The impact of corporate social responsibility concerns on shareholder's wealth: New evidence from mergers

Yang Zhang, Marco Navone, Dave Michayluk,

University of Technology Sydney

Eliza Wu

University of Sydney

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Abstract

This study contributes to the ongoing debate about the effects of corporate social responsibility on shareholders' wealth from a new perspective. Using a large sample of U.S. mergers and alternative CSR measures, our study empirically examines and extends the stakeholder value maximization theory. We find that the market reacts to firm's responsible and irresponsible CSR behaviors differently. There is no evidence that the stock market rewards socially-responsible acquirers in the short-term. However, we do find strong evidence that the market judges investments by socially irresponsible firms more negatively. Our findings are more pronounced when acquirers involve in the community, employment relations, environment, and human rights CSR dimensions. These results suggest that while firms cannot create shareholder value by merely investing in more socially responsible activities, they can achieve this result by minimizing socially irresponsible behaviors.

Keywords: Corporate social responsibility; CSR concerns; Merger; Shareholder wealth

1. Introduction

The sustainable world development has become an important part of business development, and the increasing number of companies has incorporated sustainable business practices to ensure the long-term success. As an essential part of the company's operations, corporate social responsibility (CSR) actions affect many society members including corporate communities, the environment, and satisfaction among employees, suppliers, and customers. It is far more enough for companies to produce great products or provide excellent services nowadays, people may also be concern about their effects on the surroundings and willingness to contribute to the society. Over the past few decades, the field of corporate social responsibility has long attracted increasing attention, and the number of socially responsible activities that the company involved in promoting unrelated to the company's core business has soared. According to a PricewaterhouseCoopers (2010) CSR trend report, more than 81% companies disclose the CSR information on their websites at the end of 2010. A report from Financial Times in 2014 shows that $15.2 billion investment has spent on corporate social responsibility for American and British firms in the Fortune Global 500.

With the amount of investment and attention that companies are giving to CSR, it is essential to understand the rationale for CSR. However, the effects of CSR on firm's financial performance are still an ongoing debate, and there are mixed empirical findings in the literature. One view of literature supports the stakeholder theory which considering investment in CSR as strategic to maintain a good relationship with company stakeholders. The theory argues that CSR investment could provides a way to improve corporate reputation, enhance customers' and suppliers' satisfaction, improve employee relationships, protect human rights, and therefore improve corporate financial performance (Gelb and Strawser 2001, Chih et al. 2008; Baron, 2001; El Ghoul et al. 2011, Dhaliwal et al. 2014). In addition, socially responsible firms are inclined to keep their commitments and foster long-term relationships with stakeholders rather than maximize their short-term profit (Jensen, 2001; Jawahar and McLaughlin, 2001; Freeman, Wicks, and Parmar, 2004). On the contrary, another view of literature supports the shareholder expense view that regards CSR as a wasteful use of firm's resources on non-productive projects, which will lead to a wealth transfer from shareholders to stakeholders (Pagono and Volpin, 2005;

Surroca and Tribo, 2008; Renneboog et al., 2008). This view supports companies should merely comply with shareholder theory by law and maximize the wealth for shareholders.

Merger deal events provide a framework to examine the relation between CSR and shareholder's wealth effects. First, merger events have been one of the most crucial drivers of corporate performance in recent decades. Second, the merger approval process is frequently subject to challenges and support from various stakeholders who have a substantial impact on the outcome of a merger and play a crucial role in the post-merger integration process (Deng et al. 2013). Third, mergers are primarily unanticipated events, and thus the inclusion of deal announcement returns in an analysis can potentially mitigate the reverse causality problem presented in previous studies on the relation between CSR and firm value (McWilliams and Siegel, 2001; Jiao, 2010). Aktas et al. (2011) show the stronger socially responsible performance of targets will benefit acquirer gains more in mergers and acquisitions. The higher social responsibility investment practices and experiences of the target could spill over to the acquirer in the M&A transaction deals. Deng et al. (2013) examine the impact of CSR on shareholder's wealth effect by using the aggregate value of CSR[1]. Their findings support the stakeholder theory by indicating that acquirer who has stronger aggregate CSR rating realize higher short-term abnormal returns and better long-term operating performance in merger deals. Also, they report that mergers by acquiring firms with higher CSR performance require less time to complete and are less likely to fail.

