatory power for the full sample and the two subsamples based on the log likelihood ratio. To measure the effect of ATCD on the M&A completion likelihood, I compute the marginal effects by taking the natural log of one plus the mean of each independent variable for regression specifications (3), (6) and (9).

In univariate regressions of ATCD on the deal completion likelihood, I observe an insignificantly negative relation over the full sample, a positive and insignificant relation for the subsample where acquirer CSR is higher than target CSR and a significantly negative relation for the subsample where acquirer CSR is less than target CSR. The significantly negative relation in regression specification (7) indicates that the higher the acquirer-target divergence in terms of CSR, the lower the likelihood of deal completion, when the acquirer's

CSR is worse than the target's CSR. This could be an indication that a target with a good CSR score is reluctant to be controlled by an acquirer who pays less attention to CSR, or an acquirer who does not value social engagements is less likely invest in CSR. The former is less likely to be true since a disciplinary acquisition is usually depicted as a hostile deal but in my sample there are few hostile deals. The latter conjecture supports my previous view on acquirers' preference having a more significant effect on the deal completion process.

After controlling for the aforementioned influential deal- and firm-characteristics, the data shows a significantly negative relation between ATCD and deal completion likelihood for the full sample and the sample where the acquirer's CSR is better than the target's CSR; this relation is insignificant for the subsample where the acquirer fares worse in terms of CSR.

Economically, a 10% unit increase in CSR difference will lower the M&A completion likelihood by 8.65% for the full sample. Practically, this suggests that an increase in ATCD (10%) will result in a decrease in the deal completion likelihood by 8.65%. This becomes more pronounced for the subsample where the acquirer's CSR is greater than the target's CSR, as demonstrated by an increased ratio of 9.06%. Again, this could be attributed to a low CSR acquirer not considering CSR an advantage of the target or because a high CSR target does not trust an acquirer who is performing poorly in social and ethical aspects.

An additional variable to that may have an effect on deal completion is the acquirer CSR (Deng *et al.*, 2013). For the full sample and the subsample where the acquirer is paying more attention to CSR than the target, ATCD and acquirer's CSR both significantly influence the probability of deal completion, with a negative and positive change respectively. Furthermore, when measuring the magnitude of their impacts, ATCD has a larger coefficient which is more

significant than acquirer CSR score. This finding extends the findings of prior literature on influential factors of the M&As deal completion.

To explain which CSR dimensions influence the merger completion likelihood, I further break down CSR engagements into six dimensions as specified by KLD. In Table 3.9, I regress the merger completion likelihood on six major CSR dimensions and other acquirer and deal characteristics as specified. Among various CSR issues, employee relations are found to be the most influential for the merger completion likelihood. Coefficient signs are all negative for all dimensions except for community, which indicates a negative relation between differences in acquirer-target CSR dimensions and deal completion likelihood.

From the above findings, I conclude that greater CSR affinity increases the likelihood of initiating a merger and the chances of a successful merger or acquisition. A closer perception of CSR behaviours implies closer corporate culture. As defined by Sathe (1985), culture is 'the set of important assumptions (often unstated) that members of a community share in common'. A firm's culture is unique and shaped by its shareholders and stakeholders' history and experiences (Schein, 1985). It influences an organization at different levels, from top management to junior employees; it also affects numerous aspects of an organization, such as rules of conduct, leadership styles, administrative procedures and perceptions of the environment (Lorsch, 1986; Donaldson and Lorsch, 1983; Bhagat and McQuaid, 1982; Schwartz and Davis, 1981). With regard to the CSR aspect, this could be understood as a firm will not be socially and ethically responsible if its shareholders and stakeholders hold the view that 'CSR is costly and does not add value to the firm'. More broadly speaking, CSR-implied firm culture affects all aspects of the way that the firm operates and interacts with other firms/organisations.

As firm culture exists in all levels and all aspects of a firm, it is difficult to change and modify. Its full potency shows when two cultures are brought into close contact and when conflicts happen, *e.g.* a merger between two firms with different cultures. For instance, it will be difficult to execute a deal between an acquiring firm which does not consider the environment and a target that invests part of its revenues in sustainability-related ways. The divergence on CSR aspects between the acquirer and the target will show up at the negotiation stage when planning a combined firm strategy and this divergence is likely to become greater as it is culturally rooted. Therefore, two firms with close CSR indicating a close and shared belief in culture are more likely to merge, given such familiarity reduce future risks and uncertainties. This 'familiarity breeds investment' concept has been documented by Huberman (2001) as 'People simply prefer to invest in the familiar'. He found that the geographical distribution of the Regional Bell Operating Companies shows the propensity to be home based, though it conflicts the 'diversification rule' of portfolio theory. It indicates investors' preference for less risky investments, which, in this study, is acquiring a target with similar CSR behaviours.

To look at one particular aspect of CSR, there exists a strong positive relations between employee relation ATCD and merger completion likelihood. Similar style of management will create ease in numerous areas of the negotiation stage, *e.g.* allocation of employees, strategy for the newly integrated firm *etc*. It will also create confidence in an easy post-merger integration to both acquirer and the target. A large divergence in employee relations indicates different styles of top management; it will trigger uncertainties when negotiating about integrating human resources at different levels, from junior staff members to top management team. Moreover, a bad employee relation shows a disconnection between firm leadership and members of staff. When the firm management is less supported by its employees, there will be more pressure on the deal process and, as a result, the deal is more likely to be aborted.

Overall, extending Deng *et al.* (2013)'s findings regarding M&A completion likelihood, I show ATCD to be a more significant determinants of in deal completion likelihood than acquirer CSR, at both a statistical and an economic level. A higher ATCD is associated with a lower likelihood of completing a deal, as well as a higher chance that the deal is withdrawn. The 2012 PwC survey establishes the impacts of environmental, social and governance factors on mergers and acquisitions, with the cost and difficulty of bringing a target up to the buyer's standard, and the ease of post-acquisition integration being regarded as significant considerations in the deal process (*i.e.* pre-acquisition negotiations). A large difference in their attitudes regarding CSR engagements implies divergence in business strategies and corporate culture, which becomes an impediment in completing a deal. It provides implications that while achieving profitability is the core motive of a merger, the management should also pay attention to corporate culture besides financial statements, in order to understand cultural fit at due diligence stage and reduce further uncertainties and risks.

Table 3.8: Impact of ATCD on M&A completion likelihood

The sample consists of 842 U.S. acquisitions between 1992 and 2012. I obtain the initial sample of acquisitions from Thomson Financial's Security Data Corporation (SDC) Platinum database. My final sample includes all acquisitions subject to the following selection criteria: (1) the deal value disclosed in SDC is greater than $1 million, (2) the acquirer controls less than 10% of the target's shares prior to the announcement and owns greater than 50% of the target's shares after the transaction, (3) both the acquirer and the target are publicly traded and have stock return and financial data available from Centre for Research in Security Prices (CRSP) and Compustat, respectively, (4) both the acquirer and the target are covered by the KLD Research & Analytics, Inc. (KLD) STATS database.
Firms are divided into high, medium and low corporate social responsibility (CSR) firms according to the sample tertiles of CSR. All variables are defined in the Appendix. The symbols *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

	Impact of CSR difference on deal completion (Logit)											
	(1)	(2)	(3)	dy/dx	(4)	(5)	(6)	dy/dx	(7)	(8)	(9)	dy/dx
						Sample where acquirer CSR > target CSR						
		Full sample		dy/dx				dy/dx	Sample where acquirer CSR<target CSR			dy/dx
CSR measure:												
CSR difference (absolute value)	-0.2733	-3.209**	-5.352***		1.109	-2.698	-6.539**		-4.198**	-8.578*	-3.085	
	(0.060)	(4.103)	(8.096)	-0.865	(0.487)	(2.066)	(4.894)	-0.906	(4.529)	(3.504)	(0.315)	-0.538
Characteristics of Acquirer and deal												
Acquirer CSR			3.988***				5.131*				7.117*	
			(7.592)	0.086			(2.941)	0.076			(2.888)	0.065
Financial leverage		-0.281	-0.154			0.075	0.349			-2.828*	-2.741	
		(0.091)	(0.027)	-0.013		(0.003)	(0.063)	0.021		(2.717)	(2.417)	-0.453
Relative size		-0.004	-0.005			-0.005	-0.001			-0.076	-0.074	
		(0.013)	(0.023)	0.000		(0.014)	(0.000)	0.000		(1.486)	(1.393)	-0.005
Deal relative size		-2.513***	-2.451***			-3.106**	-2.6644*			-1.587	-1.604	
		(7.322)	(6.834)	-0.439		(5.355)	(3.651)	-0.461		(1.019)	(0.963)	-0.191
Market to book		0.014	0.014			0.002	0.006			0.064	0.021	
		(0.492)	(0.489)	0.001		(0.004)	(0.050)	0.000		(0.300)	(0.036)	0.001
ROA		-5.136**	-5.306**			-0.261	-0.421			-14.287***	-14.223***	
		(4.353)	(4.556)	-0.863		(0.007)	(0.016)	-0.036		(7.782)	(7.487)	-0.935
Market Cap		0.158	0.183			0.047	0.035			0.39*	0.443***	
		(1.760)	(2.326)	0.014		(0.071)	(0.037)	0.002		(3.370)	(4.114)	0.022
Runup		-0.022	-0.019			-0.001	-0.002			-0.046	-0.031	
		(0.813)	(0.685)	-0.002		(0.001)	(0.013)	0.000		(0.488)	(0.254)	-0.002

Acquirer information asymmetry	-1.569	5.088			7.763	6.425		21.351	37.567
	(0.004)	(0.041)	0.087		(0.049)	(0.032)	0.076	(0.209)	(0.582)	0.065
Target information asymmetry	0.715	-1.254			30.351	32.122		-30.821	-37.759
	(0.002)	(0.006)	-0.164		(1.082)	(1.174)	0.076	(1.742)	(2.476)	-0.935
Intra-industry dummy	-0.134	-0.178			-0.183	-0.189		-0.58	-0.604
	(0.181)	(0.313)	-0.015		(0.159)	(0.167)	-0.014	(1.236)	(1.303)	-0.048
Hostile dummy	-2.189***	-2.243***			-2.233***	-2.202***		-2.991***	-3.040***
	(20.831)	(21.333)	-0.387		(10.305)	(9.927)	-0.351	(13.407)	(13.936)	-0.527
Sample size	842	504	504		449	264	264	351	217	217
pseudo R-square	0.0001	0.086	0.100		0.001	0.096	0.106	0.012	0.139	0.151
Log likelihood	-341.197	-177.881	-177.881		-170.865	-89.285	-89.285	-148.977	-75.465	-75.465

Table 3.9: Impacts of ATCD (CSR dimensions) on deal completion likelihood

The sample consists of 504 U.S. acquisitions between 1992 and 2012. I obtain the initial sample of acquisitions from Thomson Financial's Security Data Corporation (SDC) Platinum database. My final sample includes all acquisitions subject to the following selection criteria: (1) the deal value disclosed in SDC is greater than $1 million, (2) the acquirer controls less than 10% of the target's shares prior to the announcement and owns greater than 50% of the target's shares after the transaction, (3) both the acquirer and the target are publicly traded and have stock return and financial data available from Centre for Research in Security Prices (CRSP) and Compustat, respectively, (4) both the acquirer and the target are covered by the KLD Research & Analytics, Inc. (KLD) STATS database.

CSR measures are further classified as in six dimensions as to record any specific CSR impact on M&A deal completion likelihood. They are Community, Diversity, Employee relations, Environment, Product and Corporate governance. All variables are defined in the Appendix. The symbols *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

	Impacts of ATCD (CSR dimensions) on deal completion (Logit)					
	(1)		(2)		(3)	
	Full Sample	Marginal effect (1): dy/dx	Sample where acquirer CSR > target CSR	Marginal effect (2): dy/dx	Sample where acquirer CSR < target CSR	Marginal effect (3): dy/dx
CSR measure:						
Community difference	0.645		0.666		1.569	
(absolute value)	(0.433)	0.039	(0.277)	0.031	(0.566)	0.044
Diversity difference	-0.233		-0.213		0.843	
(absolute value)	(0.123)	-0.067	(0.063)	-0.014	(0.298)	0.031
Employee relations difference	-1.523*		-3.172**		-0.280	
(absolute value)	(2.641)	-0.019	(5.889)	-0.561	(0.024)	-0.017
Environment difference	-0.911		-1.821		3.017	
(absolute value)	(0.859)	-0.049	(1.848)	-0.237	(1.285)	0.053
Product difference	-1.258		-1.334		-0.964	
(absolute value)	(2.263)	-0.034	(1.262)	-0.145	(0.416)	-0.079
Corporate governance difference	-0.609		-1.397		1.422	
(absolute value)	(0.452)	-0.058	(0.947)	-0.156	(0.693)	0.042
Characteristics of Acquirer and deal						
Acquirer CSR	3.270**		4.151*		10.834**	
	(4.399)	0.086	(2.735)	0.065	(6.031)	0.056
Financial leverage	-0.298		0.126		-2.905	
	(0.095)	-0.066	(0.007)	0.007	(2.552)	-0.465
Relative size	0.002		0.007		-0.092	
	(0.007)	0.071	(0.028)	0.000	(2.007)	-0.005
Deal relative size	-2.695***		-3.418**		-1.916	
	(7.839)	-0.102	(5.535)	-0.617	(1.209)	-0.232
Market to book	0.015		0.006		0.044	
	(0.517)	0.071	(0.046)	0.000	(0.120)	0.002
ROA	-5.394**		-0.722		-15.642***	
	(4.850)	-0.689	(0.044)	-0.061	(8.405)	-0.944
Market Cap	0.204		0.170		0.281	
	(2.512)	0.015	(0.655)	0.010	(1.146)	0.013
Runup	-0.021		0.000		-0.031	
	(0.720)	-0.002	(0.000)	0.000	(0.170)	-0.002
Acquirer information asymmetry	0.434		8.632		29.368	
	(0.000)	0.029	(0.050)	0.066	(0.356)	0.056
Target information asymmetry	-0.259		34.088		-37.998	
	(0.000)	-0.023	(1.226)	0.066	(2.377)	-0.944

Intra_industry dummy	-0.157 (0.243)	-0.013	-0.097 (0.041)	-0.006	-0.699 (1.672)	-0.051
Hostile dummy	-2.107*** (19.392)	-0.351	-1.917*** (6.698)	-0.258	-3.318*** (15.318)	-0.566
Sample size	504		264		217	
pseudo R-square	0.100		0.129		0.168	
Log likelihood	-177.881		-89.285		-75.465	

3.7. Robustness tests

3.7.1. Industry based impacts on KLD ratings

For the purpose of ensuring the accuracy and consistency of the results, I perform robustness checks by adjusting the CSR score per industry and conduct analysis on adjusted CSR scores.

CSR scores, as the most important independent variable in my research, are reviewed and assigned by KLD analytics on a yearly basis. Though it is the most widely used source for CSR ratings, the agent does not take into consideration any industry based impact when assigning a score to a firm. This may cause a bias amongst firms in different industries, *e.g.* it may not be at an equivalent ease for a paper mill to have an equivalent CSR score with a bank due to industry effects. To control for industry effect in my analysis, I factor industry effects out of CSR scores and repeat all estimations. To establish the CSR score *sans* industry effects, I subtract the mean industry CSR score in each calendar year (Table 3.10) from the raw CSR score of firms in the respective industry. This normalization mitigates any industry based impact on CSR ratings.

After adjusting acquirers' and target's CSR scores for industry effects, I obtain a new set of aggregated strength (AGGS), aggregated concerns (AGGC) and CSR scores (the difference between AGGS and AGGC) for acquirers and targets. This enables me to remove industry effects when calculating a new series of AGGS difference, AGGC difference and CSR difference. Comparing with pre-adjustment CSR scores, the post-adjustment scores (acquirer CSR and target CSR) become higher since all the average industry CSR scores are negative (as seen in Table 3.10). This is common when calculating (AGGS-AGGC) scores in the literature (see *e.g.* Mattingly and Berman, 2006). Therefore, the industry adjusted CSR scores are more reliable after compensating for the industry effect, *e.g.* the first and second highest CSR scores

are in the financial industry (SIC code 60-69) and Wholesale Trade and Retail Trade industry (SIC code 50-59), though the scores are negative (Table 3.10). The CSR scores for acquirers and targets are more evenly distributed across all industries after adjustment, while the difference tends to approximate a normal distribution when compared with pre-adjustment CSR scores.

The main results of this chapter are based on both raw CSR scores (as per previous sections) and industry-adjusted CSR scores (as per this section) suggesting that they apply across all industries. As all results based on adjusted CSR scores are qualitatively similar to raw CSR scores, I do not report the industry adjusted CSR-based results.

Table 3.10: Industry CSR Score by year and industry (Strength, Concern and CSR score)

A year-based industry CSR score is calculated by taking the average CSR scores for firms in a specified industry in each calendar year. This mean industry CSR score is then subtracted from each of the firms' raw CSR to make sure that any industry based impact on CSR rating is mitigated.

Industry (First two digits of the SIC code)	Agriculture, Forestry, &Fisheries (01-09)			Mineral Industries & Construction (10-17)			Manufacturing (20-39)			Transportation, Communications & Utilities (40-49)			Wholesale Trade & Retail Trade (50-59)			Financial Industry (60-69)			Service Industries (70-89)		
Year	CSR Str	CSR Con	CSR Score	CSR Str	CSR Con	CSR Score	CSR Str	CSR Con	CSR Score	CSR Str	CSR Con	CSR Score	CSR Str	CSR Con	CSR Score	CSR Str	CSR Con	CSR Score	CSR Str	CSR Con	CSR Score
1991	NA	NA	NA	0.027	0.040	-0.014	0.043	0.036	0.007	0.043	0.035	0.008	0.034	0.018	0.016	0.052	0.023	0.029	0.026	0.032	-0.006
1992	NA	NA	NA	0.034	0.040	-0.006	0.049	0.051	-0.001	0.053	0.044	0.009	0.045	0.020	0.025	0.057	0.038	0.019	0.050	0.045	0.004
1993	NA	NA	NA	0.037	0.066	-0.029	0.055	0.068	-0.014	0.059	0.057	0.002	0.052	0.038	0.014	0.064	0.049	0.015	0.049	0.047	0.002
1994	0.056	0.028	0.028	0.042	0.093	-0.051	0.058	0.078	-0.020	0.063	0.070	-0.008	0.057	0.051	0.006	0.062	0.051	0.011	0.048	0.070	-0.022
1995	0.061	0.028	0.033	0.048	0.103	-0.055	0.068	0.076	-0.008	0.058	0.072	-0.014	0.072	0.040	0.032	0.070	0.054	0.015	0.043	0.068	-0.024
1996	NA	NA	NA	0.048	0.066	-0.018	0.071	0.058	0.013	0.055	0.049	0.007	0.066	0.035	0.032	0.064	0.039	0.025	0.035	0.046	-0.011
1997	NA	NA	NA	0.063	0.086	-0.023	0.075	0.076	-0.001	0.060	0.064	-0.005	0.065	0.045	0.019	0.068	0.063	0.005	0.043	0.076	-0.033
1998	NA	NA	NA	0.064	0.099	-0.035	0.076	0.077	0.000	0.058	0.073	-0.015	0.061	0.051	0.009	0.074	0.071	0.003	0.045	0.065	-0.020
1999	NA	NA	NA	0.060	0.088	-0.028	0.081	0.082	-0.002	0.062	0.076	-0.013	0.055	0.049	0.007	0.078	0.076	0.002	0.049	0.057	-0.007
2000	NA	NA	NA	0.052	0.083	-0.031	0.080	0.082	-0.002	0.074	0.085	-0.011	0.059	0.058	0.001	0.075	0.085	-0.010	0.050	0.062	-0.012
2001	0.000	0.099	-0.099	0.045	0.093	-0.047	0.060	0.068	-0.008	0.050	0.072	-0.021	0.043	0.053	-0.010	0.042	0.052	-0.010	0.025	0.039	-0.014
2002	0.000	0.123	-0.123	0.035	0.090	-0.055	0.064	0.078	-0.014	0.056	0.085	-0.030	0.043	0.054	-0.011	0.044	0.062	-0.018	0.028	0.051	-0.024
2003	0.000	0.080	-0.080	0.022	0.059	-0.037	0.031	0.053	-0.022	0.035	0.066	-0.031	0.023	0.046	-0.023	0.035	0.041	-0.006	0.020	0.043	-0.023
2004	0.003	0.113	-0.110	0.021	0.072	-0.051	0.035	0.072	-0.037	0.030	0.074	-0.044	0.028	0.068	-0.040	0.037	0.057	-0.020	0.024	0.059	-0.035
2005	0.004	0.133	-0.129	0.017	0.082	-0.066	0.038	0.070	-0.031	0.031	0.080	-0.048	0.030	0.064	-0.034	0.029	0.051	-0.022	0.023	0.052	-0.029
2006	0.016	0.145	-0.129	0.019	0.091	-0.072	0.041	0.077	-0.036	0.032	0.089	-0.058	0.033	0.074	-0.040	0.034	0.053	-0.019	0.027	0.061	-0.034
2007	0.021	0.145	-0.124	0.021	0.095	-0.073	0.043	0.076	-0.033	0.032	0.090	-0.058	0.034	0.075	-0.042	0.031	0.053	-0.021	0.025	0.060	-0.035
2008	0.016	0.109	-0.093	0.026	0.097	-0.071	0.044	0.080	-0.036	0.037	0.102	-0.065	0.036	0.078	-0.042	0.030	0.048	-0.018	0.025	0.065	-0.040
2009	0.015	0.091	-0.076	0.026	0.100	-0.074	0.042	0.078	-0.036	0.039	0.101	-0.062	0.035	0.079	-0.044	0.030	0.048	-0.019	0.026	0.062	-0.037
2010	0.052	0.150	-0.097	0.042	0.152	-0.110	0.078	0.118	-0.040	0.090	0.146	-0.056	0.077	0.103	-0.026	0.035	0.099	-0.064	0.039	0.106	-0.067
2011	0.059	0.200	-0.141	0.042	0.170	-0.128	0.084	0.144	-0.060	0.094	0.147	-0.052	0.081	0.130	-0.049	0.036	0.125	-0.089	0.043	0.138	-0.096
2012	0.080	0.069	0.011	0.165	0.066	0.099	0.131	0.037	0.094	0.140	0.045	0.095	0.096	0.032	0.064	0.127	0.020	0.106	0.077	0.033	0.045
Average	0.027	0.108	-0.081	0.044	0.088	-0.044	0.061	0.074	-0.013	0.057	0.078	-0.021	0.051	0.057	-0.006	0.053	0.057	-0.004	0.037	0.061	-0.023

3.7.2. Intra-industry and Cross-industry deals

Previously, when investigating the impact of ATCD on M&As, I include an intra-industry dummy to control for any potential industry-level effects on the M&A completion likelihood. In a horizontal integration where the firm acquires its target from the same industry, the deal completion process is significantly less complicated and will likely result in higher completion likelihood. In this section, I extend my investigation regarding CSR differences by comparing its effect on intra- and cross- industry subsamples: intra-industry subsample if both acquirer and target are in the same industry (if the bidder's and the target's primary 3-digit SIC code coincides) and cross-industry subsample if the acquirer and the target belong to different industries (if the bidder's and the target's primary 3-digit SIC code do not coincide).

The main explanatory variable, CSR difference, as shown in Table 3.11, remains significantly negative in affecting the deal completion likelihood in both the intra-industry subsample and the cross-industry subsample. A 10% unit increase in ATCD is associated with a 8.86% increase in intra-industry deal completion likelihood, while this number declines to 7.81% in cross-industry subsample. In terms of the strength of the significance level, intra-industry deals attach more importance to between-firm CSR difference that acts as an indicator for compatibility of firms' soft attributes, *e.g.* cultural aspects. Intra-industry integration is more about integrating the target into an acquirer's own management as it acquirers or mergers production units which are highly similar, *e.g.* a firm acquirers its competitors in the same industry to create monopoly. Contrary to intra-industry deals, a cross-industry deal aims more on complementing the supply chain of a firm, which therefore has less strict requirements on corporate soft attributes. Building on this rationale, concerning the ease of pre- and/or post-integration process, between-firm CSR difference plays a more important role in intra-industry deals.

Unlike previous literature pointing out a consistent positive relation between acquirer CSR and deal completion likelihood (Deng *et al.*, 2013), I notice that the impact of acquirer CSR disappears in the cross-industry deal sample in this research.

Table 3.11: Impacts of CSR difference on deal completion likelihood: intra-industry and cross-industry subsamples

The two subsamples consist of 266 and 123 U.S. acquisitions between 1992 and 2012 respectively. I obtain the initial sample of acquisitions from Thomson Financial's Security Data Corporation (SDC) Platinum database. My final sample includes all acquisitions subject to the following selection criteria: (1) the deal value disclosed in SDC is greater than $1 million, (2) the acquirer controls less than 10% of the target's shares prior to the announcement and owns greater than 50% of the target's shares after the transaction, (3) both the acquirer and the target are publicly traded and have stock return and financial data available from Centre for Research in Security Prices (CRSP) and Compustat, respectively, (4) both the acquirer and the target are covered by the KLD Research & Analytics, Inc. (KLD) STATS database. The two subsamples are built upon full sample deals: intra-industry subsample if the acquirer and the target are in the same industry (if the bidder's and the target's primary 3-digit SIC code coincides) and the cross-industry subsample if the acquirer and the target belong to different industries (if the bidder's and the target's primary 3-digit SIC code do not coincide). All variables are defined in the Appendix. The symbols *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

Impacts of CSR difference on deal completion (Logit)

	Intra-industry deals	Marginal effect: dy/dx	Cross-industry deals	Marginal effect: dy/dx
CSR measure:				
CSR difference (absolute value)	-6.577** (4.2583)	-0.886	-4.403* (2.958)	-0.781
Characteristics of Acquirer and deal				
Acquirer CSR	4.522** (4.0975)	0.101	3.219 (2.427)	0.059
Financial leverage	0.906 (0.4474)	0.058	-2.525 (2.527)	-0.389
Relative size	-0.027 (0.1794)	-0.002	0.002 (0.001)	0.000
Deal relative size	-1.752 (1.9852)	-0.294	-3.194** (4.413)	-0.554
Market to book	0.013 (0.244)	0.001	0.058 (0.858)	0.003
ROA	-4.617 (2.401)	-0.818	-12.927** (4.256)	-0.938
Market Cap	0.187 (1.395)	0.016	0.179 (0.768)	0.010
Runup	-0.012 (0.170)	-0.001	-0.029 (0.732)	-0.002
Acquirer information asymmetry	7.466 (0.061)	0.102	-8.207 (0.025)	-0.934
Target information asymmetry	-4.708 (0.064)	-0.824	15.365 (0.228)	0.062
Hostile dummy	-1.971*** (9.327)	-0.347	-2.807*** (12.155)	-0.459
Sample size	266		123	
pseudo R-square	0.0878		0.132	
Log likelihood	-99.7335		-39.322	

3.8.Summary

This work investigates the impacts of ATCD on the likelihood of M&A events. I conclude that more M&A deals are initiated between an acquirer and a target with higher CSR proximity. A 10% unit reduction on the acquirer-target CSR proximity results in a 3.67% decrease on an M&A's initialization likelihood. In other words, the higher the ATCD, the lower the M&A likelihood, especially when the CSR divergence is centred in employee relations, environment and product dimensions.

The results from deal initiations show that the closer the acquirer-target CSR proximity, the higher the likelihood of deal completion. The probability of completing a deal is reduced by 8.65% if between-firm CSR difference increases by a 10% unit. Thus two firms with close CSR scores are more likely to merge given that such similarity brings about familiarity and trust in cultural and managerial aspects between them, thereby contributing to lower operating frictions in the deal process. I also find that the impact of acquirer CSR on deal completion disappears in the cross-industry sample, which was reported previously as consistently holding across the full sample (Deng *et al.*, 2013).

My findings are consistent with the 2012 PwC survey on deal initiation and completion. The industry has already recognized the importance of CSR engagements in a business environment, especially for the purposes of enhancing the reputation and brand of a firm. Apart from that, practitioners could further utilise CSR engagements as a means of communication, as well as a tool to understand a contracting party in addition to financial indicators. Connected to this increased importance of CSR engagements in corporate activities, future research could explore this relation to other areas of the market for corporate control.

4. THE IMPACT OF CORPORATE SOCIAL RESPONSIBILITY ON M&A PREMIUM AND WEALTH CREATION

4.1.Introduction

The fundamental role of Mergers and Acquisitions (M&As) is to strengthen shareholder's wealth and maximize firm value by creating value through operating and financial synergies, increased market power, tax considerations (through the change of capital structure) and diversifications. The question of whether M&As are value-enhancing or value-destroying has been studied over the past 40 years but yet there is no unanimous consensus upon this question. A majority of the extant literature suggests that, at best, acquiring shareholders do not lose around announcement time, while targets are more inclined to higher returns than acquirers (Travlos, 1987, Fuller *et al.*, 2002). According to Moeller *et al.* (2005), acquiring firm shareholders suffer a 12 percent loss per dollar on average around the acquisition date. It means that acquiring firms lose $240 billion in total over the four-year period between 1998 and 2001.

Most of these researches aim to identify linkages between various acquirer-, target- and deal-characteristics and announcement time abnormal returns (CARs). These quantitative (harder) measures are proved to have certain impacts on acquiring CARs. For instance, the negative relationship between acquirer size and announcement period abnormal return has been identified by Moeller *et al.* (2004) and Gorton *et al.* (2009). On the target size side, research find that small size targets tend to provide positive abnormal returns to acquirers (Hackbarth and Morellec, 2008).

More recent as well as ongoing researches have been paying more attention to qualitative (softer) factors impacting CARs. Masulis *et al.* (2007) identify two clear ways through which corporate governance mechanisms affect the profitability of a firm's acquisition activities.

Aktas *et al.* (2011) and Deng *et al.* (2013) reveal linkages between target CSR and acquirer CSR and acquisition returns.

In the paper titled 'Do financial markets care about SRI? Evidence from mergers and acquisitions' by Aktas *et al.* (2011), a positive relation between acquirer announcement time returns and the level of the target's Intangible Value Assessment (IVA) ratings is identified. This result has been indicative and suggestive since in past literature acquirers are shown to earn at best zero return at the merger announcement time. Further to these findings, they also propose a 'learning hypothesis' to explain that *'positive announcement returns imply that the acquirer learns from the target's SRI practices'*. Another paper in this area on CSR – Acquirer return by Deng *et al.* (2013), investigates whether CSR is value enhancing for acquiring firm shareholders through studying acquirers with different ratings from KLD Research & Analytics (KLD). They identified a positive relation between acquirer CSR and merger announcement returns, announcement returns on the value-weighted portfolio of the acquirer and the target, and increases in post-merger long-term operating performance. They also find that higher CSR acquirers take less time to complete a deal and the deal is more likely to complete.

In this study, I will examine the contradictory predictions regarding the association between CSR and M&A wealth creation: M&A premium, combined CARs at deal announcement and acquirer long run stock returns. Results reveal that as the CSR difference between the acquirer and target increases, the combined entity is better off: the target receives a higher premium and the announcement effect to the combined entity increases. Specifically, a 10% unit increase in ATCD will increase the general premium paid by 3.29% and CCAR (-1, 1) by 0.589%. It portrays acquiring managers' confidence in realizing more synergistic gains in such larger ATCD combinations as well as the market's. This is explained as a mutual 'learning effect'

between an acquirer and a target (Aktas *et al.*, 2011). In a longer term after deal announcement, I identigy a strong positive relation between ATCD and the two-year cumulative returns of the acquirer. This further showcases that the market is confident about the post-merger performance of high ATCD combinations, and the level of confidence is even stronger two years after the deal.

This research offers important contributions to ongoing research in M&A wealth creation and responsible investments (RI) as well as to practitioners in such areas. First, to the best of my knowledge, this study is the first to investigate acquirer-target qualitative measure differentials in influencing acquisition premiums and combined entity CARs. Previously Aktas *et al.* (2011) and Deng *et al.* (2013) both discussed CSR impacts on M&A returns from a target or an acquirer only perspective. I argue that CSR difference between an acquirer and a target may be even more important as ATCD represents the differences between the acquirer and the target in the deal process. This is interpreted in signalling theory as the receiver of the signal making a difference as to how much the signal could be understood. I fill the gap in the literature with regards to signalling theory in this chapter[6]. Second, it provides a new and innovative perspective when considering M&A benefits in due diligence. In addition to acquirer- and target- features, features of acquirer-target difference may create synergistic gains as well. It is my understanding this is revealing for both academic researchers and practitioners.

The remainder of this chapter is structured as follows: Background information regarding M&A wealth creation and the 'learning effect' will be introduced in section 4.2, alongside the development of hypotheses based on those. Section 4.3 describes the data, provides summary

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[6] See section 1.1 for a detailed discussion and relevant references on signalling theory.

statistics for the variables of interest, and outline the empirical methodology. Section 4.4 specifies the control variables and the correlation matrix and section 4.5 presents research models on the impacts of ATCD on acquisition premiums and combined cumulative abnormal returns. I present and discuss the empirical results in section 4.5. Section 4.6 summarizes and concludes the paper.

4.2.Background and development of hypotheses

4.2.1. M&A wealth creation and 'learning effect'

There has been a large amount of research into the wealth creation effect of M&As. Determinants that have been identified as acquirers financial indicators, acquirers corporate governance aspects, size of the deal and market sentiment. There is little research that measures acquirer or target qualitative aspects and investigates their impact on the deal wealth creation and long run performance.

Moeller *et al.* (2004) identify the existence of a size effect in acquirer announcement returns. This size effect suggests that there is a negative relation between acquirer returns and the size of the target - approximately two percentage higher returns for small acquirers. This has been attributed to managerial hubris, which suggests that the management of large firms pays higher acquisition premiums. Later Moeller *et al.* (2005) supported this result with new evidence, again finding that large firms destroy shareholder value with 1.55 percent lower in the announcement period abnormal returns than comparable transactions made by small firms for a sample between 1980 and 2001.

This negative relation between acquirer returns and deal size has been further studied by Gorton *et al.* (2009) who demonstrate a negative relationship too and present a dual explanation. Firstly, since managerial bonuses and compensations are frequently related to the size of the deal, managers are more inclined to be motivated by large size deals and this has been exacerbated by the classic agency conflicts. Second, takeover targets intentionally to make themselves more attractive in order to obtain a better price, by positioning themselves as commanding a large market share and being big entities. This is because a firm with a larger market share has a

stronger pricing power and market power, which helps the target to maximize their negotiating position.

Relative target size has also been found to play a role in influencing acquirer returns. Hackbarth and Morellec (2008) find that a larger target size (the larger the size of a deal) or relative size to the acquirer (the larger the size of a deal to the acquirer's size) will result in a lower post-merger stock price of the acquiring firm. Frick and Torres (2002) report an average 39 percent annual total return of high-tech firms who acquire targets whose size is roughly 1 percent of their market value. Given the above evidence related to target size and target relative size impacting acquisition returns, I will control for both those variables in further research (see below sections) on M&A wealth effects.

Given that corporate governance is highly correlated with firm value and firm investment opportunities, it is worth investigating that how or through which channel corporate governance mechanisms can influence wealth effects of such corporate acquisitions. A major consideration in answering this question is the trigger of agency problem. Masulis *et al.* (2007) identify two clear ways through which corporate governance mechanism affect the profitability of a firm's acquisition activities. Their methodology controls for CEO quality and uses both GIM[7] and BCF[8] indices as explanatory variables. However, all acquirers are large listed firms with stock prices on CRSP in my sample and all deal values are above $1 million. Moreover, in order to be included in the final sample, all acquirers and targets are large listed firms since KLD scores only large U.S. listed firms and a few Canadians. Given that all firms in my sample are large

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[7] A broad-based governance index constructed by Gompers, Ishii and Metrick.

[8] The E-index by Bebchuk, Cohen, and Ferrell.

listed U.S. firms, I assume that their corporate governance should be at a very reasonable level. For this reason, we don't control for corporate governance.

Assessing whether SRI enhances or destroys value, Aktas *et al.* (2011) identify a positive association between acquirer announcement time gains and the level of the target's social and environmental risk management. They utilize Innovest's Intangible Value Assessment (IVA) ratings as a measure of a firm's ability to deal with social and environmental risks. They conclude that social and ethical engagements add value for firms by revealing that stock market rewards the acquirer for making socially and environmentally responsible investments. To explain their sets of findings, they investigate changes of acquirers IVA ratings following acquisitions. An increase in environmental and social performance following the acquisition of SRI-aware targets has been documented. It helps to complement the hypothesis of acquirer learning from the target's SRI practices and experience (Aktas *et al.*, 2011).

In the following year, Deng *et al.* (2013) extended the sample coverage by employing KLD social rating and this results in a final sample of 1556 successful acquisitions made by 801 firms. Using this larger sample, they expanded the research on acquirer CSR engagements' influence on acquisitions' wealth effects and acquisitions' completion likelihood. In comparison to low CSR acquirers, acquisitions by high CSR acquirers result in: greater announcement time stock returns for the acquiring firm; value-weighted portfolios of both firms increasing in long-term operating performance and stock returns; both a higher likelihood and a shorter duration for deal completion. Their results support the shareholder maximization view outlined by shareholder theory.

As shown in the above two papers, acquirer returns are positively correlated with both acquirer CSR and target CSR; I will control for both acquirer and target standalone CSR as well as ATCD in announcement time return studies.

4.2.2. Development of Hypotheses

Extending from Aktas *et al.* (2011)'s learning effect which describes acquirers' improvements in social ratings after acquiring a good CSR target, it suggests that the market encourages social and ethical engagements. When an acquirer and its target have contrasting CSR images, there will be a mutual learning potential and therefore a greater potential contribution to both the industry and society as a whole. Though the integration process might experience more difficulties as it requires more negotiations between the two firms, the generally higher synergistic gains will be the reward for such an innovative combination. This is defined as 'knowledge transfer' by Vaara *et al.* (2012). Their study elucidates various impacts of national and organizational cultural differences on international acquisitions. They find that both organizational and national cultural differences are positively associated with knowledge transfer.

Except for the paper by Aktas *et al.* (2011), there is little research conducted into the investigation of a potential learning effect in the field of M&As. By using the difference between an acquirer and its target, this research will study the linkage between ATCD and premium, announcement time return and long run return as well as extend research on the 'learning effect'.

As discussed, organizational cultural differences are positively linked with knowledge transfer and learning effects. On expectation of such lifting effects and associated synergistic gains, acquiring managers are inclined to pay a higher acquisition premium as it is a positive function of the expected synergy. Hypothesis I conjectures a positive association between ATCD and acquisition premiums:

The higher the ATCD, the higher the acquisition premium.

Acquiring managers show their confidence in the performance of the combined entity by projecting a higher payable premium at the announcement time. It delivers a signal to the market participants: a higher difference in acquirer-target current business strategies/culture will benefit the combined entity by encouraging a mutual learning between the contracting parties, though the integration process may not be easy. Abnormal returns will be awarded to those firms who would make steps toward business innovations. If the market agrees with the acquiring mangers on this, I expect to observe a higher combined announcement cumulative abnormal return. Hence, Hypothesis II conjecture is:

The higher the ATCD, the higher the combined announcement time abnormal return of an acquirer and a target.

While CSR is argued to impact on announcement time returns of an acquiring firm, it has also been identified to have financial effects in the long run (Oikonomou *et al.*, 2014). In addition to studying announcement time returns, investigations on the long run acquiring firm performance provide key, additional insights towards the understanding of strategic implications of CSR impacts on post-merger integration. By refining our understanding of the long run acquisition wealth effects, we can better identify the impacts of CSR on corporate investment decisions.

In addition to providing more useful information to corporate management as well as the market, studying acquiring firm long run performance also provides help in justifying the study of premium and announcement time returns, by answering whether the premium payment will pay off and the existence of synergistic gains for the acquirer. The information users could use the research results to make more informed decisions in further business scenarios. In Hypotheses I and II, I have conjectured a positive relation between ATCD and acquisition

premiums and announcement time combined abnormal returns of an acquirer and a target. It is clearly demonstrated that the market shows a positive attitude towards mergers of two firms of contrasting CSR image for a mutual learning effect which contributes to the society as a whole. Further to Hypotheses I and II, I expect to see a positive relation between ATCD and long run acquirer returns, which leads to Hypothesis III:

The higher the ATCD, the higher the long run stock return of an acquirer.

4.3.Data, summary statistics and specification of control variables

Sample selection procedures in this chapter are similar to the previous chapter. Due to the purpose of the research in this chapter I use only the deal sample, with the non-deal sample being excluded. The sample selection criteria and sample construction procedures have been outlined in the previous chapter, but for the convenience of readers, I will reemphasise data sources, summary statistics and empirical methodology in a following part.

The initial sample of M&A deals comes from Thomson Financial SDC and consists of both completed and withdrawn deals between 1992 and 2012. As described in previous chapters, I follow conventional data criteria of M&A research (Fuller *et al.*, 2002, Harford, 2005, Deng *et al.*, 2013). Detailed sample selection criteria and procedures are specified in Section 3.4.

Premiums, acquirer announcement time returns (CAR (-1, 1)), target announcement time return (CAR (-1, 1)) and acquirer one year and two-year stock return data are extracted from databases only for the use of this chapter. Deal premiums data are from Thomson Financial SDC, whereas raw data of returns are from CRSP. For the convenience of readers, in Tables 4.1 and 4.2, I will present summary statistics for the data on acquisition returns, along with other deal statistics. Table 4.1 presents the distribution of sampled M&As according to acquirer industry and year. For visualization of this table by year, please take a look at Figure 3.e as identical deals are included in this chapter. Table 4.2 presents summary statistics for all variables for further research in this chapter.

Table 4.1: Sample distribution by Year and Industry

The sample consists of 842 completed and withdrawn U.S. and Canadian M&A deals between 1992 and 2012. The initial sample of M&A deals comes from Thomson Financial SDC, whilst the final sample includes all deals that meet the following selection criteria: (1) acquirers and targets are both publicly traded firms in the U.S. or Canada, (2) the deal value is at least $1 million, (3) the acquirer owns less than 10% of target shares prior to the acquisition announcement and more than 50% after the transaction, (4) deal type does not include spin-offs, recapitalizations, self-tender offers, repurchases, minority stake purchases, acquisitions of remaining interest, exchange offers or privatizations, (5) both acquirers and targets are covered by the KLD Research & Analytics, Inc. (KLD) STATS database, (6) both acquirers' and targets' data are available from the Centre for Research in Security Prices (CRSP) as well as Standard & Poor's Compustat North America database.

Acquirer Industry (First two digits of the SIC code)	Agriculture, Forestry, &Fisheries (01-09)	Mineral Industries & Construction (10-17)	Manufacturing (20-39)	Transportation, Communications & Utilities (40-49)	Wholesale Trade & Retail Trade (50-59)	Financial Industry (60-69)	Service Industries (70-89)	Total
1992			1		1	1		3
1993		1	1	3				5
1994			5	3		1	1	10
1995			5	1		4	1	11
1996		2	4	7			1	14
1997		1	5	4		7		17
1998		3	10	3	2	11	1	30
1999		3	11	12		2		28
2000	1	1	8	3		5	1	19
2001		2	6			4		12
2002			4	2	1	1		8
2003		1	5	1		5	4	16
2004		6	25	4	3	35	19	92
2005		5	37	10	4	15	8	79
2006	1	9	34	8	7	26	21	106
2007		7	32	4	11	28	17	99
2008		7	23	9	4	8	15	66
2009		5	27	4	1	7	7	51
2010		5	37	7	3	10	13	75
2011		4	17	6	2	12	6	47
2012		2	26	5	3	14	4	54
Total	2	64	323	96	42	196	119	842

Table 4.2: Summary statistics

The sample consists of 842 completed and withdrawn U.S. and Canadian M&A deals between 1992 and 2012. The initial sample of M&A deals comes from Thomson Financial SDC and consists of both completed and withdrawn deals between 1992 and 2012. This sample is partitioned into two subsamples (Large ATCD and Small ATCD) based on the sample median of the variable between-firm CSR difference. This table provides summary statistics for the full sample and those two subsamples, as well as tests of difference of key variables between large and small ATCD subsamples.

Variable	Full Sample (N=842)		Subsample of Large CSR Distance: A (N=422)		Subsample of Small CSR Distance: B (N=420)		Test of Difference (A-B)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
CSR difference measure								
CSR Distance	0.088	0.063	0.146	0.118	0.030	0.029	0.116***	0.089***
Acquirer Characteristics								
CSR	-0.025	-0.033	-0.011	-0.026	-0.038	-0.033	0.027***	0.007
Collateral	0.236	0.141	0.241	0.140	0.231	0.142	0.009	-0.002
Financial leverage	0.257	0.223	0.254	0.218	0.261	0.231	-0.007	-0.014
ROA	0.047	0.044	0.054	0.050	0.040	0.037	0.014**	0.013***
Market cap	8.830	8.704	9.158	9.180	8.503	8.330	0.656***	0.851***
Market to book	3.510	2.435	3.422	2.533	3.598	2.332	-0.176	0.201*
Runup	-1.236	-0.362	-1.164	-0.367	-1.315	-0.355	0.152	-0.013
Acquirer information asymmetry	0.018	0.016	0.017	0.015	0.018	0.016	-0.002**	-0.001
Hightec (dummy)	0.444	0.000	0.467	0.000	0.421	0.000	0.045	0.000
Target Characteristics								
CSR	-0.044	-0.042	-0.046	-0.056	-0.042	-0.036	-0.004	-0.052**
Collateral	0.247	0.133	0.237	0.137	0.258	0.131	-0.020	0.006
Financial leverage	0.281	0.227	0.272	0.209	0.289	0.242	-0.017	-0.033**
ROA	0.010	0.027	0.011	0.029	0.009	0.025	0.002	0.005
Market cap	7.076	6.967	7.183	7.055	6.968	6.855	0.215**	0.200
Market to book	2.689	2.116	2.491	2.143	2.890	2.097	-0.398	0.046
Target information asymmetry	0.024	0.021	0.024	0.021	0.024	0.021	0.000	0.000
Hightec (dummy)	0.444	0.000	0.479	0.000	0.410	0.000	0.069**	0.000**
Deal Characteristics								
Relative deal size	0.280	0.242	0.267	0.214	0.294	0.270	-0.027*	-0.056**
Intra-industry (dummy)	0.545	1.000	0.526	1.000	0.564	1.000	-0.038	0.000
Hostile (dummy)	0.045	0.000	0.045	0.000	0.045	0.000	0.000	0.000
Percentage of stock payment	0.429	0.391	0.390	0.218	0.467	0.476	-0.077***	-0.258***

4.4.Specification of control variables and the correlation matrix

In both the general literature review and the background introduction part, I have extensively discussed the extant literature with regards to acquisition premiums and acquisition wealth effects. I select documented acquirer-, target-, and deal- characteristics as control variables in the research framework, in order to control for the influence of these identified independent variables on the dependent variable[9].