Despite Deng et al. (2013) examined the relationship between aggregate CSR rating and acquirer shareholder wealth effects in mergers, the effects on how the market reacts to the components of CSR- socially responsible ratings and irresponsible ratings in mergers and which part drives the results still reamin an open question. The following considerations motivate our research interest. First, aggregate CSR approach used in previous literature may not adequately reflect the balance of CSR matters rising either from firm's CSR responsible activities or irresponsible behaviors. A company potentially has CSR strength and concern records at the same time. Second, the aggregate CSR calculation depends on the assumption that the firm's

[1] Aggregate CSR score is calculated by the sum of seven major CSR dimension scores based on approximately 80 CSR strength and concern indicators, with a higher value indicating better social performance. Aggregate CSR rating is measured by a firm's corporate social responsible rating minus its corporate social irresponsible rating.

CSR concerns impacts can be negated by its CSR strengths. However, the market reacts to a firm's socially responsible and irresponsible actions independently in an efficient market where any CSR news will adequately reflect the prices instantly. Therefore, it is unlikely for firms to display CSR strengths to potential camouflage their CSR concerns. Third, the scarcity of empirical work has examined the relation between a firm's CSR irresponsibility and financial performance in mergers. Previous studies only showed evidence on tax-avoidance, which suggests that firms with excessive irresponsibility activities have a higher likelihood of engaging in tax-sheltering activities and greater discretionary/ permanent book-tax differences (Hoi et al., 2013). We, therefore, examine the impact of the market reaction to CSR responsible and irresponsible behaviors by taking alternative CSR measurements.

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

Using a sample of 1,752 successful U.S. mergers made by 843 acquiring firms from various industries, we first examine the stakeholder value maximization theory by using aggregate CSR rating to measure the firm's social responsibility. Following Deng et al. (2013), we construct the

aggregate value of CSR variable equal to the total number of CSR strengths minus the total number of CSR concerns. We then adjust the total strength and concern score by dividing the dimension scores of strength and concern by their respective indicator numbers to the bias of any CSR dimensions. We find consistent results with Deng et al. (2013) that support the stakeholder value maximization theory. In specific, we find a significant positive association between aggregate CSR rating and merger returns and the mean value of aggregate CSR rating is at similar scales even though our sample covers a more extended period.

We then specifically examine the effects of firm's CSR activities on merger performance by using alternative CSR measurements that evaluate a firm's CSR strength and concern rating separately. We find that acquiring firms with high responsible ratings do not have a significant impact on acquirer's abnormal returns in merger transaction deals in the short-term, which is consistent with Groening and Kanuri (2013). However, acquirers with socially irresponsible behaviors, particularly those with excessive CSR irresponsible rating, realize significantly lower returns in mergers. The economic impact is significant: a one standard deviation change in acquirer's CSR irresponsible rating is associated with 0.22% average decrease in acquirer's cumulative abnormal merger returns, holding all other variables constant. Besides, the significant results still remain despite controlling for firm and deal-specific variables, year and industry effects. These results suggest that the stock market does not reward the acquiring firms for making more corporate social responsibility activities in mergers in the short-term. However, the stock market is sensitive to and reacts negatively to firm's socially irresponsible behaviors. These results are not mutually exclusive with Deng et al. (2013) but are being a complementary to stakeholder value maximization theory. The positive relation between firm's aggregate CSR rating and merger returns can achieve by minimizing socially irresponsible behaviors, but firms cannot create shareholder value by merely investing in more socially responsible activities.

Next, we further examine whether some CSR individual dimensions (community, corporate governance, diversity, employee relations, environment, human rights and product characteristics) dominate acquirer's merger performance. We find that acquirers perform socially irresponsible behaviors in the community, employment relations, environment, and human rights realize significant lower cumulative abnormal returns in merger transactions, and with the rest CSR irresponsible dimensions remain negative. By contrast, all the CSR responsible dimensions do

not show significant effects on merger returns. These results suggest that the results are not bais driven by any CSR component but representing the effects of overall CSR ratings on merger performance.