Before moving forward to present the results, it would be worth presenting Table 4.3, a correlation matrix of all dependent and independent variables to demonstrate that correlation between any two variables. There are 12 pairs of correlation coefficients that exceed 30%, but are below 50%. They are acquirer collateral-acquirer financial leverage (31.9%), target collateral-acquirer financial leverage (37.9%), acquirer financial leverage-target collateral (33.0%), acquirer market capitalization-acquirer information asymmetry (-40.4%), acquirer market capitalization-target market capitalization (45.8%), acquirer market capitalization-relative deal size (-48.9%), acquirer information asymmetry-target information asymmetry (48.9%), target ROA-target information asymmetry (-34.8%), target information asymmetry-target market capitalization (-37.2%), target market capitalization-relative deal size (30.8%), target market capitalization-percentage of stock payment(30.9%), relative deal size- percentage of stock payment (30.1%). There are two correlation coefficients above 50%: acquirer collateral-target collateral (80.8%), and acquirer hightec dummy-target hightec dummy (77.4%).

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[9] Please read general literature review section and background section in this chapter for specification of control variables.

For the nature of this research, the two highly correlated pairs have to be included in one regression for completeness and accuracy purposes. As mentioned in section 3.4.4, in order to detect multicollinearity issues, following Belsley *et al.* (1980), I conduct collinearity diagnostics for each regression analysis in this chapter to ensure there is no potential multicollinearity problem. I apply their methods in SAS (COLLIN function) when conducting each regression analysis as outlined by Freund and Littell (1986). Essentially, this method is about calculating 'the condition indices' in SAS using COLLIN function. Belsey et al. (1980) suggest that, when this number is around 10, weak dependencies might be starting to affect the regression estimates. When this number is larger than 100, the estimates might have a fair amount of numerical error. In my regressions, the condition indices are well below 10 (the maximum number is 9.38), which implies multicollinearity is not a problem.

Table 4.3: Pearson correlation coefficients

This correlation matrix aims to demonstrate Pearson correlation coefficients between any two variables in my sample. There are 12 pairs of correlation coefficients that exceed 30%, but are below 50%. There are two pairs of correlation coefficient that above 50%: acquirer collateral-target collateral (80.8%), and acquirer hightec dummy-target hightec dummy (77.4%). In order to ensure completeness of the control variable list, acquirer and target collateral, and acquirer and target hightec variables are all included in the research models.

	CSR Difference	A_CSR	A_Collateral	A_leverage	A_ROA	A_Market cap	A_Market to book	A_Runup	A_IA	A_Hightec (dummy)	T_CSR	T_Collateral	T_leverage	T_ROA	T_Market cap	T_Market to book	T_IA	T_Hightec (dummy)	Relative deal size	Intra-industry (dummy)	Hostile (dummy)	% of stock payment
CSR Difference	1.000																					
A_CSR	0.397	1.000																				
A_Collateral	-0.033	-0.163	1.000																			
A_Financial leverage	-0.061	-0.066	0.319	1.000																		
A_ROA	0.116	0.092	-0.010	-0.258	1.000																	
A_Market cap	0.278	0.178	-0.066	-0.164	0.278	1.000																
A_Market to book	0.002	0.032	-0.057	0.086	0.197	0.136	1.000															
A_Runup	0.005	0.013	0.010	-0.073	0.079	0.043	0.054	1.000														
Acquirer information asymmetry	-0.129	-0.131	0.044	0.068	-0.258	-0.404	0.020	-0.034	1.000													
A_Hightec (dummy)	0.133	0.216	-0.272	-0.166	0.074	0.155	0.127	-0.076	0.118	1.000												
T_CSR		0.164									1.000											
T_Collateral	-0.067	-0.169	0.808	0.330	0.003	-0.109	-0.072	0.024	0.054	-0.251	-0.080	1.000										
T_Financial leverage	0.003	-0.052	0.245	0.246	-0.028	0.046	-0.013	0.005	-0.006	-0.078	0.037	0.379	1.000									
T_ROA	0.001	-0.083	0.021	0.017	0.127	0.026	0.035	-0.019	-0.228	-0.099	0.013	0.059	-0.181	1.000								
T_Market cap	0.051	-0.017	0.142	0.060	0.071	0.458	0.048	0.063	-0.103	-0.051	0.012	0.164	-0.181	0.202	1.000							
T_Market to book	-0.083	-0.014	-0.021	0.002	0.042	0.072	0.111	0.019	-0.023	0.095	-0.002	0.013	-0.038	0.111	0.129	1.000						
Target information asymmetry	-0.001	0.023	-0.059	-0.070	-0.088	-0.070	0.016	-0.008	0.489	0.230	-0.004	-0.117	0.032	-0.348	-0.372	-0.036	1.000					
T_Hightec (dummy)	0.136	0.188	-0.245	-0.152	0.060	0.165	0.107	-0.095	0.111	0.774	0.011	-0.236	-0.091	-0.107	-0.086	0.076	0.246	1.000				
Relative deal size	-0.141	-0.181	0.217	0.214	-0.173	-0.489	-0.076	0.013	0.249	-0.177	-0.027	0.247	0.021	0.138	0.308	0.031	-0.168	-0.169	1.000			
Intra-industry (dummy)	-0.106	-0.004	0.142	0.059	-0.029	-0.120	-0.002	-0.046	0.097	-0.038	-0.015	0.138	0.049	-0.104	0.027	-0.080	0.002	-0.023	0.123	1.000		
Hostile (dummy)	-0.052	-0.038	0.087	0.031	0.007	-0.002	0.035	0.018	0.002	-0.045	-0.056	0.081	-0.008	0.022	0.115	0.004	-0.047	-0.079	0.091	0.026	1.000	
Percentage of stock payment	-0.177	-0.095	-0.011	0.034	-0.222	-0.119	-0.015	0.097	0.146	-0.231	0.054	0.044	0.026	0.015	0.309	0.038	-0.055	-0.259	0.301	0.104	-0.022	1.000

4.5.Research models

Research models are presented in this section to demonstrate the control variables and the types of regressions estimated. The reasons for the inclusion of control variables are discussed in section 2 (General Literature Review) and section 4.2 (Background).

With regards to **Hypothesis I**, I specify the following OLS regression model I on analysing the relationship between ATCD and the acquisition premium.

Model I: Impact of ATCD on acquisition premium

$$Premium\ (\%) = \beta_0 + \beta_1 CSRDIFF + \beta_2 ACOLLATERAL + \beta_3 AROE + \beta_4 ATOBINQ +$$
$$\beta_5 AIA + \beta_6 TCOLLATERAL + \beta_7 TROE + \beta_8 TTOBINQ + \beta_9 TMKTCAP +$$
$$\beta_{10} TIA + \beta_{11} THIGHTEC + \beta_{12} DRELSIZE + \beta_{13} \%STOCK +$$
$$\beta_{14} INTRAIND + \beta_{15} HOSTILE + \beta_{16} COMP +$$
$$\varepsilon_{it}$$

where CSRDIFF refers to ATCD, ACOLLATERAL and TCOLLATERAL refer to acquirer and target collateral respectively, AROE and TROE refer to acquirer and target return on equity ratio respectively, ATOBINQ and TTOBINQ refer to acquirer and target Tobin q ratio respectively, AIA and TIA refers to acquirer information asymmetry and target information asymmetry respectively, TMKTCAP refers to target market capitalization, THIGHTEC refers to whether the target is a hightec firm, DRELSIZE refers to relative deal size, INTRAIND refers to intra-industry dummy, HOSTILE refers to hostile deal dummy, %STOCK refers to percentage of stock as payment method, and COMP refers to competition dummy.

The Premium 4 weeks prior to the announcement date is calculated as the premium of the offer price to the target's closing stock price 4 weeks prior to the original announcement date. All premium data comes from Thomson Financial SDC and stock price data comes from CRSP. The premium is expressed as a percentage:

$$Premium\ (\%)$$

$$= \frac{price\ paid\ per\ share - price\ per\ share\ 4\ weeks\ prior\ to\ announcement}{price\ per\ share\ 4\ weeks\ prior\ to\ announcement} \times 100$$

.

Premium is winsorised between 0% to 200% as unrealisticly large premiums may be results of inaccurate recording on the database and will therefore lead to inaccurate of regression results.

To test **Hypothesis II**, I develop OLS regression model II on the acquirer-target market value combined 3-day CAR (CCAR (-1, 1)) around the announcement time.

Model II: Impact of ATCD on acquirer-target market value combined 3-day CAR (CCAR (-1, 1)) around the announcement time:

$$CCAR\ (-1,1) = \beta_0 + \beta_1 CSRDIFF + \beta_2 ACSR + \beta_3 ACOLLATERAL + \beta_4 AROA + \beta_5 AMB +$$
$$\beta_6 AMKTCAP + \beta_7 AIA + \beta_8 AHIGHTEC + \beta_9 TCSR + \beta_{10} TCOLLATERAL + \beta_{11} TROA +$$
$$\beta_{12} TMB + \beta_{13} TMKTCAP + \beta_{14} TIA + \beta_{15} THIGHTEC + \beta_{16} DRELSIZE + \beta_{17} INTRAIND +$$
$$\beta_{18} HOSTILE + \beta_{19} \%STOCK + \varepsilon_{it}$$

where CSRDIFF refers to ATCD, ACSR and TCSR refers to acquirer and target CSR respectively, ACOLLATERAL refers to acquirer collateral, AROA refers to acquirer return on asset ratio, AMB refers to acquirer market to book ratio, AMKTCAP refers to acquirer market capitalization, AHIGHTEC refers to whether the acquirer is a hightec firm, DRELSIZE refers

to relative deal size, INTRAIND refers to the intra-industry dummy, HOSTILE refers to the hostile deal dummy, %STOCK refer to the percentage of stock as payment method, and AIA and TIA refers to acquirer information asymmetry and target information asymmetry respectively.

To test for **Hypothesis III**, I apply OLS model III on acquirer one-year and two-year stock returns after the merger announcement date. In order to compare the magnitude of ATCD's impact on announcement time returns and long run return, I keep all control variables the same with in Model II.

Model III: Impact of ATCD on acquirer one-year and two-year stock return:

$Acquirer\ one\ (two) - year\ return = \beta_0 + \beta_1 CSRDIFF + \beta_2 ACSR + \beta_3 ACOLLATERAL + \beta_4 AROA + \beta_5 AMB + \beta_6 AMKTCAP + \beta_7 AIA + \beta_8 AHIGHTEC + \beta_9 TCSR + \beta_{10} TCOLLATERAL + \beta_{11} TROA + \beta_{12} TMB + \beta_{13} TMKTCAP + \beta_{14} TIA + \beta_{15} THIGHTEC + \beta_{16} DRELSIZE + \beta_{17} INTRAIND + \beta_{18} HOSTILE + \beta_{19}\%STOCK + \varepsilon_{it}$

where CSRDIFF refers to ATCD, ACSR and TCSR refers to the acquirer and the target CSR respectively, ACOLLATERAL refers to acquirer collateral, AROA refers to acquirer return on asset ratio, AMB refers to acquirer market to book ratio, AMKTCAP refers to acquirer market capitalization, AHIGHTEC refers to whether the acquirer is a hightec firm, DRELSIZE refers to the relative deal size, INTRAIND refers to the intra-industry dummy, HOSTILE refers to the hostile deal dummy, %STOCK refer to the percentage of stock as payment method, and AIA and TIA refers to acquirer information asymmetry and target information asymmetry respectively.

4.6.Empirical results

In this section, I will investigate the association between ATCD and acquisition wealth effects. I will start from OLS regressions with acquisition premium and acquirer-target market value combined 3-day CAR (CCAR) as dependent variables respectively. To further study the sources of wealth that have been created in the deal process, I will tabulate acquirer CAR (ACAR) and CCAR for three subsamples and compare: the subsample where acquirer CSR is higher than target, the subsample where acquirer CSR is comparable with the target's and the subsample where acquirer CSR is lower than the target's.

4.6.1. Acquisition premium

As acquisition premium is the amount of money paid on top of the market value of a target, acquiring managers clearly expect important performance enhancing synergies from the combined entity if they pay a large premium to acquire a firm (Krishnan et al, 2007). The synergy comes from either an acquiring firm having an opportunity to learn from a target (acquirer learning view) or a bad CSR target being discipline and improved by an acquirer (target disciplined view). Both of these two scenarios will result in a synergy gain in the combined entity. In this section, I will 1) explore an association between ATCD and acquisition premium and 2) distinguish between acquirer learning view and target disciplined view.

For the full sample, in controlling for all known the acquirer, the target and the deal characteristics, I recognize that ATCD plays a positive role in influencing acquisition premium. Regression results (Table 4.4) show that acquirers pay a higher acquisition premiums when their target takes very different actions in social and ethical engagements from them. A 10% unit increase in ATCD will increase the general premium paid by 3.29%. When breaking down CSR engagements to 6 dimensions (Community, Diversity, Employee relations, Environment,

Product and Corporate governance), this association between acquirer-target CSR engagement difference remains strongly positive in Community, Employee relations, Environment and Product dimensions. A 10% unit increase in ATCD of the above dimensions results in a 2.69%, 2.28%, 2.33% and 1.43% increase of the acquisition premium respectively.

To further explore the aforementioned acquirer learning view and target discipline view in explaining this positive linkage, I create two subsamples where the acquirer CSR is higher than the target CSR and where the acquirer CSR is less than the target CSR. In the first subsample where the acquirer possesses a position in disciplining target regarding CSR engagements, the positive association holds and becomes even stronger than in the full sample. There is a 3.44% increase in premium as a result of a 10% unit increase in ATCD as an overall result. In breaking down dimensions, CSR difference in Employee relations, Environment and Product dimensions is accompanied by a 2.85%, 2.84% and 2.1% increase in premium respectively. However, when it comes to the subsample where the acquirer CSR is less than the target CSR, ATCD loses its impacts on the acquisition premium.

I believe this positive linkage between ATCD and the acquisition premium is highly related to a mutual 'learning effect' in the context of corporate social responsibility involvements. Often the potential synergies from acquisitions are based on integrating the intangible assets of the two firms. Hence managers search for means to create synergies that can be implemented relatively easily and are visible to investors. As social and ethical engagements are largely advertised on social media to improve firm image, integration of two firms with different CSR engagements portrays a clear and direct signal to the market that there will be an improvement in the intangible assets of the combined entity (*e.g.* firm image).

Subsample results suggest that the target discipline view can explain the strongly positive relation and the mutual 'learning effect'. Inefficient management of resources will lead to an increased likelihood of the target being acquired and disciplined by a more efficient management. In the context of corporate social responsibility, an acquirer would more likely pay more premium to acquire a target with better potential to create more synergies (*e.g.* a higher ATCD indicates a larger improvement in firm image and thus a higher synergy). This is because an acquirer is at a stronger position than a target in influencing the business strategies of the combined entity. The combined entity is more likely to operate with an improved CSR image when the acquiring firm has a better CSR than the target.

The coefficients of the control variables presented in Table 4.4 are mostly consistent with the extant literature. I observe that acquirers pay higher premium to targets with higher Tobin Q and smaller sized firm in terms of market capitalization. It indicates that acquiring managers think larger deals will less likely deliver the assumed synergy gain as they are too big to succeed, as pointed out also by Alexandridis et al (2012). Targets with higher information asymmetry are paid higher premium because it is more difficult to examine the true value of such targets. Whether a target is a hightec firm does not seem to influence an acquirer's decision on the premium paid. The percentage of stock payment is negatively related to the acquisition premium. The intra-industry dummy has some minor influence on premium payment: when acquiring a firm from the same industry, more premiums are paid since familiarity with the industry increases a manager's confidence in the anticipated synergistic gains. The competition dummy has a strongly positive influence on premiums: competition in M&As will result in paying higher premium to targets.

To summarize, there exists a positive relation between ATCD and acquisition premium as this kind of combination is expected to realize more synergies for the combined entity, *e.g.* improvements in a firm's intangible assets. This is more likely to be explained from the point of view of the target being disciplined by the market for corporate control. I see that acquiring managers expect an important synergy from acquiring a target firm with very different CSR image. To assess whether the market accepts this target discipline view or not, I will proceed to look at market reactions (announcement time combined cumulative abnormal return) to high ATCD combinations.

Table 4.4: Impacts of ATCD on acquisition Premium

The sample consists of 789 U.S. acquisitions between 1992 and 2012. I obtain the initial sample of acquisitions from Thomson Financial's Security Data Corporation (SDC) Platinum database.

Regression specifications (1)-(3) present OLS regression results for the full sample, while columns (4)-(6) and columns (7)-(9) present results for the subsample where acquirer CSR is better than target CSR and the subsample where acquirer CSR is worse than target CSR respectively.

All variables are defined in the Appendix. The symbols *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

	\(1\)	\(2\)	\(3\)	\(4\)	\(5\)	\(6\)	\(7\)	\(8\)	\(9\)
				Acquisition Premium (OLS)					
	Full sample			Sample where acquirer CSR > target CSR			Sample where acquirer CSR<target CSR		
CSR difference measure (absolute):									
CSR difference	30.823**	32.936**		24.354	34.375*		19.129	19.670	
	(2.42)	(1.98)		(1.52)	(1.71)		(1.17)	(0.98)	
Community			26.856**			24.541			14.441
			(2.55)			(1.62)			(1.28)
Diversity			0.155			0.385			-8.633
			(0.03)			(0.07)			(-1.28)
Employee relations			22.763**			28.540**			11.11
			(2.41)			(2.34)			(1.04)
Environment			23.252**			28.375**			2.643
			(2.49)			(2.14)			(0.29)
Product			14.340*			21.008*			15.546
			(1.89)			(1.91)			(1.61)
Corporate governance			-12.053			-15.769			1.644
			(-1.63)			(-1.46)			(0.18)
Acquirer Characteristics									
Collateral	-3.001	-4.463	-6.625	0.819	-1.888	-1.905	-18.258*	-18.349*	-22.163**
	(-0.46)	(-0.65)	(-1.00)	(0.08)	(-0.18)	(-0.19)	(-1.90)	(-1.73)	(-1.97)
ROE	-0.355**	-0.706**	-0.628**	0.286	-1.849	-2.415	-0.302***	-0.687**	-0.698**
	(-2.48)	(-2.41)	(-2.35)	(0.13)	(-0.55)	(-0.70)	(-3.07)	(-2.20)	(-2.12)
Tobin Q	1.660***	1.424***	1.696***	1.230**	0.966	1.314**	1.954***	1.648**	1.943***
	(4.45)	(3.48)	(4.07)	(2.26)	(1.54)	(2.18)	(3.49)	(2.54)	(3.06)
Acquirer information asymmetry		29.338	166.795		69.048	256.889		523.210	585.434*
		(0.14)	(0.84)		(0.23)	(0.94)		(1.56)	(1.73)
Target Characteristics									
Collateral	2.455	5.521	5.764	-0.400	4.271	5.081	15.013	15.651	19.915*
	(0.35)	(0.73)	(0.76)	(-0.04)	(0.33)	(0.41)	(1.56)	(1.48)	(1.66)
ROE	-1.355	-2.671	-3.821	1.954	3.437	1.371	-2.864**	-5.325	-4.732
	(-0.53)	(-0.51)	(-0.86)	(1.38)	(1.41)	(0.73)	(-2.41)	(-1.31)	(-1.18)
Tobin Q	0.393***	0.350**	0.292**	0.696***	0.527***	0.448***	-3.085***	-3.237***	-3.676***
	(2.58)	(2.35)	(2.24)	(3.92)	(3.92)	(3.56)	(-3.65)	(-2.62)	(-3.01)
Market cap	-4.609***	-3.421***	-5.222***	-5.434***	-4.692***	-6.788***	-2.542**	-0.975	-2.002
	(-4.83)	(-3.06)	(-4.25)	(-3.98)	(-2.98)	(-4.00)	(-2.10)	(-0.69)	(-1.24)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Target information asymmetry		464.183*** (2.78)	376.083** (2.57)		569.584** (2.48)	428.659** (2.29)		62.666 (0.31)	63.015 (0.32)
Hightec dummy	4.352* (1.78)	2.391 (0.84)	2.571 (0.92)	2.868 (0.79)	-1.162 (-0.29)	-0.729 (-0.18)	5.163 (1.46)	3.972 (0.94)	4.972 (1.15)
Deal Characteristics									
Relative size	-0.098 (-0.71)	-0.126 (-0.78)	-0.269 (-1.40)	-0.171 (-1.42)	-0.230 (-1.44)	-0.450*** (-2.98)	-0.004 (-0.02)	-0.089 (-0.44)	0.036 (0.22)
% of stock payment	-7.824*** (-2.82)	-8.743*** (-2.71)	-5.944* (-1.90)	-8.401** (-2.09)	-12.396*** (-2.66)	-6.751 (-1.48)	-7.882** (-2.11)	-10.109** (-2.43)	-8.420** (-2.07)
Intra- industry dummy	3.810* (1.73)	3.670 (1.43)	4.565* (1.80)	4.631 (1.46)	3.780 (1.01)	5.066 (1.40)	1.707 (0.57)	1.704 (0.47)	2.197 (0.58)
Hostile dummy	8.215 (1.52)	6.036 (0.90)	7.355 (1.17)	0.862 (0.12)	-0.151 (-0.02)	2.764 (0.35)	14.020* (1.73)	14.122 (1.34)	13.602 (1.30)
Competition dummy	10.851** (2.26)	13.067* (1.95)	12.613** (2.00)	21.527*** (2.85)	26.907*** (2.84)	24.375*** (2.89)	0.341 (0.08)	-6.490 (-0.99)	-5.825 (-0.88)
Sample size	789	608	608	423	326	326	327	249	249
Adj. R-square	0.1011	0.1374	0.189	0.1166	0.1774	0.2413	0.0836	0.085	0.091

4.6.2. Combined cumulative abnormal returns (CCAR (-1, 1))

In the previous section, a positive relation between ATCD and the acquisition premium was identified. It indicates that acquiring managers anticipate greater synergistic gains when there are more intangible assets to be exploited regarding CSR between an acquirer and a target, especially when the acquirer has potential disciplinary power over its target. In this section I will explain the market's opinion on this mutual 'learning effect' (Aktas *et al.*, 2011): the market appreciates synergistic gains if the relation between ATCD and CCAR (-1, 1) is positive. In contrast it could be hypothesized that the market discourages collaboration between firms with closer CSR engagement levels as it results in a reduction of the mutual 'learning effect' and fewer opportunities for future improvements regarding corporate social ethical cultures.

I measure abnormal returns for both acquirers and targets by estimating the market model from 200 trading days of return data ending 11 days before the merger announcement date. The CRSP value-weighted return is employed as a proxy for the market return. I take three-day cumulative daily abnormal stock returns to obtain the cumulative abnormal return CAR (-1, 1) for both acquirers and targets, from one day preceding the merger announcement to one day after the merger announcement. CCAR (-1, 1) for the merged firm (combined cumulative abnormal return) is constructed by taking the market value weighted sum of the acquirer CAR (-1, 1) and the target CAR (-1, 1). Detailed calculation of CARs is presented in Appendix C.

Table 4.5 presents estimates from multivariate OLS regressions using the value weighted combined CAR (-1, 1) as the dependent variable and ATCD as a key independent variable. I find that the coefficient estimates of ATCD are positive and significant at 5% level for the full sample (column (1)). A 10% unit increase in ATCD results in the 0.589% increase in CCAR (-1, 1). Even after controlling for various firm- and deal-specific characteristics including

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acquirer and target stand-alone CSR score, the combined entity with the larger between-firm CSR difference realizes higher 3-day combined CARs (column (2)). This result is consistent with the market's appreciation of a mutual 'learning effect'.

Columns (3) and (4) and columns (5) and (6) regressions show the impacts of ATCD on combined return two subsamples respectively. The positive significant relation in the full sample remains significant in both subsamples where the acquirer's CSR is better than the target's CSR and where the acquirer's CSR is worse than the target's CSR. The figure becomes more significant economically and statistically for the subsample where acquirer's CSR is better; in this case the impact of a 10% unit increase in between-firm CSR difference on CCAR (-1, 1) rises from 0.524% full sample to 1.380%. This is also true for the larger premium paid when the acquirer's CSR is better than the target's CSR. It suggests that the market expects a greater mutual 'learning effect' benefit for the target than for its acquirer on social/ethical aspects.

Acquirer standalone CSR score, identified as having a positive relation with the acquirer's CAR (-1, 1) (Deng *et al.*, 2013), presents a strong positive relation with combined CAR (-1, 1) in the subsample where the acquirer's CSR is worse than the target's. The means of payment in an M&A deal is one of the most important determinants of M&As' wealth effects. A high percentage of stock payment is interpreted as a reflection of an overvaluation of the acquirer's stock and is correspondingly associated with a decrease in the acquirer's stock price. In Table 4.5 regressions (1) to (6), the percentage of stock is strongly negatively related to the combined CAR (-1, 1) at the 1% level. Standard errors are all heteroscedasticity adjusted for coefficients estimation of Table 4.5.

Entering a contact with a firm with different CSR strategies is a big and impactful corporate decision as it carries a higher level of future uncertainties and risks with regards to post merger integration and delivering profit and benefits. As mentioned in chapter 3, two firms with greater ATCD are less likely to complete a deal because cultural difference and incompatibility have been widely reported to lead to merger failure and as a cause for poor merger performance. Not only regarded as an impediment in the deal process and results, a greater ATCD is also associated with future risk and uncertainties. In particular, the questions associated with integration outcomes are many because there could be so many uncertainties and unpredictable outcomes, both bad and good. On the other hand, uncertainties and risks also imply more opportunities. For instance, greater ATCD implies the existence of huge potential to learn from a contracting partner, from general CSR strategy to building a healthier firm image.

As culture is as fundamental to an organization as personality is to the individual, cultural differences are therefore considered unmodified and incompatible between two firms. We have all encountered examples of successful acquisitions between two firms with different CSR images. An example is L'Oréal acquired the Body Shop. The Body Shop presents a firm culture which considers the ethics of its products (e.g. the Body Shop opposes animal testing), whilst L'Oréal has done little to promote its social and ethical culture. It indicates that the degree of culture fit will create ease for a deal but it does not necessarily mean that two firms with different CSR strategies will not be successful. Nevertheless, when two culturally different firms reach the deal stage, it conveys the impression of 'a genuine deal' to the market after the deal buyer and seller both understand the cultural gap between them and still make a decision of merge. In order to create 'the best outcome', it will take more effort and time to bring a target up to the trade buyer's standard and make two culturally different firms compatible and profitable. The market recognise risks in this process and encourage a premium to such

combinations. In this study, after controlling for various factors affecting merger returns, ATCD shows significant positive impacts on combined CAR (-1,1),

To summarise, the market encourages two firms with large differences in CSR engagements to collaborate. Such combinations with a higher level of future uncertainties and risk are receiving a higher acquisition premium and a higher combined CAR (-1, 1). Though the negotiation and integration might be more difficult and time consuming, the financial market anticipates that there will be a mutual 'learning effect' between an acquirer and its target; therefore, such combination could achieve a higher social and ethical reward.

Table 4.5: Impacts of ATCD on acquirer-target market value combined 3-day CAR

The sample consists of 556 U.S. acquisitions between 1992 and 2012. I obtain the initial sample of acquisitions from Thomson Financial's Security Data Corporation (SDC) Platinum database.

Regression specifications (1)-(2) present OLS regression results for the full sample, while columns (3)-(4) and columns (5)-(6) present results for the subsample where the acquirer's CSR is better than the target's CSR and the subsample where acquirer CSR is worse than target CSR respectively.

All variables are defined in the Appendix. The symbols *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

	Combined CAR (-1,1) (OLS)					
	(1)	(2)	(3)	(4)	(5)	(6)
			Sample where acquirer CSR > target CSR		Sample where acquirer CSR<target CSR	
	Full sample					
CSR measure:						
CSR difference	5.89**	5.235*	7.459**	13.800**	2.15	10.199*
(absolute)	(1.98)	(1.67)	(2.03)	(2.42)	(0.38)	(1.64)
Acquirer Characteristics						
CSR		0.312		-8.404		11.544*
		(0.12)		(-1.23)		(1.82)
Collateral	4.263**	4.224**	2.54	2.556	7.743**	8.217**
	(2.45)	(2.42)	(1.2)	(1.20)	(2.28)	(2.47)
ROA	-4.509	-4.448	-5.782	-5.585	-2.291	-2.719
	(-0.86)	(-0.85)	(-0.79)	(-0.75)	(-0.37)	(-0.44)
Market to book	-0.034	-0.036	-0.065	-0.07	0.219**	0.199**
	(-0.43)	(-0.45)	(-0.77)	(-0.84)	(2.47)	(2.29)
Market cap	-0.488**	-0.479**	-0.155	-0.092	-0.685**	-0.595*
	(-2.02)	(-1.97)	(-0.44)	(-0.26)	(-2.08)	(-1.79)
Acquirer information asymmetry	-12.748	-14.478	38.78	39.218	-31.428	-0.222
	(-0.30)	(-0.34)	(0.56)	(0.57)	(-0.42)	(-0.00)
Hightec dummy	-0.082	-0.061	0.533	0.712	-0.962	-1.035
	(-0.1)	(-0.07)	(0.41)	(0.54)	(-0.89)	(-0.98)
Target Characteristics						
CSR		-3.14				
		(-0.83)				
Collateral	-5.254***	-5.278***	-1.361	-1.877	-9.485***	-9.436***
	(-2.97)	(-3.09)	(-0.57)	(-0.79)	(-2.91)	(-2.93)
ROA	0.178	0.225	1.709	1.794	2.582	3.312
	(0.11)	(0.17)	(1.16)	(1.21)	(1.00)	(1.28)
Market to book	-0.051	-0.05	-0.03	-0.031	-0.124***	-0.144***
	(-1.22)	(-1.46)	(-0.91)	(-0.95)	(-2.68)	(-3.05)
Market cap	-0.504*	-0.503**	-1.038***	-1.041***	0.006	0.007
	(-1.68)	(-1.99)	(-2.75)	(-2.79)	(0.02)	(0.02)
Target information asymmetry	-2.056	-1.561	-26.096	-27.03	45.808	35.976
	(-0.08)	(-0.05)	(-0.58)	(-0.61)	(1.18)	(0.92)
Hightec dummy	-1.058	-1.074	-1.97	-2.079	-0.363	-0.46
	(-1.34)	(-1.30)	(-1.53)	(-1.61)	(-0.36)	(-0.47)
Deal Characteristics						
Relative deal size	12.007***	11.936***	13.115***	12.907***	9.009**	8.804***
	(5.82)	(5.22)	(3.84)	(3.81)	(2.48)	(2.40)
Intra- industry dummy	0.033	0.025	0.314	0.336	0.33	0.265
	(0.06)	(0.05)	(0.43)	(0.46)	(0.41)	(0.33)
Hostile dummy	1.834	1.804	1.015	0.898	2.279	2.13
	(1.37)	(1.46)	(0.53)	(0.47)	(1.3)	(1.16)
% of stock payment	-4.58***	-4.523***	-4.325***	-4.319***	-4.064***	-4.251***
	(-6.42)	(-5.99)	(-3.64)	(-3.70)	(-4.29)	(-4.41)
Sample size	556	556	303	303	225	225
R-square	0.225	0.226	0.261	0.267	0.214	0.225

4.6.3.　Acquirer's long run returns: one year and two years after the deal announcement

In previous sections, I have explained the findings with regards to the acquisition premium and combined cumulative abnormal returns (CCAR (-1, 1)). Positive relations are reported for both situations: higher ATCD leads to higher premium and higher announcement time combined return of an acquirer and a target. I will, in this section, extend the research period to one year and two years after the deal announcement and report the impacts of ATCD on long run acquirer returns.

Long run returns are calculated as cumulative monthly returns for 12/24 months, starting from the next calendar month since the deal announcement. For instance, for the deal announced on Feb 7th, 2007, the two year return starts to cumulate from March 2007 for 24 month. All raw monthly returns are extracted from CRSP.

Results are reported in Table 4.6. The sample size is reduced from 842 acquisition deals to 579 (one year returns) /560 (two years returns) for two reasons: firstly, there are missing returns for particular CUSIPs from CRSP; secondly, a few deals announced in late 2012 are not included in the final sample since there is no corresponding return data available by the time of the data extraction (July, 2014). For one year period since deal announcement, there's not a clear conclusion on the relation between ACTD and acquirer's cumulative returns. Though there is a weakly positive relation, it is not significant enough to reach a consensus. Over a two year period, this relation becomes statistically strong and economically significant: the market awards higher ATCD combinations with higher acquirer returns. Specifically, a 10% unit increase in ATCD results in a 0.348% increase in two-year acquirer's returns.

It portrays that the market has seen and been satisfied with the post-merger performance of such combinations on a continuous basis over a two year period after the deal announcement.

This could be due to a significant increase in the acquirer's social and financial performance or the synergies from the deal. As it takes time to integrate and creating operating synergies, the economic magnitude becomes much more significant for the two year period than one year after the deal announcement.

Table 4.6: Impacts of ATCD on long run acquirer returns

The sample consists of 579/565 U.S. acquisitions between 1992 and 2012. I obtain the initial sample of acquisitions from Thomson Financial's Security Data Corporation (SDC) Platinum database.

Regression specification (1) is the OLS regression with acquirer one year returns as dependent variable, while column (2) is results for acquirer two year returns as dependent variable.

All variables are defined in the Appendix. The symbols *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

	Acquirer Long Run Return (OLS)	
	(1)	(2)
	One Year Return	Two Year Return
CSR measure:		
CSR difference	0.264	3.488**
(absolute)	(0.46)	(2.54)
Acquirer Characteristics		
Collateral	-0.167	-0.051
	(-0.61)	(-0.09)
ROA	-0.034	-0.349
	(-0.06)	(-0.35)
Market to book	-0.002	0.013
	(-0.24)	(0.63)
Market cap	0.036	-0.102
	(0.82)	(-1.13)
Acquirer information	-3.458	-27.259*
asymmetry	(-0.43)	(-1.71)
Hightec dummy	-0.136	-0.045
	(-0.85)	(-0.11)
Target Characteristics		
Collateral	0.716**	0.370
	(2.02)	(0.56)
ROA	0.512**	0.983**
	(2.04)	(2.24)
Market to book	-0.014	-0.019**
	(-1.67)	(-2.29)
Market cap	0.022	0.192*
	(0.44)	(1.93)
Target information	10.124**	
asymmetry	(2.07)	40.133***
Hightec dummy	-0.129	(2.86)
	(-0.80)	-0.180
		(-0.44)
Deal Characteristics		
Relative deal size	0.832*	1.119
	(1.91)	(1.33)
Intra- industry dummy	-0.073	0.095
	(-0.71)	(0.47)
Hostile dummy	-0.416***	-0.080
	(-2.71)	(-0.21)
% of stock payment	-0.440***	-0.456*
	(-2.97)	(-1.68)
Sample size	579	565
R-square	0.074	0.060

4.7. Conclusion

This chapter investigates the impacts of ATCD on the M&A wealth creation process. I uncover a positive relation between ATCD and the acquisition premium, which suggests that acquiring managers expect more potential synergistic gains from the integration of two firms with very contrasting CSR images. This is consistent with a 'target discipline view' when the acquirer's CSR is better than the target's CSR and the acquirer has potentially more disciplinary power over its target. Moreover, the financial market encourages collaboration of such combinations by awarding them higher announcement time cumulative abnormal returns, since this results in increased in mutual learning potential and a greater potential contribution to both the industry and society as a whole. Over a longer term (two years after the deal announcement), the market becomes more confident in higher ATCD combinations, compared to one year after the deal announcement. Specifically, a 10% unit increase in ATCD will result in an 0.348% increase in two-year acquirer returns.

Though ongoing discussion suggests that organizational and/ or geographical cultural differences have a negative impact on M&A performance (Stahl and Voigt, 2004), my research provides some refreshing idea from the perspective of synergistic gains. It not only reflects market encouragement of the collaboration between firms with different strategies/ cultures but also points out a way to improve synergistic gains and performance for those combinations. When there are large cultural and operational differences between an acquirer and a target, it is naturally more difficult for them to move forward in the negotiating process. If a deal is completed and announced in this situation, it is very likely that the expected synergistic gain is higher-than-average, which is the motive for such deals.

This work provides new insights into why CSR engagements are material and how it is related to the value creation process. I also determine key areas where further research is required to both continue and substantiate my work, such as the impacts of ATCD on long term returns of the combined entity.

5. THE IMPACT OF CORPORATE SOCIAL RESPONSIBILITY ON THE M&A METHOD OF PAYMENT

5.1. Introduction

This chapter examines whether ATCD influences the decision making of an acquisition's method of payment. Existing literature has shown that various interfirm differences impact the acquisition integration outcomes as well as post acquisition performance (Stahl and Sitkin, 2010). Interfirm difference results from the difference in firm ability, benevolence, integrity, and value congruence perceptions areas; they are proposed to converge into a generalized trust judgment or result in a state of ambivalence, depending on whether the trustworthiness attributions are consistent or conflicting. As discussed in previous chapters, CSR engagements portray a firm's preferences in terms of business ethics, business strategies and culture aspects. Two firms that behave very differently in terms of social and ethical aspects are expected to experience a tough integration stage. According to Vaara *et al.* (2012), cultural differences at the organizational level are positively associated with social conflict. Owing to this, acquiring shareholders are less likely to want to share ownership of the combined entity with selling shareholders who hold different perspectives on business operations. Cash or a higher percentage of cash may well be chosen as the merger currency since stock payment will result in loss of ownership and control.

An appropriate method of payment can help improve investment performance and hence it is crucial for the benefit of both acquiring and selling shareholders. It provides various implications to the market on how top management views the value of their firm, and the expected synergies from an M&A. For instance, the way firms pay delivers a candid assessment of a firm's stock price. Stock payment signals overvalued stock in the market in general. There are many factors to be taken into consideration when an offer has been put forward, such as

signalling effects to the market, the target's willingness to sell and payment preference, tax implications, and transaction costs if new debt is issued and the impact on the capital structure.

First, the payment method of choice is a major signalling effect from management. More cash is preferred over stock to signal a greater level of confidence in realizing the benefits of an acquisition. This is because acquiring shareholders believe their stock will eventually be worth more after synergies are realized from the deal. I identified a positive linkage between ATCD and the acquisition premium in the previous chapter. It provides evidence of acquiring managers' confidence in synergistic gains and this confidence is confirmed by the market's response via a higher announcement time abnormal return of the combined entity. Hence, I suppose that more cash will be utilized as merger currency when ATCD becomes larger.

Second, stock payment will lead to a dilution of the acquiring shareholder's power and loss of controlling power of the combined entity, irrespective of whether there is new stock issuance or not. Higher percentages of cash payment will therefore be favoured when acquiring shareholders want to keep control of the new combined entity and maintain their leading power in business strategies, operations and firm culture. When selling shareholders behave very differently from acquiring shareholders in terms of social and ethical engagements, buying shareholders may want to maintain a dominant position by buying stock by cash since CSR differences may be deemed as impediments in business operations.

Lastly, two firms with close CSR scores share more similarities in business ethics and this helps communication of trustworthiness (Kasper-Fuehrer and Ashkanasy, 2001). This valuable inter-organizational trust can facilitate integration in the field of organizational sciences (Fulmer and Gelfand, 2012). Accordingly, more stock is used as merger currency to signal the willingness to share future uncertainties and business risks when ATCD is small.

Accordingly, I examine the linkage between the choice of payment method and ATCD, using a sample that covers 842 M&A deals in North America from 1992 to 2012. Due to the nature of the KLD database, all target firms that have been included in the final sample are large listed firms in North America. A decision of exchanging stock will result in selling shareholders share ownership of an acquiring firm. Consequently, acquiring shareholders must be very careful with the choice of payment method to maximize shareholder returns and firm value as well as to maintain control of the acquiring firm.

Preliminary findings show that firms who acquire a target with a similar CSR score are inclined to use the highest percentage of stock as acquisition currency. This supports the hypothesis that similarities and information transparency both foster mutual trust in sharing post-acquisition integration risks and future operating risks. Acquiring shareholders thus do not have to worry about the reduction of their control by paying a higher percentage of cash.

Given the existence of this trend in univariate analysis, I further investigate the economic and statistical magnitude of this association between ATCD and the method of payment. After controlling for various acquirer-, target-, and deal characteristics, OLS regressions suggest that a lower percentage of stock is used as merger currency when ATCD is higher. A 10% unit increase in ATCD results in a 5% decrease in stock payment.

More specifically, I define the 'Stock-deal' dummy as 1 if the percentage of stock payment is greater than 70% and 0 if the percentage of stock payment is less than 30% and use logit regression to investigate the marginal effect of ATCD on the 'Stock-deal' likelihood. Any deals with stock payment percentage between 30% and 70% are withdrawn from the sample. It reduces the sample size from 842 to 696. Results illustrate that a 10% unit increase in CSR difference reduces the 'stock-deal' likelihood by 3%.

This study complements the extant literature on M&A methods of payment in several ways. First, it makes it clear that CSR influences the choice of payment method in various ways, as being one of the most important soft qualitative attributes of a firm. Second, it complements recent evidence that inter-organization trust and corporate governance both impact the market for corporate control. Finally it raises the importance of CSR in influencing M&A wealth creation post-integration and therefore the need for practitioners to be aware of it. There is more to consider than financial indicators alone when making an acquisition decision.

The reminder of this chapter is structured as follows: section 2 provides the theoretical framework on which this empirical work is based and the hypotheses are developed. Characteristics of the data, control variables and construction of research models are introduced in section 3. I present empirical results of various analyses in section 4 and section 5 provides the robustness tests that have been performed. Section 6 present a summary of my findings and the conclusions that are drawn from them.

5.2.Background and development of hypotheses

5.2.1. Method of payment: the existing evidence

During the past decade, there has been extensive M&A research regarding various aspects of M&As, *e.g.* takeover target prediction, method of payment, wealth effects and post-acquisition integration. Despite the large number of research efforts attempting to elucidate M&A determinants and indications, evidence still remains largely inconclusive. The subjects of "method of payment" and "wealth effects" attracts most attention from the academic community.

Method of payment has been documented as a determinant in explaining acquiring shareholder returns. During the largest merger wave in the late 1990s, a positive correlation between stock price levels and M&A activities was observed. The majority of deals in the fifth merger wave chose equity as the mode of payment, and most of these equities are overpriced in comparison to their historical price. Under an inefficient market, assets often deviate from their underlying economic value, as it had been during the Internet bubble in the late 1990s, in which period stock market valuation were very high. Under this circumstance, overvalued firms are very likely to undertake M&As in order to take advantage of their overvalued equities, while undervalued firms or relatively less overvalued firms are more likely to become M&A targets (Shleifer and Vishny, 2003). This is because acquiring firms are motivated by the opportunity to use overvalued assets as M&A currency in exchange for undervalued or less overvalued hard assets, as long as the acquirer is more highly valued than the target (Dong *et al.*, 2006). This phenomenon brings us to the current situation, where overvalued bidders tend to use stock as method of payment as long as the targets' equity is less overvalued (Ang and Cheng, 2003).

For public targets, both the method of payment itself and the signalling effect it brings will influence the acquirer's returns. If a manager believes their stock price is overvalued, he will choose to issue stock to finance the transaction; under the assumption of information asymmetries, the firm will profit from such stock issuance(Myers and Majluf, 1984). However, over time, investors learn from the market and attempt to react to such stock issuance by selling their stock which will result in a fall of stock price. Applying this concept to the M&A market, I would observe a share price fall of acquiring firms' right after the deal announcement because it signals to the market that the acquiring firm is overvalued. Therefore, some firms tend to choose cash as method of payment to signal their value to the market (Myers and Majluf, 1984), simply because investors treat stock-financing firms as overvalued ones (Shleifer and Vishny, 2003, Esty and Megginson, 2003, Heron and Lie, 2002, Linn and Switzer, 2001, Walker, 2000).

Another cause for the decreased share price of acquirers around merger announcements is that the acquirer's announcement period gain associated with stock payment usually disappears within three to five years of the M&A (Black *et al.*, 2007, Agrawal *et al.*, 1999, Rau and Vermaelen, 1998, Loughran and Vijh, 1997), implying that shareholders will realize the greatest profit only if they sell their shares at the announcement time. Moeller *et al.* (2007) also find consistent evidence to support the equity signalling theory, showing that abnormal returns to acquirers are negatively related with stock offers something not true for cash offers.

Eckbo and Thorburn (2000) suggest that if there is uncertainty of a bidder's value, then the bidder makes a cash offer, and if there is uncertainty on a target's value, stock bids are used as stock spreads the risk of overpayment.

5.2.2. Development of hypotheses

In accordance with the previous discussion and research literature, I posit that ATCD implies ideological differences between two transacting parties, in terms of business strategies, operations, and cultural aspects. these ideological differences are well documented to have a negative impact on post-acquisition integration. The larger the ideological gap between an acquirer and a target, the more difficult the integration process will be. This is because in order to seamlessly integrate two firms into one, agreement in various aspects, *e.g.* business strategies, have to be reached and documented properly. Therefore, in order to minimize hassles in negotiating with shareholders of a contracting party and to simplify the integration process, an acquiring firm may choose to 'cash out' the target shareholders. The most straightforward method would be to have cash as merger currency.