Given the fact that the causal relation between CSR and acquirer's returns may misinterpret by omitted variables which correlated with both CSR and merger performance. We then conduct tests to address endogeneity concern using 2SLS regression analysis with instruments for the endogenous variables. The first instrumental variable used is the blue state dummy variable with a value of one if a firm headquarters in a blue or Democratic state, and zero otherwise. Rubin (2008) shows that firms with high CSR ratings more likely headquarter in the blue state. The second instrumental variable we used is the average CSR rating (CSR strengths and concerns) for other firms located in the same industry and year (El Ghoul et al., 2011; Jha& Cox, 2015; Stellner et al., 2015). A firm's CSR rating is highly related to a specific industry where firms with same characteristics clustered in specific locations (Baptista and Swann, 1998; Krugman, 1991). The results of 2SLS regressions confirm our findings that CSR strengths of acquiring firm do not affect acquirer's shareholder returns while its CSR concerns rating has significant negative effects on stock return in mergers, are robust and remain even controlling for potential endogeneity concerns.

Finally, we further conduct other additional robustness and sensitivity tests. First, one concern about our finding may affect by acquirers whose business involved in controversial areas, namely Alcohol, Gambling, Firearms, Nuclear Power, and Tobacco. Hong and Kacperczyk (2009) suggest the against of social norms have impact on the stock returns. We, therefore, include additional sets of CSR controversial business issue controls from KLD to mitigate concerns from societal norm further. Our results continue to hold, and this reinforces our earlier evidence that acquirers' CSR responsible activities do not affect the merger returns, but market reacts negatively to acquirers' CSR irresponsible behaviors. Second, our findings are robust to measure bidder abnormal announcement returns using alternative event windows. Third, our findings are robust when expanding the merger sample to include the acquirers own more than 50% of the target shares instead of 100% after merger transactions. Fourth, our evidence is robust when including acquirers in the utilities and financial industries. Fifth, we use adjusted CSR measurement by dividing the CSR strength and concern scores for each dimension by the

respective number of strength and concern indicators for that dimension[2]. The adjusted score thus gives equal weight to the seven dimensions, not to the individual indicators, mitigating any bias caused by an indicator of the social performance of firms in relatively irrelevant industries. In untabulated tests, we find our results are remaining robust when using adjusted CSR measures. Lastly, our evidence is robust when considering the target CSR rating.

In sum, this study documents the effects of acquiring firm's socially responsible and irresponsible activities on shareholder wealth in mergers. Our findings show evidence that the stock market does not reward socially-responsible acquirers, but the market judges investments by socially irresponsible firms more negatively. As such, the analysis and results in this paper contribute to several strands of research:

First, it is related and contributes to the extensive literature studying the link between CSR and corporate performance. While previous studies investigate the effects of CSR on "sin stocks" returns (Hong and Kacperczyk, 2009), bank debt (Goss& Roberts, 2011), cost of equity capital (El Ghoul et al., 2011), credit risk (Stellner et al., 2015), media favorability and firm's equity valuation (Cahan et al., 2015), this is the first study, to our knowledge, to examine the effects of CSR responsibility and irresponsibility on shareholder's wealth effects respectively. Our findings contribute to the literature by indicating that the market reaction to CSR responsibility and irresponsibility differently and firms should care more about their irresponsible CSR behaviors as they are more sensitive to investors.

Second, the present paper also complements to the growing literature dealing with the shareholder value implications of CSR in merger and acquisition transactions. We extend Deng et al. (2013) stakeholder value maximization view by showing the fact that higher aggregate CSR benefit merger returns in the short-term result from the lower socially irresponsible behaviors of acquiring firms rather than their higher CSR responsibility. Additionally, we take a comprehensive approach that examines the effects of qualitative issues of seven individual CSR dimensions as well as controversial business issues. Our study contributes to the relation between acquirer's CSR performance and market reaction, which extends to Aktas et al. (2011) who

[2] Details of CSR strength and concern indicators in KLD are in Appendix B.

examine the relationship between the target's CSR performance and acquirer's abnormal merger returns.