ATCD is likely to be a component in the decision making process of an acquisition's payment method. Owing to its critical impacts on various aspects of the market for corporate control, the acquisition method of payment is one of the most important areas for academic studies in the M&A area and has become one of the most comprehensively explored research areas. Given the value of M&A transactions, the payment method and related financing decisions can have significant impacts on an acquirer's ownership structure, financial leverage, subsequent financing decisions, and most importantly post-acquisition integration. The ownership structure can also have serious corporate control, future risk bearing, tax and post-acquisition integration implications for shareholders and stakeholders of both the buying firm and the selling firm. For instance, the usage of stock as an acquisition currency shows the mutual trust between an acquirer and a target with both agreeing to share future operating risks and operating performance between them. Stock payment could also convey the willingness of both to integrate corporate soft attributes into their own management. In this paper, I will examine

the impacts of ATCD on M&A payment methods on two aspects, the percentage and the likelihood of stock payment.

I posit that, in a stock-for-stock exchange, the acquirer and the target show confidence in post-acquisition operations since they agree to share future risks, benefits and uncertainties. For instance, if the acquirer derives a purchase price based on the realization of synergistic gains and those gains are not achieved, it is quite possible that the market will devalue its shares. If the seller's shareholders now own some of those shares, the value of the payment to them will decline. Furthermore, as a result of a buyer-seller stock swap, the management of the selling firm would be enrolled into the buyer's board. Thus, they would prefer to avoid stock as an acquisition currency so as to minimize the risk of failure during the post- acquisition integration; this could be inferred by the difference in corporate culture (CSR difference). Accordingly, I develop hypothesis I (H1) and hypothesis II (H2) as:

H1: The higher the ATCD, the lower the percentage of stock as acquisition currency.

H2: The higher the ATCD, the lower the likelihood of a 'stock' deal where over 70% of merger currency are in the form of stock.

5.3.Data, control variables and research methodology

5.3.1. Data

The initial sample of M&A deals comes from Thomson Financial SDC and consists of both completed and withdrawn deals between 1992 and 2012. As described in previous chapters, I follow conventional data criteria of M&A research (Fuller *et al.*, 2002, Harford, 2005, Deng *et al.*, 2013). Detailed sample selection criteria and procedures are specified in Section 3.4.

Method of payment data are extracted from databases only for the use of this chapter; for the convenience of the readers, in Tables 5.1 and 5.2, I will present summary statistics for method of payment data, along with other deal statistics. In addition to features that have been discussed in previous chapters, the features regarding method of payment are very revealing and interesting: the payment method (variable 'percentage of stock payment' and 'stock deal dummy') varies from cash heavy to stock heavy as an adjustment for future uncertainties. The acquisition currency is more likely to be cash/has a higher percentage of cash versus stock, when there is a wider gap between acquirer CSR and target CSR.

Table 5.1: Sample distribution by Year and Industry

The sample consists of 842 completed and withdrawn U.S. and Canadian M&A deals between 1992 and 2012. The initial sample of M&A deals comes from Thomson Financial SDC, whilst the final sample includes all deals that meets the following selection criteria: (1) acquirers and targets are both publicly traded firms in the U.S. or Canada, (2) the deal value is at least $1 million, (3) the acquirer owns less than 10% of target shares prior to the acquisition announcement and more than 50% after the transaction, (4) deal type does not include spin-offs, recapitalizations, self-tender offers, repurchases, minority stake purchases, acquisitions of remaining interest, exchange offers or privatizations, (5) both acquirers and targets are covered by the KLD Research & Analytics, Inc. (KLD) STATS database, (6) both acquirers' and targets' data are available from the Centre for Research in Security Prices (CRSP) as well as Standard & Poor's Compustat North America database.

Acquirer Industry (First two digits of the SIC code)	Agriculture, Forestry, &Fisheries (01-09)	Mineral Industries & Construction (10-17)	Manufacturing (20-39)	Transportation, Communications & Utilities (40-49)	Wholesale Trade & Retail Trade (50-59)	Financial Industry (60-69)	Service Industries (70-89)	Total
1992			1		1	1		3
1993		1	1	3				5
1994			5	3		1	1	10
1995			5	1		4	1	11
1996		2	4	7			1	14
1997		1	5	4		7		17
1998		3	10	3	2	11	1	30
1999		3	11	12		2		28
2000	1	1	8	3		5	1	19
2001		2	6			4		12
2002			4	2	1	1		8
2003		1	5	1		5	4	16
2004		6	25	4	3	35	19	92
2005		5	37	10	4	15	8	79
2006	1	9	34	8	7	26	21	106
2007		7	32	4	11	28	17	99
2008		7	23	9	4	8	15	66
2009		5	27	4	1	7	7	51
2010		5	37	7	3	10	13	75
2011		4	17	6	2	12	6	47
2012		2	26	5	3	14	4	54
Total	2	64	323	96	42	196	119	842

Table 5.2: Summary statistics

The sample consists of 842 completed and withdrawn U.S. and Canadian M&A deals between 1992 and 2012. The initial sample of M&A deals comes from Thomson Financial SDC and consists of both completed and withdrawn deals between 1992 and 2012. This sample is partitioned into two subsamples (Large ATCD and Small ATCD) based on the sample median of the variable between-firm CSR difference. This table provides summary statistics for the full sample and those two subsamples, as well as tests of difference of key variables between large and small ATCD subsamples.

Variable	Full Sample (N=842)		Subsample of Large CSR Distance: A (N=422)		Subsample of Small CSR Distance: B (N=420)		Test of Difference (A-B)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
CSR difference measure								
CSR Distance	0.088	0.063	0.146	0.118	0.030	0.029	0.116***	0.089***
Acquirer Characteristics								
CSR	-0.025	-0.033	-0.011	-0.026	-0.038	-0.033	0.027***	0.007
Collateral	0.236	0.141	0.241	0.140	0.231	0.142	0.009	-0.002
Financial leverage	0.257	0.223	0.254	0.218	0.261	0.231	-0.007	-0.014
ROA	0.047	0.044	0.054	0.050	0.040	0.037	0.014**	0.013***
Market cap	8.830	8.704	9.158	9.180	8.503	8.330	0.656***	0.851***
Market to book	3.510	2.435	3.422	2.533	3.598	2.332	-0.176	0.201*
Runup	-1.236	-0.362	-1.164	-0.367	-1.315	-0.355	0.152	-0.013
Acquirer information asymmetry	0.018	0.016	0.017	0.015	0.018	0.016	-0.002**	-0.001
Hightec (dummy)	0.444	0.000	0.467	0.000	0.421	0.000	0.045	0.000
Target Characteristics								
CSR	-0.044	-0.042	-0.046	-0.056	-0.042	-0.036	-0.004	-0.052**
Collateral	0.247	0.133	0.237	0.137	0.258	0.131	-0.020	0.006
Financial leverage	0.281	0.227	0.272	0.209	0.289	0.242	-0.017	-0.033**
ROA	0.010	0.027	0.011	0.029	0.009	0.025	0.002	0.005
Market cap	7.076	6.967	7.183	7.055	6.968	6.855	0.215**	0.200
Market to book	2.689	2.116	2.491	2.143	2.890	2.097	-0.398	0.046
Target information asymmetry	0.024	0.021	0.024	0.021	0.024	0.021	0.000	0.000
Hightec (dummy)	0.444	0.000	0.479	0.000	0.410	0.000	0.069**	0.000**
Deal Characteristics								
Relative deal size	0.280	0.242	0.267	0.214	0.294	0.270	-0.027*	-0.056**
Intra-industry (dummy)	0.545	1.000	0.526	1.000	0.564	1.000	-0.038	0.000
Hostile (dummy)	0.045	0.000	0.045	0.000	0.045	0.000	0.000	0.000
Percentage of stock payment	0.429	0.391	0.390	0.218	0.467	0.476	-0.077***	-0.258***
Stock deal (dummy)	0.421	0.000	0.373	0.000	0.471	0.000	-0.098***	0.000***

5.3.2. Control variables

The type of acquisition payment is highly related to a number of acquirer characteristics which are described throughout this section. Most importantly, the ability of the acquirer to obtain sufficient cash is crucial to support cash financed deals. Sufficient free cash flow balance by acquiring firms will lead to the acquisition deal being financed predominantly by cash. Cash payment can also be obtained by corporate debt financing, which requires the acquirer to have unused debt capacity. Hovakimian *et al.* (2001) identify a strong positive influence of a firm's percentage of tangible assets on its debt level since debt holders in firms with fewer tangible assets are subject to greater moral hazard risk (Myers, 1977). To measure a firm's ability to obtain cash and to control for a firm's cash reserves and its debt capacity, following Hovakimian *et al.* (2001), I include dividend payout ratio, collateral and financial leverage ratio one year prior to acquisition announcement as control variables in the regression analysis.

Myers and Majluf (1984) interpret acquisition payment methods as a signal of a bidder's asset valuation by developing a framework based on the existence of asymmetric information. The asymmetric information theory posits that the information between a firm's management and market participants is asymmetric. Based on this theory, they conclude that different methods of payment employed in M&As signal different types of valuable information to the market participants. Specifically, in a world of asymmetric information, the method of payment in an acquisition announcement delivers firm valuation information to the public. For instance, if the announced method of payment is cash, it conveys the information to the public that the bidder's equity is relatively less overvalued or undervalued; therefore, the bidder management is reluctant to use their valuable equity as payment method. In this regard, investors would appreciate a cash offer as the signal of bidder stock undervaluation while a stock offer is likely to be regarded as bad news regarding the value of the bidding firm's assets. Therefore, the

variable Runup, which refers to buy and hold abnormal return (BHAR) of a bidder's stock over a certain period preceding the acquisition announcement day, and market to book ratio are controlled for this reason (Korajczyk *et al.*, 1991, Myers and Majluf, 1984, French and Poterba, 1991). In this research, Runup is calculated from bidder's buy and hold cumulative stock returns over the 60-day period preceding the acquisition announcement date.

According to Martin (1996), Hovakimian *et al.* (2001) and Swieringa and Schauten (2007), a bidder with high growth opportunities is prone to pay in stock since they require cash for future investments. The payment method is also considered to be influenced significantly by the bidders' pre-acquisition financial situation (Deangelo and Masulis, 1980, Faccio and Masulis, 2005). Although Martin (1996) finds the relation is insignificant, return on asset (ROA) ratio of acquirer one year preceding the acquisition is controlled for in regression analysis.

Whether a bidder is public or private is also a significant factor (Chang, 1998, Bradley and Sundaram, 2004, Faccio *et al.*, 2006), though it does not concern this work since my sample consists of only publicly traded acquirers and targets. The fact that larger firms have better access to debt financing leads to cash payment becoming more feasible for large acquirers (Hovakimian *et al.*, 2001). Consequently, acquirer market capitalization is controlled for its potential impacts on the M&A payment decision.

With regards to deal characteristics, I control for relative deal size, intra-industry dummy, hostile dummy and target high-tech dummy. These are all previously identified influential variables of the acquisition method of payment. It has been proved that the larger the size of the deal, the more likely it is to be paid by stock because a large amount of cash is difficult to obtain (Martin, 1996, Moeller *et al.*, 2004). A target is more prone to accept stock as acquisition currency when there is an established certainty regarding an acquirer's future earnings and

equity value. *Ceteris paribus*, the selling firm is more prone to exchanging stock with the buyer in an intra-industry acquisition, where they are well acquainted in terms of their industry risks and prospects. Therefore, I create an intra-industry dummy to capture the conglomerate merger effect. It is defined as 1 if both acquirer and target are in the same industry, requiring them to have the same first three-digit primary SIC code, and 0 otherwise.

A number of studies have proved that information asymmetry between the acquirer and the target has an impact on the choice of payment. It is assumed that acquirers are more likely to pay by stock when their stock is overvalued, or pay by cash if their stock is undervalued (Travlos, 1987, Hansen, 1987, Fishman, 1989, Berkovitch and Narayanan, 1990, Eckbo and Thorburn, 2000, Eckbo *et al.*, 1990, Linn and Switzer, 2001, Shleifer and Vishny, 2003, Rhodes-Kropf and Viswanathan, 2004). However, Cornett and De (1991) reach the opposite conclusion regarding the impact of asymmetric information on the choice of payment method. They show that the investors will adjust their investments by referring to the payment signal. Therefore I control for two information asymmetry variables: acquirer information asymmetry and target information asymmetry.

Shareholders in the buying firm will partly lose their control of the firm if an acquirer chooses to pay by stock since newly issued stock will dilute the bidding firm shareholders' stake (Stulz, 1988, Eckbo *et al.*, 1990, Faccio and Masulis, 2005). Faccio and Masulis (2005) find evidence that, for UK M&As, managerial control is not considered to be a serious concern at low levels (below 20%) and very high levels of voting power (above 60%). For values between 20% and 60%, voting power becomes a more important concern. It suggests that if the voting rights are dispersed, shareholders do not care about the right of control, and when voting rights are highly concentrated, blockholders do not fear loss of control. In the case of a manager or director

holding an intermediate ownership of a company (20%-60%), they are less likely to choose

stock-swaps because they do not want to risk losing ownership of the firm, especially when the

target ownership is concentrated. Utilizing a sample of 846 completed acquisitions of public

and private firms by NYSE and AMEX listed buyers, Martin (1996) states a similar finding

that an intermediate range of shareholdings by buyer managers reduces stock financing, while

higher buyer stock ownership leads to more stock financing. This is the first payment method

study that includes privately held targets.

Whilst previous research presents an obvious impact of managerial control on the choice of

payment method, my sample consists of the largest U.S. firms, and as such managerial

ownership would be very dispersed and not concentrated in those firms. Hence, I don't include

managerial ownership as a variable in the regression analysis since the increase in explanatory

power is not expected to offset the lost in the degree of freedom.

To better understand the cross-sectional variation of ATCD on various aspects of the market

for corporate control, I conduct multivariate regressions on ATCD-the main explanatory

variable. When investigating my major hypotheses on the impacts of CSR difference on

method of payment in this chapter, I control for a number of previously identified influential

variables to account for the effects of those well-known influential factors on the acquisition

method of payment. Palepu (1986) suggests that inefficient management will lead to an

increased likelihood of being acquired since the market for corporate control provides a

mechanism to discipline those managers who fail to maximize a firm's market value.

Accordingly, I include ROE and ROA to capture management efficiency (Dong *et al.*, 2006).

Apart from replacing an incompetent managerial team, Hasbrouck (1985) suggests that a

takeover bid of a low Tobin Q firm is an attempt to acquire valuable resources at a cost below

that of de novo investment. As long as q is less than 1, which means that market value is less than the replacement cost, any agent desiring to enter the industry would prefer acquisition over a de novo investment. Both ROE and Tobin Q demonstrate that a better managerial competency, as well as a more outstanding operating performance, increases the M&A completion likelihood.

In order to account for the fact that high leverage will lead to a decreased likelihood of acquisition since there are far fewer financial resources available, I control for the target's financial leverage (Palepu, 1986). However, his results show an ambiguous impact from financial leverage. Nevertheless, another proxy for a firm's financial reserves, collateral, is identified to be positively associated with the M&A completion likelihood (Palepu, 1986). I include both financial leverage and collateral in my study.

Dong *et al.* (2006) find that higher target valuation is associated with a less combative offer, in terms of a lower probability of hostility, a lower probability of a tender offer and a higher probability of offer success. Price-to-book ratio is employed in their research, whereas I use market-to-book ratio, the information asymmetry variable (Moeller *et al.*, 2007, Officer *et al.*, 2009) and the runup variable. Information asymmetry is defined as the idiosyncratic volatility of the stock. It is computed as the standard deviation of the residuals from the Fama-French Three-factor (excess of the risk-free rate) (FF 3-Factor) model of daily returns within 250 trading days preceding the acquisition announcement day. Research shows that the size of a target firm will be negatively related to the likelihood of an acquisition (Rodrigues and Stevenson, 2013), therefore I include target size, relative deal size and relative size into regressions in order to control for the size effect (Moeller *et al.*, 2004, Alexandridis *et al.*, 2013). I measure relative size by using a ratio of the target's total assets over the acquirer's total assets

(Moeller *et al.*, 2004). Following on from Barnes (1990), I include the intra-industry dummy to control for industry effects. The intra-industry dummy equals 1 if the primary 3-digit acquirer's SIC code coincides with the 3-digit target's SIC code.

Before moving forward to the regression analysis stage, I present in Table 5.3, a correlation matrix of all dependent and independent variables to demonstrate that correlations between any two variables are within the threshold level. There are 12 pairs of correlation coefficients that exceed 30%, but are below 50%. They are acquirer collateral-acquirer financial leverage (31.9%), acquirer financial leverage-target collateral (33.0%), acquirer market capitalization-acquirer information asymmetry (-40.4%), acquirer market capitalization-relative deal size (-48.9%), acquirer information asymmetry-target information asymmetry (48.9%), target ROA-target information asymmetry (-34.8%), target information asymmetry-target market capitalization (-37.2%), target market capitalization-relative deal size (30.8%), target market capitalization-percentage of stock payment(30.9%), target market capitalization-stock deal dummy (33.7%), relative deal size- percentage of stock payment (30.1%), and relative deal size-stock deal dummy(30.9%). There are two pairs of correlation coefficient that above 50%, which are very high: acquirer collateral-target collateral (80.8%), and acquirer hightec dummy-target hightec dummy (77.4%).

As I mentioned in section 3.4.4, I don't include pairs of high correlation coefficient (over 50%) in one regression framework as to avoid any multicollinearity issues. In order to further ensure there are no multicollinearity issues, following Belsley *et al.* (1980), I conduct collinearity diagnostics for each analysis in this chapter to detect any potential multicollinearity problems and to ensure the accuracy of this research. I apply their methods in SAS (the COLLIN function) when conducting each regression analysis as outlined by Freund and Littell (1986). Essentially,

this method is about calculating 'the condition indices' in SAS using COLLIN function. Belsey et al. (1980) suggest that, when this number is around 10, weak dependencies might be starting to affect the regression estimates. When this number is larger than 100, the estimates might have a fair amount of numerical error. In my regressions, the condition indices are well below 10 (the maximum number is 9.38), which implies multicollinearity is not a problem.

This correlation matrix aims to present the Pearson correlation coefficients between any two variables in my sample. There are 12 pairs of correlation coefficients that exceed 30%, but are below 50%. There are two pairs of correlation coefficient that are above 50% which are highly correlated: acquirer collateral-target collateral (80.8%), and acquirer hightec dummy-target hightec dummy (77.4%). In order to ensure completeness of the control variable list, acquirer and target collateral, and acquirer and target hightec variables are all included in the research models.

	CSR Distance	A_CSR	A_Collateral	A_leverage	A_ROA	A_Market cap	A_Market to book	A_Runup	A_IA	A_Hightec (dummy)	T_CSR	T_Collateral	T_leverage	T_ROA	T_Market cap	T_Market to book	T_IA	T_Hightec (dummy)	Relative deal size	Intra-industry(dummy)	Hostile (dummy)	% of stock payment	Stock deal (dummy)
CSR Distance	1.000																						
A_CSR	0.397	1.000																					
A_Collateral A_Financial leverage	-0.033	-0.163	1.000																				
A_leverage	-0.061	-0.066	0.319	1.000																			
A_ROA	0.116	0.092	-0.010	-0.258	1.000																		
A_Market cap	0.278	0.178	-0.066	-0.164	0.278	1.000																	
A_Market to book	0.002	0.032	-0.057	0.086	0.197	0.136	1.000																
A_Runup	0.005	0.013	0.010	-0.073	0.079	0.043	0.054	1.000															
Acquirer information asymmetry	-0.129	-0.131	0.044	0.068	-0.258	-0.404	0.020	-0.034	1.000														
A_Hightec (dummy)	0.133	0.216	-0.272	-0.166	0.074	0.155	0.127	-0.076	0.118	1.000													
T_CSR		0.164									1.000												
T_Collateral T_Financial leverage	-0.067	-0.169	0.808	0.330	0.003	-0.109	-0.072	0.024	0.054	-0.251	-0.080	1.000											
T_leverage	0.003	-0.052	0.245	0.246	-0.028	0.046	-0.013	0.005	-0.006	-0.078	0.037	0.379	1.000										
T_ROA	0.001	-0.083	0.021	0.017	0.127	0.026	0.035	-0.019	-0.228	-0.099	0.013	0.059	-0.181	1.000									
T_Market cap	0.051	-0.017	0.142	0.060	0.071	0.458	0.048	0.063	-0.103	-0.051	0.012	0.164	-0.181	0.202	1.000								
T_Market to book	-0.083	-0.014	-0.021	0.002	0.042	0.072	0.111	0.019	-0.023	0.095	-0.002	0.013	-0.038	0.111	0.129	1.000							
Target information asymmetry	-0.001	0.023	-0.059	-0.070	-0.088	-0.070	0.016	-0.008	0.489	0.230	-0.004	-0.117	0.032	-0.348	-0.372	-0.036	1.000						
T_Hightec (dummy)	0.136	0.188	-0.245	-0.152	0.060	0.165	0.107	-0.095	0.111	0.774	0.011	-0.236	-0.091	-0.107	-0.086	0.076	0.246	1.000					
Relative deal size	-0.141	-0.181	0.217	0.214	-0.173	-0.489	-0.076	0.013	0.249	-0.177	-0.027	0.247	0.021	0.138	0.308	0.031	-0.168	-0.169	1.000				
Intra-industry (dummy)	-0.106	-0.004	0.142	0.059	-0.029	-0.120	-0.002	-0.046	0.097	-0.038	-0.015	0.138	0.049	-0.104	0.027	-0.080	0.002	-0.023	0.123	1.000			
Hostile (dummy)	-0.052	-0.038	0.087	0.031	0.007	-0.002	0.035	0.018	0.002	-0.045	-0.056	0.081	-0.008	0.022	0.115	0.004	-0.047	-0.079	0.091	0.026	1.000		
Percentage of stock payment	-0.177	-0.095	-0.011	0.034	-0.222	-0.119	-0.015	0.097	0.146	-0.231	0.054	0.044	0.026	0.015	0.309	0.038	-0.055	-0.259	0.301	0.104	-0.022	1.000	

| Stock deal (dummy) | | -0.181 | -0.102 | -0.017 | 0.030 | -0.212 | -0.105 | -0.024 | 0.130 | 0.132 | -0.250 | 0.051 | 0.037 | 0.021 | 0.011 | 0.337 | 0.041 | -0.057 | -0.284 | 0.309 | 0.101 | -0.010 | 0.986 | 1.000 |

5.3.3. Research models

I specify the two research models on testing aforementioned hypotheses. Model I employs the OLS regression to test for the associations between ATCD and the percentage of stock as means of payment, while Model II uses the Logistic regression to measure the impacts of CSR difference on the likelihood of a stock deal (when percentage of stock payment is over 70%).

Model I: Association between ATCD and the percentage of stock as means of payment

$$\text{\% of stock} = \beta_0 + \beta_1 \text{CSRDIFF} + \beta_2 \text{ACOLLATERAL} + \beta_3 \text{ALEVERAGE} + \beta_4 \text{AMB} + \beta_5 \text{AROA} + \beta_6 \text{ADIVPAY} + \beta_7 \text{AMKTCAP} + \beta_8 \text{ARUNUP} + \beta_9 \text{DRELSIZE} + \beta_{10} \text{INTRAIND} + \beta_{11} \text{HOSTILE} + \beta_{12} \text{THIGHTEC} + \beta_{13} \text{AIA} + \beta_{14} \text{TIA} + \varepsilon_{it}$$

where TCSR and ACSR refer to the target CSR score and the acquirer CSR score respectively, TROE refers to the target returns on equity ratio, TTOBINQ refers to the target Tobin-q ratio, TCOLLATERAL refers to the target collateral, TLEVERAGE refers to the target financial leverage, TMKTCAP refers to the target market capitalization, TSIZE refers to the target firm size, RELSIZE refers to the ratio of target size over acquirer size, TIA refers to the target information asymmetry and INTRAIND refers to the intra-industry dummy.

Model II: Impact of ATCD on likelihood of stock as merger currency

$$\text{Log odds (stock)} = \beta_0 + \beta_1 \text{CSRDIFF} + \beta_2 \text{ACOLLATERAL} + \beta_3 \text{ALEVERAGE} + \beta_4 \text{AMB} + \beta_5 \text{AROA} + \beta_6 \text{ADIVPAY} + \beta_7 \text{AMKTCAP} + \beta_8 \text{ARUNUP} + \beta_9 \text{DRELSIZE} + \beta_{10} \text{INTRAIND} + \beta_{11} \text{HOSTILE} + \beta_{12} \text{THIGHTEC} + \beta_{13} \text{AIA} + \beta_{14} \text{TIA} + \varepsilon_{it}$$

where CSRDIFF refers to ATCD, ACSR refers to the acquirer CSR, ALEVERAGE refers to the acquirer leverage, RELSIZE refers to the ratio of target size over acquirer size, DRELSIZE

refers to the relative deal size, AMB refers to the acquirer market to book ratio, AROA refers to the acquirer return on asset ratio, AMKTCAP refers to the acquirer market capitalization, ARUNUP refers to the buy and hold abnormal returns (BHAR) of the acquirer stock over 60 days preceding the acquisition announcement day, AIA and TIA refers to the acquirer information asymmetry and the target information asymmetry respectively, INTRAIND refers to the intra-industry dummy and HOSTILE refers to the hostile deal dummy.

5.4.Results

5.4.1. Univariate tests

Before conducting multivariate regression tests, I perform univariate tests to examine for the trends in the relation between ATCD and the usage of stock as merger currency. The full sample is partitioned into nine subsamples according to the order of the acquirer and the target CSR scores. The figure of stock payment percentage reaches the highest level when the acquirer CSR is comparable with the target CSR (Table 5.4 Panel 2). This subgroup also sees the greatest number of stock deals (when the percentage of stock payment is over 70%), which is almost the sum of the figures of remaining two subgroups. For the sample's breakdown see Table 5.4.

Section 3.6.2 specifies the logic and method to partition 842 deals into 9 subsamples: 'high CSR acquirer-high CSR target', 'high CSR acquirer-medium CSR target', 'high CSR acquirer-low CSR target', etc. I further arrange them into 3 panels (Table 5.4) where acquirer CSR is better than target CSR, acquirer CSR is comparable with target CSR and acquirer CSR is worse than target CSR according to their CSR scores' position, respectively. For instance, acquirer CSR may not be higher in terms of number than the target CSR in the subgroup where I claim the acquirer CSR is better than the target CSR, but its relative position must be at least one tier higher than the target's relative position.

In Table 5.4, I report figures of 'stock payment percentage', 'stock-deal dummy' and the number of stock deals for the nine subsamples and mean and median for the three organized subgroups: (a) acquirer CSR is better than target CSR, (b) acquirer CSR is comparable with target CSR and (c) acquirer CSR is worse than target CSR. Stock payment percentage is obtained from the SDC database; it represents the percentage of stock being used as merger

currency. I use this percentage number to define the 'stock-deal dummy' as 1 if the percentage

of stock payment is greater than 70% and 0 if it is less than 30%.

There are two reasons for taking 30% and 70% as cut off points for stock-deal dummy. Firstly,

it keeps 120 more deals in the sample than put 0% and 100% stock as cut off point, which

means sample size will be further reduced from 696 (30% and 70% as cut off points) to 576

(0% and 100% stock as cut off point). This is almost a loss of 20% of the deals from the full

sample. In order to ensure completeness and accuracy, I choose to define stock-dummy as 1 if

over 70% of deal value are paid in the form of stock. Further, to provide the audience the ful

picture, in the section of robustness tests (section 5.5), I re run the regressions with stock-deal

defined as 1 for 100% payment of stock. Secondly, when a deal is paid with 70% of stock, the

acquirer will have a dominant position in the board of the target. 50% - 60% of stock might not

be enough to achieve a strong power in the board because there might be other large

shareholders.

Subgroup (b) experiences both the highest mean (45.2%) and median (42.6%) of the percentage

of stock payment. 'Stock-deal dummy' average is also higher than subgroups (a)'s and (c)'s:

11.5% higher than subgroup (a) and 2.2% higher than subgroup (c). Moreover, (b) has

considerably more stock deals (97) than subgroups (a) and (c), which have 55 and 58 deals

respectively. Comparison of (a) and (c), which both have a greater between-firm CSR

difference than (b), shows that the percentage of stock payment is significantly higher for (a)

than (c), with stock payment accounting for 44.4% and 36.4% of the deal value respectively.

The overall trend shown in Table 5.4 is that firms who acquire a target with a comparable CSR

score are inclined to use the highest percentage of stock as acquisition currency. This supports

the hypothesis that similarities and information transparency both foster mutual trust in sharing

post-acquisition integration risk and future operating risk. This is consistent with and continues the story in previous chapter on the M&A likelihood: smaller ATCD increase M&A likelihood and encourages a higher percentage of stock as merger currency, as a result of the increased level of mutual trust between the two contracting parties.

Table 5.4: ATCD and usage of stock as merger currency

Acquirers are sorted and partitioned into 3 subgroups according to the order of acquirer CSR scores, acquirers that fall into the first (top) tertile are defined as 'high CSR acquirer', the second (medium) tertile acquirers are 'medium CSR acquirer' and the third (bottom) tertile acquirers are 'low CSR acquirer'. Targets are categorized into 'high CSR target', 'medium CSR target' and 'low CSR target' analogously. The 'high CSR acquirer' group is then partitioned into three subsamples according to target CSR scores, *i.e.* 'high CSR acquirer- high CSR target', 'high CSR acquirer-medium CSR target' and 'high CSR acquirer-low CSR target'. By applying the same partitioning method to 'medium CSR acquirer' and 'low CSR acquirer', I obtain 9 subsamples indicating various acquirers-targets combinations based on CSR scores. I use three subgroups to describe three possible scenarios: acquirer CSR is better than target CSR, acquirer CSR is comparable with target CSR and acquirer CSR is worse than target CSR, in terms of the position of their CSR scores respectively.

Panel 1: Stock payments where (a) Acquirer CSR is better than Target CSR

	Subsample 1: **High** CSR Acquirer and **Medium** CSR target (N=87)		Subsample 2: **High** CSR Acquirer and **Low** CSR target (N=73)		Subsample 3: **Medium** CSR Acquirer and **Low** CSR target (N=83)			
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Stockpercent	0.373	0.000	0.233	0.000	0.485	0.463	0.364	0.154
Stock_dummy	0.355	0.000	0.183	0.000	0.486	0.000	0.341	0.000
No. of stock deals	20		7		28		55	

Panel 2: Stock payments where (b) Acquirer CSR is comparable with Target CSR

	Subsample 4: **High** CSR Acquirer and **High** CSR Target (N=121)		Subsample 5: **Medium** CSR Acquirer and **Medium** CSR target (N=108)		Subsample 6: **Low** CSR Acquirer and **Low** CSR target (N=129)			
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Stockpercent	0.503	0.523	0.417	0.329	0.436	0.425	0.452	0.426
Stock_dummy	0.524	1.000	0.395	0.000	0.448	0.000	0.456	0.333
No. of stock deals	38		26		33		97	

Panel 3: Stock payments where (c) Acquirer CSR is worse than Target CSR

	Subsample 7: **Medium** CSR Acquirer and **High** CSR target (N=90)		Subsample 8: **Low** CSR Acquirer and **High** CSR target (N=71)		Subsample 9: **Low** CSR Acquirer and **Medium** CSR target (N=80)			
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Stockpercent	0.563	0.634	0.350	0.000	0.419	0.341	0.444	0.325
Stock_dummy	0.567	1.000	0.322	0.000	0.412	0.000	0.434	0.333
No. of stock deals	30		10		18		58	

5.4.2. Cross-sectional Multivariate Regression Analysis (OLS analysis)

To better understand the cross-sectional variation in the acquisition method of payment, I present estimates from multivariate regressions using the stock payment percentage (Table 5.5: OLS analysis) and 'stock-deal dummy' (Table 5.6: Logistic analysis) as dependent variables, respectively. The study on the determinants of the acquisition payment method shows a linkage with the previous two chapters on M&A likelihood and announcement time abnormal returns. In this section, I will comprehensively discuss the identified determinants of the acquisition payment method and how I construct these variables in order to control for their impact on the method of payment. Then I will present the regression analysis on the impacts of ATCD on the M&A method of payment.

To investigate the impacts of ATCD on the acquisition method of payment, I conduct multivariate OLS regressions using the percentage of stock payment as dependent variable and between-firm CSR difference as a key independent variable. I then break down CSR difference to six individual dimensions to further elucidate CSR impacts on merger currency. Results are reported in Table 5.5, for the full sample and two subsamples where acquirer CSR is better than target CSR and where acquirer CSR is worse than target CSR. The key variable 'ATCD' reports the absolute CSR difference between an acquirer and its target in terms of corporate social responsibility, however it does not distinguish between the two possible scenarios: an acquirer is less socially responsible than its target and an acquirer behaves better regarding social aspects. Repeating the full sample OLS analysis for the described subsamples helps to resolve this problem.

Regression specifications (1)-(3) present a strongly significant (at the 1% level) negative relation between ATCD and the percentage of stock payment for the full sample. Even after

controlling for various deal- and firm- characteristics, a higher level of ATCD still leads to a statistically and economically significant lower level of the stock payment percentage. More specifically, a 10% unit increase in CSR difference is associated with a 5.04% reduction in the percentage of stock payment. In terms of the large monetary value of an M&A deal, a 5.04% increase in percentage of stock payment could involve the redistribution of millions of dollars. Regression (4) reports the acquirer- target individual CSR difference in six dimension influence the percentage of stock payment to various levels. As expected, there are strong negative associations between diversity, employee relations, product and corporate governance difference and the percentage of stock payment. As stock payment indicates that target shareholders will sit on the board of the combined entity, divergence in these areas will lead to a decreased level of willingness to cooperate with people holding very different ideas in business strategies and operations. Surprisingly, CSR difference in community dimension is positively connected with the percentage of stock payment.

Columns (5) and (6) present the results from the re-estimations of OLS regressions on stock payment for the subsample where an acquirer behaves better than its target regarding corporate social aspects. The main explanatory variable remains the same: the absolute value of ATCD. As this subsample contains only deals where bidder CSR score is higher than target CSR score, the main explanatory variable 'ATCD' could be interpreted as the higher the CSR difference, the better an acquirer is at CSR engagements, when compared with its target. The OLS univariate regression shows a significant (at the 1% level) negative relation between ATCD and the percentage of stock payment. The economical magnitude remains the same after adding control variables in the regression. As shown in regression (7), diversity, employee relations and environment dimensions are strongly influencing the decision of merger currency. Results in this subsample show a stronger level in terms of both economical and statistical aspects: a

10% unit increase in CSR engagements results in a 6.66% decrease in using stock as acquisition currency.

For the other subsample where the target's CSR is better than the acquirer's, univariate regression presents an even larger decrease in stock payment percentage in association with an expansion in between-firm CSR difference, compared with estimates from the full sample and better CSR acquirer subsample. It confirms a strongly negative relation between ATCD and stock percentage at the 1% significance level. As seen in univariate regressions, with the 10% unit increase in CSR difference, 9.13% of stock is substituted by cash. However, it becomes insignificant after controlling for acquirer-, deal-, and information asymmetry- characteristics. Individual CSR dimensions of product and corporate governance are strongly negatively connected with stock payment, while environment and community dimensions are positively connected.

Collateral and return on asset ratio are strongly negatively related to the stock payment percentage. This is consistent with previous research, which posits that a higher level of collateral and a better operating performance imply a better ability to issue corporate debt, thereby raising cash (Hovakimian *et al.*, 2001, Fuller *et al.*, 2002). Though financial leverage should be positively related to stock payment in view of residual debt capacity, this relation in my sample is proved to be statistically negative. This is probably explained by my sample including only U.S. largest firms which are supposed to have a relatively higher level of cash reserves from previously issued debt. Acquirer stock price run-up, in combination with acquirer information asymmetry influences the usage of stock positively (Fuller *et al.*, 2002, Eckbo and Thorburn, 2000, Officer *et al.*, 2009). An acquirer would prefer to pay with stock if its stock price is overvalued or runs up 60 days preceding an acquisition announcement (Moeller *et al.*,

2007), because they could take advantage of the increased stock price. A bidder has great incentives to pay cash due to its ease of use, provided that they have sufficient unused debt capacity or liquid assets. Moreover, the use of cash also 'allows the bidder to avoid the significant costs of obtaining shareholder approval of pre-emptive rights exemptions and stock authorizations and the higher regulatory costs of stock offers' (Fuller *et al.*, 2002). However, a high value deal, which would require a large unused debt capacity to finance the deal in cash, would typically use an increased percentage of stock payment, despite the potential undervaluation of the stock price (Fuller *et al.*, 2002). In my sample, estimates of relative deal size variable are consistent with Fuller *et al.* (2002)'s findings, presenting a persistently significant and positive sign throughout the full sample and the two subsamples.

T-statistics reported in the table are calculated using standard errors adjusted for heteroscedasticity.

Table 5.5: Impacts of ATCD on the percentage of stock payment (OLS regression)

The sample consists of 696 U.S. acquisitions between 1992 and 2012. I obtain the initial sample of acquisitions from Thomson Financial's Security Data Corporation (SDC) Platinum database. 'Stock-deal' dummy is defined as 1 if the percentage of stock payment is greater than 70% and 0 if the percentage of stock payment is less than 30%. Therefore, any deals with stock payment percentage between 30% and 70% are withdrawn from the sample. It reduces the sample size from 842 to 696.
Regression specifications (1)-(4) present Logistic regression results for the full sample, while columns (5)-(7) and column (8)-(10) present results for the subsample where acquirer CSR is better than target CSR and the subsample where acquirer CSR is worse than target CSR respectively.
All variables are defined in the Appendix. The symbols *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

	Percentage of stock payment (OLS)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Full sample				Sample where acquirer CSR > target CSR			Sample where acquirer CSR<target CSR		
CSR difference measure (absolute):										
ATCD	-0.872***	-0.504***	-0.499***		-0.824***	-0.666***		-0.913***	0.372	
	(-7.12)	(-3.23)	(-3.21)		(-6.09)	(-4.03)		(-3.09)	(0.81)	
Community				0.189**			0.101			0.403**
				(1.98)			(0.94)			(2.21)
Diversity				-0.182***			-0.251***			0.039
				(-2.87)			(-3.54)			(0.30)
Employee relations				-0.286***			-0.371***			-0.271
				(-2.90)			(-3.18)			(-1.61)
Environment				-0.090			-0.38***			0.455**
				(-0.84)			(-3.08)			(2.30)
Product				-0.200**			-0.151			-0.302**
				(-2.34)			(-1.49)			(-2.06)
Corporate governance				-0.173*			0.074			-0.375**
				(-1.81)			(0.59)			(-2.50)
Acquirer Characteristics										
Collateral		-0.218***	-0.207***	-0.196***		-0.260***	-0.212***		-0.201*	-0.299**
		(-3.27)	(-3.2)	(-2.93)		(-2.9)	(-2.69)		(-1.75)	(-2.54)
Financial leverage		-0.331***	-0.354***	-0.344***		-0.375***	-0.413***		-0.39*	-0.223
		(-2.94)	(-3.15)	(-2.97)		(-3.12)	(-2.93)		(-1.76)	(-1.09)

Market to book		0.001	0.002	0.000		-0.001	-0.000		0.003	-0.001
		(0.26)	(0.84)	(-0.04)		(0.29)	(-0.01)		(0.42)	(-0.06)
ROA		-0.889***	-0.941***	-0.927***		-0.710***	-0.7***		-1.775***	-1.514***
		(-3.47)	(-3.81)	(-4.11)		(-2.75)	(-3.00)		(-3.9)	(-2.99)
Dividend payout ratio		0.018***	0.017***	0.017*		0.005	0.006		0.025***	0.023*
		(2.73)	(2.71)	(1.89)		(0.78)	(0.44)		(2.63)	(1.70)
Market cap		0.035***	0.026**	0.048***		0.065***	0.086***		0.012	0.016
		(2.59)	(2.09)	(3.66)		(3.87)	(5.27)		(0.57)	(0.68)
Runup		0.003***	0.003***	0.003*		0.004***	0.004**		0.003	0.003
		(3.2)	(3.28)	(1.80)		(3.45)	(2.24)		(1.17)	(0.91)
Deal characteristics										
Deal relative size		0.735***	0.758***	0.643***		0.802***	0.664***		0.736***	0.581***
		(6.92)	(7.57)	(6.25)		(5.65)	(5.04)		(4.24)	(3.42)
Intra-industry dummy		0.015	0.02	0.005		0.009	-0.021		0.005	0.001
		(0.44)	(0.6)	(0.15)		(0.21)	(-0.5)		(0.09)	(0.02)
Hostile dummy		-0.134	-0.128	-0.116		-0.218*	-0.166*		-0.024	-0.065
		(-1.5)	(-1.42)	(-1.50)		(-1.74)	(-1.73)		(-0.19)	(-0.53)
Target hightec dummy		-0.273***	-0.264***	-0.259***		-0.384***	-0.383***		-0.175***	-0.11*
		(-7.43)	(-7.37)	(-7.20)		(-8.5)	(-8.68)		(-2.95)	(-1.79)
Information asymmetry variable										
Acquirer information asymmetry		4.945*		5.667**		3.907	5.961*		5.412	5.812
		(1.82)		(2.16)		(1.19)	(1.89)		(1.18)	(1.26)
Target information asymmetry		0.157		0.149		0.851	0.532		-0.837	-1.212
		(0.11)		(0.10)		(0.55)	(0.32)		(-0.33)	(-0.45)
Sample size	842	504	511	504	449	264	264	351	217	217
R-square	0.032	0.289	0.288	0.3255	0.037	0.404	0.4776	0.021	0.234	0.3095

5.4.3. Cross-sectional Multivariate Regression Analysis (Logistic analysis)

In this subsection, I provide further evidence to support the negative relation between ATCD and stock payment. I find that, as a result of the reduced level of ease to cooperate in the future, more cash us being used as merger currency when an acquirer is very different to its target regarding CSR engagements. 'Stock-deal' dummy is defined as 1 if the percentage of stock payment is greater than 70% and 0 if the percentage of stock payment is less than 30%. Therefore, any deals with stock payment percentage between 30% and 70% are withdrawn from the sample. It reduces the sample size from 842 to 696. The main results from this subsection are consistent with results from the previous OLS regression section. They are consistent with results in the first main chapter on M&A likelihood and second main chapter on M&A premium and combined abnormal returns. All evidence supports the acquirer-target mutual trust view, indicating that acquiring shareholders are not inclined to include target firm shareholders into the board of the combined entity when there exists divergence in business strategies and operations.

In Table 5.6, for the full sample, ATCD negatively affects the likelihood of a 'stock-deal' at the 1% significance level. After controlling for identified acquirer-, deal-, and information asymmetry-characteristics, a 10% unit increase in ATCD significantly lowers the likelihood of a 'stock-deal' by 3.81%. This relation is strongly significant, both statistically and economically. In the subsample where acquirer CSR is better than target CSR, this negative relation becomes less remarkable; the marginal effect coefficient slumps from 3.81% to 2.98%, suggesting that CSR differences impact becomes smaller when an acquirer behaves better than its target. In contrary, when a target has more advantage in CSR terms than the acquirer, the impact of CSR difference on paying large amounts of stock as acquisition currency becomes

ambiguous. Individual CSR dimensions present a strongly negative relation to stock-deal likelihood in general.

Other explanatory variables show similar signs and significance levels, compare with discussions of OLS regressions in the previous section.

Table 5.6: Impacts of ATCD on 'stock-deal' (over 70% stock payment) likelihood (Logit regression)

The sample consists of 696 U.S. acquisitions between 1992 and 2012. I obtain the initial sample of acquisitions from Thomson Financial's Security Data Corporation (SDC) Platinum database.

'Stock-deal' dummy is defined as 1 if the percentage of stock payment is greater than 70% and 0 if the percentage of stock payment is less than 30%. Therefore, any deals with stock payment percentage between 30% and 70% are withdrawn from the sample. It reduces the sample size from 842 to 696.

Regression specifications (1)-(3) present Logistic regression results for the full sample, while columns (4)-(6) and columns (7)-(9) present results for the subsample where acquirer CSR is better than target CSR and the subsample where acquirer CSR is worse than target CSR respectively.

All variables are defined in the Appendix. The symbols *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

	(1)	(2)	Marginal effect(2): dy/dx	(3)	Marginal effect(3): dy/dx	(4)	(5)	Marginal effect(5): dy/dx	(6)	Marginal effect(6): dy/dx	(7)	(8)	Marginal effect(8): dy/dx	(9)	Marginal effect(9): dy/dx
				Full sample			Sample where acquirer CSR > target CSR					Sample where acquirer CSR < target CSR			
CSR difference measure (absolute):															
ATCD	-4.990*** (21.164)	-3.837** (5.374)	-0.381			-5.298*** (13.44)	-7.8*** (10.083)	-0.298			-4.475** (5.78)	3.861 (1.106)	0.511		
Community				1.168 (2.304)	0.282				0.253 (0.039)	0.054				2.657* (3.462)	0.459
Diversity				-1.155** (3.826)	-0.225				-2.956*** (7.894)	-0.259				-0.319 (0.083)	-0.078
Employee relations				-1.982** (5.655)	-0.314				-3.485** (5.249)	-0.266				-2.336* (3.074)	-0.389
Environment				-0.677 (0.542)	-0.146				-4.307** (6.472)	-0.273				4.451** (5.149)	0.520
Product				-1.363* (3.754)	-0.253				-1.838 (2.327)	-0.220				-2.308** (4.062)	-0.387
Corporate governance				-1.380* (2.811)	-0.255				0.503 (0.105)	0.111				-2.732** (4.084)	-0.413
Acquirer Characteristics															
Collateral		-1.701*** (8.111)	-0.288	-1.497** (5.765)	-0.269		-3.127*** (8.232)	-0.28	-1.633 (1.940)	-0.208		-1.119 (1.791)	-0.244	-1.921** (4.296)	-0.353
Financial leverage		-2.552*** (7.113)	-0.346	-2.780*** (7.210)	-0.358		-3.653** (4.835)	-0.287	-4.643** (5.771)	-0.274		-3.085** (4.445)	-0.427	-1.614 (1.037)	-0.318

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Market to book		-0.001 (0.001)	0	-0.004 (0.021)	-0.001		-0.006 (0.051)	-0.001	-0.012 (0.070)	-0.002		0.092 (0.583)	0.023	0.037 (0.093)	0.009
ROA		-6.751*** (7.359)	-0.394	-7.384*** (7.769)	-0.397		-4.739** (4.806)	-0.294	-5.466** (5.403)	-0.277		-17.464*** (10.785)	-0.465	-17.199*** (9.887)	-0.467
Dividend payout ratio		0.253 (1.756)	0.062	0.248 (1.378)	0.061		0.132 (0.076)	0.028	0.246 (0.202)	0.052		0.392 (0.843)	0.098	0.309 (1.017)	0.077
Market cap		0.333*** (10.169)	0.082	0.412*** (12.792)	0.102		0.784*** (15.122)	0.184	1.005*** (18.267)	0.235		0.068 (0.184)	0.017	0.083 (0.201)	0.021
Runup		0.19*** (12.430)	0.046	0.185*** (11.495)	0.045		0.146** (4.473)	0.031	0.147** (4.096)	0.030		0.427*** (10.151)	0.106	0.487*** (12.117)	0.119
Deal characteristics															
Deal relative size		5.443*** (36.417)	0.599	4.954*** (28.751)	0.592		9.031*** (23.641)	0.702	8.220*** (17.511)	0.721		3.862*** (9.258)	0.511	2.771** (4.400)	0.467
Intra-industry dummy		0.075 (0.082)	0.018	0.015 (0.003)	0.004		0.211 (0.223)	0.046	-0.196 (0.147)	-0.038		-0.022 (0.003)	-0.005	0.005 (0.000)	0.001
Hostile dummy		-0.795 (2.150)	-0.167	-0.687 (1.509)	-0.148		-1.731** (4.269)	-0.228	-1.572* (3.036)	-0.204		-0.065 (0.007)	-0.016	-0.367 (0.166)	-0.089
Target hightec dummy		-1.892*** (40.712)	-0.305	-1.872*** (37.161)	-0.305		-3.196*** (35.016)	-0.281	-3.550*** (33.685)	-0.267		-1.204*** (7.307)	-0.258	-0.739 (2.281)	-0.172
Information asymmetry variable															
Acquirer information asymmetry		40.629* (3.677)	0.605	44.627** (3.934)	0.603		42.743 (1.633)	0.702	60.508 (2.217)	0.722		24.342 (0.533)	0.535	30.524 (0.810)	0.533
Target information asymmetry		6.531 (0.318)	0.603	8.038 (0.432)	0.603		12.197 (0.534)	0.702	14.141 (0.490)	-0.064		3.553 (0.034)	0.503	2.088 (0.011)	0.409
Sample size	696	411		411		378	218		218		289	175		175	
pseudo R-square	0.036	0.332		0.3613		0.045	0.439		0.498		0.021	0.298		0.3646	
Log likelihood	-473.7015	-277.628		-277.628		-250.1985	-141.572		-141.572		-199.93	-120.4735		-120.4735	

Table 5.5 (OLS analysis) and Table 5.6 (Logistic analysis) both show that the impacts of ATCD on the M&A method of payment are statistically and economically significant. Both the percentage and likelihood of stock as acquisition currency decrease as CSR difference increases, indicating a mutual reluctance in sharing future uncertainties and operating risks. On the one hand, when acquiring a target with a worse CSR performance than its acquirer, the buying firm is reluctant to pay with either purely stock or a high percentage of stock, since there is a perceived risk of loss in reputation at the announcement time due to integrating the target with a different corporate culture into their management post-acquisition.

On the other hand, the stock payment percentage is impacted by between-firm CSR difference when a target performs better than an acquirer in corporate social responsibility terms. This could be attributed to an acquirer's reluctance in improving social engagements since a exchange of stock will result in a voting power shift in the board. This power shift in favour of a target's shareholders may cause further proposals regarding improving the CSR of the merged firm. An alternate explanation might be that they are both less confident about co-operating with a counterpart with different ethical values and corporate culture.

To sum up, the results in Table 5.4 (Univariate analysis), Table 5.5 (OLS regression analysis) and Table 5.6 (Logistic regression analysis) all show that a higher ATCD leads to a significant reduction in the stock payment percentage and likelihood. Those corporate soft attributes imply ideological differences and information asymmetry, which will cause a shared reduction in confidence for sharing future uncertainties.

This is consistent with previous results on M&A likelihood (section 3.6) and combined returns (section 4.6.2). A higher ATCD implies different business strategies, operations and culture,

all of which are likely to lead to further operating frictions in the integration process. As a result of this, two firms with very different CSR engagements are less likely to merge. When they do, acquiring shareholders are more inclined to pay cash to selling shareholders (especially when shares of the selling firm are held by shareholders with voting rights who are likely to take seats on the board), likely in order to prevent them from sitting on the board of the newly combined entity.

5.5. Robustness tests

In order to assure the robustness of the empirical results of the preceding sections, I conduct two robustness checks: industry adjusted CSR scores and re-defining 'stock-deal' as a dummy. The former aims to justify CSR scores by smoothing out any possible industrial effects, while the latter restricts a 'stock-deal' to those completely paid by stock.

5.5.1. Industry based impacts on KLD ratings

CSR scores, the most important independent variable in my research, are reviewed and assigned by KLD analytics on a yearly basis. Though it is the most widely used source for CSR ratings, the agent does not account for any industry based impact when assigning a score to a firm. This may cause a bias amongst firms in different industries, *e.g.* the industry effect may cause disparity in the assigned CSR score of a paper mill and a bank due entirely to the effects of their respective industries. For this reason, I calculate an adjusted CSR score based on the original KLD ratings[10]. For the ease of the readers, tables 5.7 provides the calculations of annual industry adjusted CSR scores.

To check the robustness of the findings in this chapter, I replace the original CSR scores with the industry-adjusted CSR scores and repeat all tests. The major findings are all consistent to a high level: this has been reflected through similar regression coefficients of estimates and significant levels. It suggests that the main results apply across all industries. I do not report all results and tables from industry-adjusted CSR scores as they are highly identical to those from

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[10] Please see section 3.7 for the logic and detailed calculations of the industrial adjusted CSR scores.

the original CSR scores. Also for this reason, I do not discuss and report the industry adjusted

CSR-based results extensively.

Table 5.7: Industry CSR Score by year and industry (Strength, Concern and CSR score)

A year-based industry CSR score is calculated by taking the average CSR scores for firms in specified industry in each calendar year. This mean industry CSR score is then subtracted from each of the firms' raw CSR to make sure that any industry based impact on CSR rating is mitigated.

Industry (First two digits of the SIC code) Year	Agriculture, Forestry, &Fisheries (01-09)			Mineral Industries & Construction (10-17)			Manufacturing (20-39)			Transportation, Communications & Utilities (40-49)			Wholesale Trade & Retail Trade (50-59)			Financial Industry (60-69)			Service Industries (70-89)		
	CSR Str	CSR Con	CSR Score	CSR Str	CSR Con	CSR Score	CSR Str	CSR Con	CSR Score	CSR Str	CSR Con	CSR Score	CSR Str	CSR Con	CSR Score	CSR Str	CSR Con	CSR Score	CSR Str	CSR Con	CSR Score
1991	NA	NA	NA	0.027	0.040	-0.014	0.043	0.036	0.007	0.043	0.035	0.008	0.034	0.018	0.016	0.052	0.023	0.029	0.026	0.032	-0.006
1992	NA	NA	NA	0.034	0.040	-0.006	0.049	0.051	-0.001	0.053	0.044	0.009	0.045	0.020	0.025	0.057	0.038	0.019	0.050	0.045	0.004
1993	NA	NA	NA	0.037	0.066	-0.029	0.055	0.068	-0.014	0.059	0.057	0.002	0.052	0.038	0.014	0.064	0.049	0.015	0.049	0.047	0.002
1994	0.056	0.028	0.028	0.042	0.093	-0.051	0.058	0.078	-0.020	0.063	0.070	-0.008	0.057	0.051	0.006	0.062	0.051	0.011	0.048	0.070	-0.022
1995	0.061	0.028	0.033	0.048	0.103	-0.055	0.068	0.076	-0.008	0.058	0.072	-0.014	0.072	0.040	0.032	0.070	0.054	0.015	0.043	0.068	-0.024
1996	NA	NA	NA	0.048	0.066	-0.018	0.071	0.058	0.013	0.055	0.049	0.007	0.066	0.035	0.032	0.064	0.039	0.025	0.035	0.046	-0.011
1997	NA	NA	NA	0.063	0.086	-0.023	0.075	0.076	-0.001	0.060	0.064	-0.005	0.065	0.045	0.019	0.068	0.063	0.005	0.043	0.076	-0.033
1998	NA	NA	NA	0.064	0.099	-0.035	0.076	0.077	0.000	0.058	0.073	-0.015	0.061	0.051	0.009	0.074	0.071	0.003	0.045	0.065	-0.020
1999	NA	NA	NA	0.060	0.088	-0.028	0.081	0.082	-0.002	0.062	0.076	-0.013	0.055	0.049	0.007	0.078	0.076	0.002	0.049	0.057	-0.007
2000	NA	NA	NA	0.052	0.083	-0.031	0.080	0.082	-0.002	0.074	0.085	-0.011	0.059	0.058	0.001	0.075	0.085	-0.010	0.050	0.062	-0.012
2001	0.000	0.099	-0.099	0.045	0.093	-0.047	0.060	0.068	-0.008	0.050	0.072	-0.021	0.043	0.053	-0.010	0.042	0.052	-0.010	0.025	0.039	-0.014
2002	0.000	0.123	-0.123	0.035	0.090	-0.055	0.064	0.078	-0.014	0.056	0.085	-0.030	0.043	0.054	-0.011	0.044	0.062	-0.018	0.028	0.051	-0.024
2003	0.000	0.080	-0.080	0.022	0.059	-0.037	0.031	0.053	-0.022	0.035	0.066	-0.031	0.023	0.046	-0.023	0.035	0.041	-0.006	0.020	0.043	-0.023
2004	0.003	0.113	-0.110	0.021	0.072	-0.051	0.035	0.072	-0.037	0.030	0.074	-0.044	0.028	0.068	-0.040	0.037	0.057	-0.020	0.024	0.059	-0.035
2005	0.004	0.133	-0.129	0.017	0.082	-0.066	0.038	0.070	-0.031	0.031	0.080	-0.048	0.030	0.064	-0.034	0.029	0.051	-0.022	0.023	0.052	-0.029
2006	0.016	0.145	-0.129	0.019	0.091	-0.072	0.041	0.077	-0.036	0.032	0.089	-0.058	0.033	0.074	-0.040	0.034	0.053	-0.019	0.027	0.061	-0.034
2007	0.021	0.145	-0.124	0.021	0.095	-0.073	0.043	0.076	-0.033	0.032	0.090	-0.058	0.034	0.075	-0.042	0.031	0.053	-0.021	0.025	0.060	-0.035
2008	0.016	0.109	-0.093	0.026	0.097	-0.071	0.044	0.080	-0.036	0.037	0.102	-0.065	0.036	0.078	-0.042	0.030	0.048	-0.018	0.025	0.065	-0.040
2009	0.015	0.091	-0.076	0.026	0.100	-0.074	0.042	0.078	-0.036	0.039	0.101	-0.062	0.035	0.079	-0.044	0.030	0.048	-0.019	0.026	0.062	-0.037
2010	0.052	0.150	-0.097	0.042	0.152	-0.110	0.078	0.118	-0.040	0.090	0.146	-0.056	0.077	0.103	-0.026	0.035	0.099	-0.064	0.039	0.106	-0.067
2011	0.059	0.200	-0.141	0.042	0.170	-0.128	0.084	0.144	-0.060	0.094	0.147	-0.052	0.081	0.130	-0.049	0.036	0.125	-0.089	0.043	0.138	-0.096
2012	0.080	0.069	0.011	0.165	0.066	0.099	0.131	0.037	0.094	0.140	0.045	0.095	0.096	0.032	0.064	0.127	0.020	0.106	0.077	0.033	0.045
Average	0.027	0.108	-0.081	0.044	0.088	-0.044	0.061	0.074	-0.013	0.057	0.078	-0.021	0.051	0.057	-0.006	0.053	0.057	-0.004	0.037	0.061	-0.023

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5.5.2. Method of Payment: Redefining a 'Stock-deal'

In Table 5.6, I report a strongly negative relation between ATCD and the likelihood of a 'stock-deal'. The dependent variable 'stock-deal' is a dummy variable that equals 1 when the percentage of stock payment is over 70% and 0 when stock payment is less than 30% in Table 5.6. In this section, I test the robustness of this negative relation by restricting the dependent variable as an 'all stock-deal' dummy, which equals 1 if the deal is completely paid by stock and 0 if the deal is a pure cash deal.

The sample size has been significantly reduced by applying this restriction on the dependent dummy. There are 120 deals (from 696 to 576) and 63 deals (from 411 to 348) missing from the full sample univariate and multivariate regressions respectively, which are a 17% and 15% cut down in percentage respectively. The subsample where acquirer CSR is worse than target CSR experiences a larger dropdown (20% and 18% respectively for uni- and multi-variate regressions) than the subsample where acquirer CSR is better (12% for both uni- and multi-variate regressions). I understand this as reflective of a higher degree of reluctance to engage in a stock-only deal, when an acquirer is not engaging in CSR activities as its target does.

The relation between ATCD and the likelihood of an 'all stock-deal' remains negative still. A 10% unit increase in ATCD results in a 3.060% (3.810% in the previous subsection) decrease in the likelihood of an 'all stock-deal' for the full sample, while this figure is 2.710% (2.980% in the previous subsection) for the subsample where the target CSR is better than its acquirer's. Consequently an acquirer that does engage much in CSR activities compared to its target shows more reluctance in paying with stock, either because of lack of confidence in absorbing the target's management and corporate culture with regard to CSR or unwillingness to share future uncertainties and risks in damaging its social reputation. Sign and significance for other

controlling acquirer- and deal- related variables remain similar. In conclusion, robustness check results are consistent with the preceding sections and support my hypotheses.

Table 5.8: Impacts of ATCD on 'all stock-deal' likelihood (Logistic regression)

The sample consists of 576 U.S. acquisitions between 1992 and 2012. I obtain the initial sample of acquisitions from Thomson Financial's Security Data Corporation (SDC) Platinum database.

'All Stock-deal' dummy is defined as 1 if the deal is paid completely by stock and 0 if it is a pure cash deal. Therefore, any deals with stock payment percentage between 0% and 100% are withdrawn from the sample. It reduces the sample size from 842 to 576. Regression specifications (1)-(2) present Logistic regression results for the full sample, while columns (3)-(4) and columns (5)-(6) present results for the subsample where acquirer CSR is better than target CSR and the subsample where acquirer CSR is worse than target CSR respectively. All variables are defined in theAppendix. The symbols *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

				Stock payment (Logit)					
	(1)	(2)	Marginal effect (2): dy/dx	(3)	(4)	Marginal effect (4): dy/dx	(5)	(6)	Marginal effect (6): dy/dx
	full sample			Sample where acquirer CSR > target CSR			Sample where acquirer CSR<target CSR		
CSR measure:									
CSR difference (absolute)	-5.929*** (20.601)	-2.682 (1.808)	-0.306	-5.172*** (10.384)	-5.888** (4.796)	-0.271	-8.020*** (10.546)	1.122 (0.055)	0.273
Acquirer Characteristics									
Collateral		-1.718** (5.765)	-0.256		-3.260** (6.427)	-0.258		-0.801 (0.655)	-0.166
Financial leverage		-4.191*** (12.520)	-0.333		-4.330** (5.014)	-0.267		-4.777** (5.719)	-0.380
Market to book		0.035* (2.760)	0.008		0.020 (0.003)	0.004		0.044 (0.079)	0.011
ROA		-15.700*** (18.265)	-0.340		-11.433** (4.542)	-0.272		-22.165* (10.083)	-0.385
Dividend payout ratio		0.395 (2.316)	0.093		0.020 (0.003)	0.004		0.517 (0.848)	0.127
Market cap		0.297** (5.761)	0.069		0.720*** (10.529)	0.162		-0.025 (0.018)	-0.006
Runup		0.209*** (11.325)	0.048		0.175** (5.511)	0.036		0.460*** (7.601)	0.113
Deal characteristics									
Relative deal size		6.029*** (32.249)	0.655		8.972*** (19.720)	0.727		4.457*** (8.053)	0.597
Intra-industry dummy		0.099 (0.104)	-0.022		0.126 (0.065)	0.026		-0.225 (0.235)	-0.052
Hostile dummy		-0.450 (0.615)	-0.093		-1.343 (2.406)	-0.183		0.124 (0.022)	0.030
Target hightec dummy		-1.815*** (27.777)	-0.263		-2.970*** (25.651)	-0.253		-1.120** (4.213)	-0.215
Information asymmetry variable									
Acquirer information asymmetry		41.717* (2.911)	0.660		42.7041 (1.482)	0.728		25.761 (0.422)	0.615
Target information asymmetry		7.413 (0.321)	0.659		13.9336 (0.565)	0.728		-4.986 (0.048)	-0.381
Sample size	576	348		323	192		232	144	
Pseudo R-square	0.045	0.359		0.041	0.418		0.054	0.356	
Log likelihood	-364.7265	-146.1895		-197.723	-64.7455		-150.8835	-64.5565	

5.6. Conclusion

This paper continues and completes the investigation on the impact of ATCD on M&A events. I uncover a negative relation both between ATCD and the percentage of stock as acquisition currency, and with the likelihood of employing stock as the main method of payment. Specifically, a 10% unit increase in between-firm CSR difference will reduce the stock payment percentage by approximately 5%. Whereas, a higher fraction of stock is preferred as a merger currency to convey that seller and buyer are willing to share associated future uncertainties and profits, especially since a lower ATCD suggests a lower level of ideological difference and may result in a higher degree of reliability between contracting parties. From a firm's perspective, collaboration with a contracting agent from a similar ideological domain would be the most preferable option; in this situation they are more inclined to use stock as the main means of payment.

Instead of standing as a standalone chapter that elucidates a negative association between ATCD and usage of stock as merger currency, this chapter continues and completes the research of the previous two main chapters on M&A likelihood, M&A premium and announcement time abnormal returns. A higher ATCD indicates the existence of a higher ideological difference in business strategies, operations and cultural aspects. Those stand as strong impediments in post-acquisition integration, which largely reduce a firm's interests in merging with a contracting party with very different CSR engagements. When they do choose a contacting party with a large CSR difference, cash is preferred as merger currency to stock in order to prevent target shareholders increased presence in the merged combined entity. Associated M&A returns are consistent with current literature findings on the negative linkage between stock payment and announcement time abnormal returns (Travlos, 1987, Fuller *et al.*, 2002).

6. CONCLUSIONS

I extend current M&A literature by proposing that acquirer-target CSR difference, as indicative of the difference in social and ethical characters of two firms, is a compelling factor in various aspects of the market for corporate control. This relation is verified to be a bilateral interaction between an acquirer and its target, rather than having the unilateral impact that has previously been suggested. It is my conjecture that the reason for this is that CSR implies mutual trust, which acts as a mutual pathway to connect contracting parties. At the firm level, mutual trust is built on the recognition and acceptance of common business strategies and corporate culture contributes to this common aim by attempting to maximize firm value. Therefore, engagements in CSR activities are no longer considered just as a symbol of a firm's character, such as conveying an eco-friendly image, but have also become a means of communication in the current business environment.

Overall, in this thesis, I have identified that a higher ATCD will lead to (1) decreased likelihood of deal initialization and completion, a 10% unit increase in ATCD leads to a 8.65% decrease of the probability of completing a deal. This is interpreted as a decreased magnitude of mutual trust between two firms with contrasting CSR image; (2) lower percentage and likelihood of stock payment, a 10% unit increase in ATCD results in a 5% decrease of stock payment. As a result of decreased mutual trust, less percentage of stock is employed as method of payment as a means to reduce the voting share of target shareholders that hold different opinions in the board of an acquiring firm; (3) higher payments of premiums, higher announcement time combined return of an acquirer and a target, and higher 2-year acquirer returns. When two firms with larger ATCD have made the decision of a merger, it is more likely to be a concrete and determined decision as it will take more effort to integrate the two firms. Thus, they will not bother to merge if they do not foresee a higher certainty of higher synergistic gains. The market

appreciates such combinations by awarding them higher announcement time and long run returns.

The existence of a large difference in social and ethical aspects leads to increased uncertainties and disagreements concerning strategic issues in the negotiating process. As a result, the level of mutual trust is likely reduced between two contracting parties and this will lead to the failure of the negotiation and withdrawal of a deal. The announcement of a deal between an acquirer and a target with large CSR difference conveys a higher level of expected synergy because a firm would not bother to acquire a target that behaves differently in social and ethical aspects and is difficult to integrate unless it foresees a higher-than-average expected synergy. Therefore, the acquirer is inclined to pay for the expected synergy via a higher premium. The market appreciates the combination of two firms with such contrasting CSR images: the combinations with higher ATCD are awarded higher market-value weighted announcement time combined returns and acquirers receive a higher return until two years after the announcement.

As CSR has attracted more interests and attentions from both the academia and the industry, I believe there has been and will continue to be an increasingly important impact of CSR on various aspects of a firm, *e.g.* corporate investment decisions and operating strategies. This work provides some insights into why CSR engagements are material and how they relate to the value creation process. From this perspective, this research would offer insights for both firm management and fund managers, by providing additional to publicly available financial statements. As a significant relation is identified between ATCD and the merger likelihood, a firm's CSR attributes could be used as a variable to predict the likelihood of a deal happening. By attempting to predict these events, a merger arbitrage strategy could be executed for the purchase of stock in a predicted target before the acquisition and sell it at a higher price at the

merger announcement time. Moreover, incorporating CSR into the target prediction model enables investment professionals to have a fresh view of M&A arbitrage and design new styles of investments. Furthermore, a higher between-firm CSR difference leads to higher acquisition premium and higher announcement time return as well as 2-year post merger return. It suggests that fund managers could use CSR metrics to make more informed decisions with regards to potential investments. For instance, buying share of an acquirer who acquirers a target with contrasting CSR image and hold for up to 2 years.

The practical implications also extend to corporate management, in particular, raising the awareness of CSR issues in corporate decision-makings especially when making or taking M&A offers. It suggests that firms with different CSR perspectives are more likely to experience failures at all stages of a deal. The use of the CSR metrics would allow firms to consider these cultural issues at the due diligence stage, rather than at the post-merger integration stage only. Empirical results show that it is less likely two firms with higher ATCD could merge however, the combined return is higher if they do so. This phenomenon demonstrates that there is not a template for 'the best culture' and both firms benefit from considering the strengths of each culture. However, the ultimate aim of a firm is to create value for its shareholders and stakeholders. The focus on business value is essential to positioning CSR as well as culture in a way that firm management will understand and support it. By understanding the impacts of CSR on firm value and as an important attribute of firm culture, management can use CSR as an effective tool for achieving post-merger integration objectives.

Apart from implications on investment professionals and firm management, I also determine key areas where further research is required to both continue and substantiate my work. This includes the mechanism through which CSR affects various aspects of M&As. It would be

beneficial for investment professionals to further understand how, in a CSR context, an acquisition add value to stakeholders and at what stage. Another area is that of the impact of CSR on longer-term firm performance and shareholder returns, *i.e.* post the initial 5-year period. It would also be interesting to look into the chronological evolution of CSR impacts on corporate actions and other aspects.

From the point of strategic research, investigations into the link between post-merger integration styles and long term firm returns will provide useful insights for scholars both in the area of M&As and business strategy. The post-merger integration process has always been a complex process and an important determinant of the financial success of a deal. It involves combining and rearranging the acquirer's and the target's businesses to recognise the potential synergies that usually motivates the deal. Research on the interaction of firm's CSR attributes and the integration process will extend post-merger integration literature in a previously unconsidered CSR context. This could be further extended to the longer-term M&A wealth creation, by investigating the patterns of post-merger integration of firms' CSR factors and long run return of the combined entity.

In conclusion, CSR has been a very important issue these days concerning various market players and scholars, there remains a lot of issues to be studied and investigated that can benefit both researchers in academia and practitioners in industry.

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APPENDIX

Appendix A. Variable Definitions

This appendix provides a detailed description of the construction of all the variables used in this thesis.

Variable	Definition
ATCD	ATCD=|Acquirer CSR-Target CSR|
Acquisition premium	Premium 4 Weeks Prior to Announcement Date: Premium of offer price to target closing stock price 4 weeks prior to the original announcement date, expressed as a percentage ((price paid per common share – price per share 4 weeks prior to announcement) / price per share 4 weeks prior to announcement) * 100. Premium is winsorised between 0% to 200%.
A_Collateral	Ratio of the acquirer's property, plant and equipment (PPE) over acquirer book value of total assets, as of the year-end prior to deal announcement. Source: Compustat and SDC.
A_Financial leverage	Ratio of acquirer debt in current liabilities, in long term liabilities plus value of acquisition transaction over acquirer total assets plus value of acquisition transaction, as of the year-end prior to deal announcement. Source: Compustat and SDC.
A_ROA	Acquirer return on asset ratio: acquirer net income over total assets, as of the year-end prior to deal announcement. Source: Compustat and SDC.
A_Market value	Acquirer price per share times total number of shares outstanding, as of the year-end prior to deal announcement. Source: Compustat, SDC and CRSP.
A_Market cap	Log (Market value). Source: Compustat, SDC and CRSP.
A_Market to book	Ratio of market value of acquirer equity (ordinary and preferred) over its book value of equity, as of the year-end prior to deal announcement. Source: Compustat, SDC and CRSP.
A_Tobin Q	Ratio of market value of acquirer equity (ordinary and preferred) plus book value of debt over the sum of book value of equity plus book value of debt, as of the year-end prior to deal announcement. Source: Compustat, SDC and CRSP.
A_Runup	Buy and hold abnormal return (BHAR) of the acquirer stock over 60 days preceding acquisition announcement day. Source: CRSP.

Acquirer information asymmetry	For each acquirer, information asymmetry is defined as the idiosyncratic volatility of their stock. It is computed as the standard deviation of the residuals from the Fama-French Three-factor (excess of the risk-free rate) (FF 3-Factor) model of daily returns within 250 trading days preceding acquisition announcement day. Source: CRSP
A_Hightec (dummy)	Indicator equals 1 if the acquirer is a high-tech firm. High-tech firms are defined as having their hightec dummy equals 1. Source: SDC.
T_Collateral	Ratio of the target's property, plant and equipment (PPE) over its book value of total assets, as of the year-end prior to deal announcement. Source: Compustat and SDC.
T_Financial leverage	Ratio of target debt in current liabilities, in long term liabilities plus value of acquisition transaction over target total assets plus value of acquisition transaction, as of the year-end prior to deal announcement. Source: Compustat and SDC.
T_ROA	Target return on asset ratio: target net income over total assets, as of the year-end prior to deal announcement. Source: Compustat and SDC.
T_Market value	Target price per share times total number of shares outstanding, as of the year-end prior to deal announcement. Source: Compustat, SDC and CRSP.
T_Market cap	Log (Market value). Source: Compustat, SDC and CRSP.
T_Market to book	Ratio of market value of target equity (ordinary and preferred) over its book value of equity, as of the year-end prior to deal announcement. Source: Compustat, SDC and CRSP.
T_Tobin Q	Ratio of market value of target equity (ordinary and preferred) plus book value of debt over the sum of book value of equity plus book value of debt, as of the year-end prior to deal announcement. Source: Compustat, SDC and CRSP.
T_Runup	Buy and hold abnormal return (BHAR) of the target stock over 60 days preceding acquisition announcement day. Source: CRSP.
Target information asymmetry	For each target, information asymmetry is defined as the idiosyncratic volatility of their stock. It is computed as the standard deviation of the residuals from the Fama-French Three-factor (excess of the risk-free rate) (FF 3-Factor) model of daily returns within 250 trading days preceding acquisition announcement day. Source: CRSP
T_Hightec (dummy)	Indicator equals 1 if the target is a high-tech firm. High-tech firms are defined as having their hightec dummy equals 1. Source: SDC.

| Deal value	Value of the deal, excluding assumed liabilities (in million US$). Source: SDC.
Intra-industry (dummy)	Indicator equals 1 if the bidder's and the target's primary 3-digit SIC code coincides, and equals 0 otherwise. Source: SDC.
Hostile (dummy)	Indicator equals 1 if attitude of the deal is hostile, and equals 0 otherwise. Source: SDC.
Percentage of stock payment	The percentage of stock used as part of acquisition currency. Source: SDC.
Competition	The dummy variable competition is 1 if 'number of bidders' is larger than 1 and is 0 if 'number of bidders' if equal to 1. Source: SDC.
Relative Deal Size	Ratio of the price offered for the acquisition transaction (excluding assumed liabilities) over the sum of the price offered for the acquisition plus the bidder's market capitalization, as of the year-end prior to deal announcement. Source: Compustat and SDC.
Stock deal (dummy)	Indicator equals 1 if percentage of stock payment is over 70%, and equals 0 if percentage of stock payment is less than 30%. Source: SDC.
All stock deal (dummy)	Indicator equals 1 if percentage of stock payment is 100%, and equals 0 if the deal is paid purely by cash. Source: SDC.

Appendix B. Linking Thomson Financial SDC, CRSP, Compustat and KLD databases

This thesis has used data from different databases: Thomson Financial SDC, KLD, CRSP and Compustat. For the purpose of this research, I am primarily interested in matching the acquirer and the target in each deal with their firm-level social score from KLD, and their stock returns (announcement time, one-year and two-year after announcement) and their financial (accounting) data.

This match requires the usage of a table containing Committee on Uniform Security Identification Procedures identifier (CUSIP), permanent security identification number (PERMNO), and GVKEY. The reason behind this is that data that come from different databases have different identifiers to distinguish their individual entries. Thomson Financial SDC uses CUSIP to identify firms, KLD uses Ticker and CUSIP, the CRSP uses PERMNO and Compustat uses GVKEY as firm identifier.

The flow of database matching is presented in Figure B.1. Initial sample is taken from Thomson Financial SDC, deal acquirers and targets are both matched to KLD for social scores using CUSIP and Ticker. This has largely reduced size of the deal sample as KLD only rates large listed U.S. (and a few Canadian) firms. The next steps of matching to CRSP and Compustat have been difficult. As PERMNO and GVKEY are both required for matching, I have to retrieve these from the 6 digit CUSIP. After linking each CUSIP with PERMNO and GVKEY, the sample has then been matched to CRSP (announcement time return, idiosyncratic risk and long run return) and Compustat (financial data). The calculation of announcement time return is shown in Appendix C.

Figure 0.a：Linking Thomson Financial SDC, CRSP, Compustat and KLD databases

Initial sample from Thomson Financial SDC

Matched to KLD on Ticker and Cusip

Deal sample with KLD social scores

Retrieve PERMNO and GVKEY for each CUSIP

Matched to CRSP on PERMNO

Deal sample with KLD social scores and CRSP stock return

Matched to Compustat on GVKEY

Deal sample with KLD, CRSP and Compustat

Final sample with 842 deals
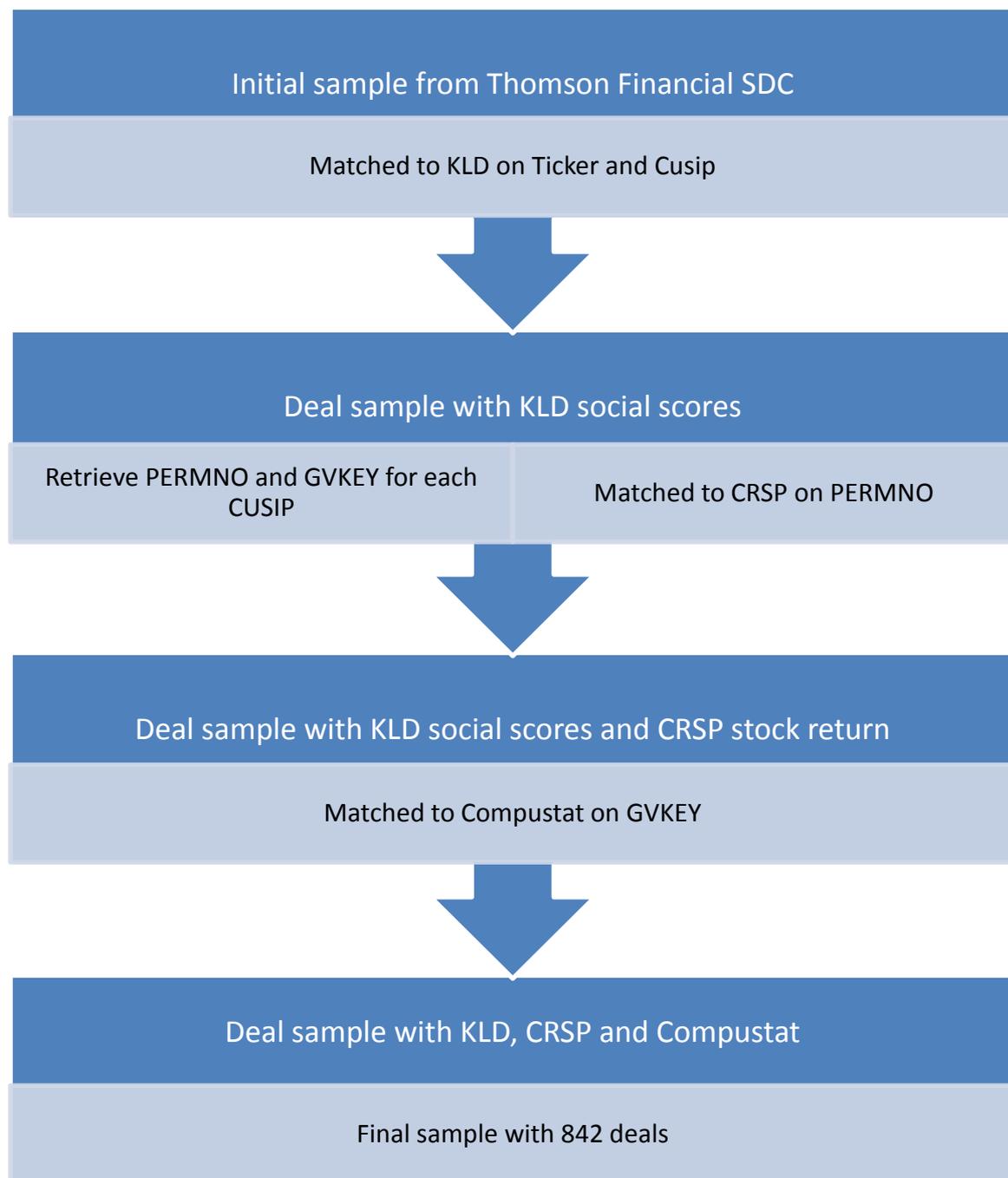
Appendix C. Calculation of Cumulative Abnormal Returns (CARs)

The standard market model methodology proposed by Brown and Warner (1985) is applied in this research to calculate the Cumulative Abnormal Returns (CARs). The CRSP value-weighted return is employed as a proxy for the market return. I measure abnormal returns for both acquirers and targets by estimating the market model from 200 trading days of return data ending 11 days before the merger announcement date.

I take three-day cumulative daily abnormal stock returns to obtain the cumulative abnormal return CAR (-1, 1) for both acquirers and targets, from one day preceding the merger announcement and one day after the merger announcement. Mathematically, the CARs are calculated by subtracting the market model cumulative returns from the cumulative returns of the firm:

$$\text{CAR}_i = \sum_{t=start}^{t=end} [R_{i,t} - (\hat{\alpha}_i + \hat{\beta}_i R_{m,t})]$$

where CAR_i is the cumulative abnormal return of firm i over the 3-day period, R_i is the return of the acquirer/ target over the same period, $\hat{\alpha}_i$ and $\hat{\beta}_i$ are the OLS predicted values from the estimation period, and R_m is the value-weighted return of the CRSP index. Start is the first day of the event window and end is the last day accordingly.

CCAR (-1, 1) for the merged firm (combined cumulative abnormal return) is constructed by taking the market value weighted sum of the acquirer's CAR (-1, 1) and the target's CAR (-1, 1).

Appendix D. Target CSR and the completion likelihood of M&A deals

I use this section to present results of target CSR on the completion likelihood of the M&A deals. The impacts of target CSR on M&A completion likelihood are investigated respectively in multivariate frameworks in order to control for known acquirer-, target-, and deal-characteristics. Table D.1 reports estimates from logistic regressions where the dependent variable is either 1 (when a deal is completed) or 0 (when a deal is withdrawn).

Analyses are conducted on a full sample level and two subsample levels, where acquirer CSR is better than target CSR and where target CSR is better than acquirer CSR. The explanatory variable 'CSR difference' quantifies corporate social engagements difference between an acquirer and a target. As I take the absolute value of the difference to show the acquirer-target ideological difference of CSR engagements, it does not describe the superiority of an acquirer and a target. Analyses of these three samples complement each other to examine the impacts of target CSR and between-firm CSR distance on M&A completion likelihood.

To address how target CSR impacts the completion likelihood of a deal, I specify eleven logistic regressions in Table D.1, five regressions for the full sample, three for each of the two subsamples (acquirer CSR>target CSR and acquirer CSR<target CSR), all using the target CSR score as the main explanatory variable and the M&A completion status as the dependent variable. Target CSR scores, as well as acquirer CSR scores, range from -1 to 1. A strongly positive relation between the target CSR and the M&A completion likelihood is documented. Standard errors are reported as White standard errors by adjusting for heteroscedasticity. Pseudo R-square are comparable to those from the relevant CSR and M&A literature (Deng *et al.*, 2013, Billett and Qian, 2008), while log likelihood recommends models (5), (8) and (11) provide the strongest explanatory power for the full sample and the two subsamples.

Regression specifications (1)-(5) are conducted for the full sample (Table D.1). The corresponding coefficient estimates in regression specifications (1)-(5) are all positive and statistically significant at either the 5% or 1% levels. I first specify a univariate regression on the target CSR score in regression (1), which reveals a strongly positive association between target CSR and deal completion likelihood. This relation remains significantly positive when I increase the number of control variables from regressions (2) to (4). The use of target-related control variables, *e.g.* target ROE, target Tobin Q, target collateral, target financial leverage, target market capitalization, target size, relative size, target information asymmetry and intra-industry dummy, does not alter my findings.

I do not include acquirer CSR score as a control variable until regression (5) as Deng *et al.* (2013) conclude that acquirer CSR score plays a positive role in influencing the deal completion likelihood. Based on that, I control for both acquirer and target CSR scores in regression specification (5), which provides an indication of which party has the greatest influence on M&A. Regression specification (5) shows that both target CSR and acquirer CSR positively and significantly impact the M&A completion likelihood. In terms of the level of statistical and economic significance, target CSR surpasses acquirer CSR in both these aspects.

For the full sample, through regressions (1) to (5), there always exists a strongly positive correlation between target CSR engagements and the M&A completion likelihood. My main interest is whether a target's CSR engagements affect the likelihood of completion of an M&A deal. To see that, I calculate the marginal effects of logit regression based on model (5) by taking the natural log of one plus the mean of each independent variable (Billett and Qian, 2008). After controlling for potentially influential target- and deal- related variables and acquirer CSR, a one unit increase in target CSR score above the sample mean increases the

likelihood of M&A completion by 10.5%. As a one unit increase in CSR score is an unrealistically large change, it would be more applicable to take a look at a 10% unit move of the target CSR score which is related to an approximately 1.05% decrease in the deal completion likelihood.

For the subsample where acquirer CSR is better than target CSR, regression specification (8) provides evidence that in such a subsample, better CSR engagements on the target side would contribute to a higher completion likelihood. This is reflected by a strongly positive 0.71% increase in the M&A completion likelihood in association with every 10% unit increase in the target CSR score. In contrast to Deng *et al.* (2013)'s findings, acquirer CSR has no discernible impact on the deal completion likelihood in this subsample. For the subsample where acquirer CSR is less than target CSR, the direction of this positive relation remains but is no longer robust after controlling for various influential variables. This suggests that target CSR has a greater effect on the probability of deal completion than acquirer CSR as a general case in full sample. This strongly positive association is dominated by the subsample where acquirer CSR is better than target CSR.

Following on from Rodrigues and Stevenson (2013), the indicator ROE shows that accounting profitability over one fiscal year prior to an acquisition announcement, has a positive but insignificant relation with the M&A completion likelihood for regression specifications (2)-(5). Neither target size variable nor relative size variable shows any significant impacts on the M&A completion likelihood. Both acquirers and targets in my sample are publicly traded firms with CSR scores from the KLD social database which rates the largest U.S. public firms according to their market capitalization. Therefore, the dispersion of target size in my sample is not so distinctive as to make the relation statistically significant. Columns (2)-(5) show no

relation between the intra-industry dummy and the M&A completion. It helps to clarify that CSR proximity is not simply a proxy for intra-industry deals versus cross-industry deals. However, in my sample, the majority of deals are intra-industry acquisitions, which Tobin Q shows has a statistically significant positive effect on the M&A completion likelihood.

In conclusion, in addition to Deng *et al.* (2013)'s findings on a positive association between acquirer CSR and deal completion likelihood, I find that there is a more distinct relation between target CSR and deal completion likelihood. More importantly, target CSR outweighs acquirer CSR in terms of both statistical and economic significance, in revealing the relation between CSR and M&A completion likelihood. This may infer that the values of the acquirer are more important to the completion of the deal than the values of the target. I accept that all acquirers attach certain but different levels of importance to targets' CSR engagements. This level varies with an acquirer's attitude towards CSR. Furthermore, when the full sample is partitioned into two subsamples where the acquirer attributes greater importance to CSR than their targets (Acquirer CSR>Target CSR) and attributes less importance to CSR (Acquirer CSR<Target CSR), acquirer CSR loses its importance in influencing the deal completion in both subsamples, while target CSR shows consistency, especially in cases when acquirer CSR is better than target CSR. I surmise that as acquirers are naturally more focused on promoting CSR, they attach greater importance to CSR performance during the acquisition process.

Table 0.1: Impact of target CSR on M&A completion likelihood

The sample consists of 842 U.S. acquisitions between 1992 and 2012. I obtain the initial sample of acquisition s from Thomson Financial's Security Data Corporation (SDC) Platinum database. My final sample includes all acquisitions subject to the following selection criteria: (1) the deal value disclosed in SDC is greater than $1 million, (2) the acquirer controls less than 10% of the target's shares prior to the announcement and owns greater than 50% of the target's shares after the transaction, (3) both the acquirer and the target are publicly traded and have stock returns and financial data available from Centre for Research in Security Prices (CRSP) and Compustat, respectively, (4) both the acquirer and the target are covered by the KLD Research & Analytics, Inc. (KLD) STATS database.

Firms are divided into high, medium and low corporate social responsibility (CSR) firms according to the sample tertiles of CSR. All variables are defined in the Appendix. The symbols *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	Marginal effect (5): dy/dx	(6)	(7)	(8)	Marginal effect (8): dy/dx	(9)	(10)	(11)	Marginal effect (11): dy/dx
			Full sample				Sample where acquirer CSR > target CSR				Sample where acquirer CSR<target CSR			
CSR measure:														
Target CSR	3.353***	2.623**	2.744**	4.559***	4.001**		4.545**	5.398**	4.689*		4.692**	4.599	0.377	
	(6.942)	(3.876)	(4.137)	(7.438)	(5.345)	0.105	(5.586)	(4.875)	(2.933)	0.071	(3.950)	(1.562)	(0.007)	0.029
Characteristics of targets														
Acquirer CSR					2.543*				1.363				5.406	
					(2.932)	0.098			(0.376)	0.052			(2.318)	0.100
ROE		0.34	0.329	0.235	0.215			0.947	0.976			-0.575	-0.595	
		(1.730)	(1.602)	(0.650)	(0.516)	0.019		(1.281)	(1.294)	0.044		(1.182)	(1.193)	-0.068
Tobin Q		0.054**	0.0531**	0.051**	0.0541**			0.109	0.112			0.519	0.457	
		(4.276)	(4.265)	(3.7944)	(3.813)	0.005		(2.112)	(1.851)	0.007		(1.527)	(1.190)	0.034
Collateral		-1.096***	-1.003**	-0.862*	-0.628			-1.909**	-1.831**			0.550	0.526	
		(6.755)	(5.702)	(2.607)	(1.303)	-0.077		(4.377)	(3.932)	-0.254		(0.419)	(0.372)	0.038
Financial leverage		0.379	0.368	0.171	0.170			1.987	1.984			-0.169	-0.058	
		(0.415)	(0.386)	(0.068)	(0.073)	0.015		(1.752)	(1.745)	0.061		(0.123)	(0.015)	-0.005
Market capitalization		-0.178	-0.206	-0.184	-0.191			-0.378	-0.387			-0.359	-0.185	
		(1.749)	(2.286)	(1.213)	(1.286)	-0.020		(1.808)	(1.849)	-0.031		(0.830)	(0.203)	-0.018
Target size		-0.034	-0.022	-0.044	-0.0285			0.010	0.019			0.250	0.133	
		(0.076)	(0.029)	(0.0815)	(0.034)	-0.003		(0.001)	(0.005)	0.001		(0.508)	(0.138)	0.011
Relative size			0.009	0.009	0.008			0.021	0.021			-0.007	-0.014	
			(0.124)	(0.120)	(0.097)	0.001		(0.339)	(0.339)	0.001		(0.018)	(0.072)	-0.001
Target information asymmetry				-3.330	-3.656			48.510*	48.510*			-22.796	-21.309	
				(0.076)	(0.093)	-0.716		(3.224)	(3.224)	0.072		(2.429)	(2.050)	-0.900
Intra-industry dummy		0.099	0.104	0.032	-0.002			0.240	0.240			-0.582	-0.660	
		(0.185)	(0.199)	(0.012)	(0.000)	0.000		(0.306)	(0.306)	0.017		(1.556)	(1.955)	-0.077

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Sample size	842	594	692	521	521		449	273	273		351	222	222
Pseudo R-square	0.008	0.040	0.039	0.040	0.046		0.012	0.109	0.110		0.012	0.039	0.048
Log likelihood	-341.197	-288.085	-282.261	-194.097	-194.097		-170.865	-100.648	-100.648		-148.977	-80.174	-80.174