Third, we extend prior research on the relation between CSR irresponsibility and firm's activities performance. Although Goss & Roberts (2011) find that firms with social responsibility concerns pay between 7 and 18 basis points more than firms that are more responsible and Hoi et al. (2013) shows firms with excessive CSR irresponsibility have a higher likelihood of engaging in tax-sheltering activities and greater discretionary/permanent book-tax differences. Hong and Kacperczyk (2009) find evidence firms operating in "sin" industries are less coverage from analysts and have higher expected returns. To our knowledge, no study to date has investigated how firm socially irresponsible ratings affects the wealth of their shareholder and other stakeholders in the short-term. Lastly, this paper also contributes to the literature by showing that irresponsible CSR activities also work as a determinant of merger performance.

The rest of paper is organized as follows: Section 2 describes the research question of the study. Section 3 discusses the data construction and summary statistics. Section 4 describes the variables construction and empirical framework. Section 5 describes empirical results. Section 6 presents the results of robustness checks and sensitivity tests. Section 7 presents summary and conclusion.

2. Research Question and Hypotheses

Growing literature dealing with the shareholder value implications of CSR in merger and acquisition transactions. Although one stream of literature supports the stakeholder value maximization view suggests that there is a positive association between aggregate CSR ratings and shareholder returns, no study to date has shown the driver for these results from the components of aggregate CSR.

One potential explanation is *Responsible CSR appreciation hypothesis*, which suggests this positive relation between announcement returns and the overall CSR rating is due to the market reward for acquirers doing socially responsible activities and therefore the cumulative abnormal returns for acquirer increase in mergers. Several arguments support the value creation stemming

from socially responsible activities. Some authors argue that increased social and environmental performance can enhance a firm's input-output efficiency, improve employee and customer satisfaction, generate new market opportunities, or signal management quality (Fombrun and Shanley, 1990). Socially and environmentally responsible activities may also enhance a firm's standing with financial market participants (such as bankers, financial intermediaries, and investors) and governments. This reputation effect may improve a firm's access to financing sources (McGuire et al., 1988).

However, there are other literatures argue that CSR concerns detriment the firm's performance (Goss& Roberts, 2011) and thus harm the shareholder's merger transaction returns. In this case, the higher aggregate CSR benefit merger returns in the short-term achieved through the lower socially irresponsible behaviors of acquiring firms rather than their higher CSR responsibility. The disciplinary view leads us to formulate our alternative *Irresponsible CSR deprecation hypothesis*: positive announcement returns imply that the acquirer may result from the reduction of socially irresponsible behaviors.

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

3. Data construction and summary statistics

To examine the effect of corporate social responsibility on merger deals performance, we merge the data from following different databases. The Thomson Securities Data Company (SDC) Mergers and Acquisitions database provides the merger deal data; Kinder. Lydenberg and Domini (KLD) database provide corporate social responsibility scores of various dimensions; Research in Security Prices (CRSP) daily return files provides the stock return information; Compustat North America provides the financial data. The data extraction period is from January 1, 1995, to December 31, 2013. We follow Deng et al. (2013) and impose the following sample selection criteria: (1) the status of M&A transaction deal is completed; (2) exclude the effects from small deals and ensure the merger deal value is greater than $1 million; (3) the acquirer own 100% of the target shares after the merger transactions; (4) the acquirer is US publicly listed firms where stock returns data available from CRSP to compute the abnormal returns; (5) firm's financial data are available from Compustat; (6) the acquirer is covered by the KLD database and with corporate social responsibility scores for various CSR strength and concern dimensions

prior to merger[3] deal announcement; (7) we also exclude those acquirers in the utilities (SIC 4900-4999) and financial (SIC 6000-6999) industries. These selection criteria lead to a final sample of 1,752 successful mergers made by 843 acquiring firms from various industries.

<Insert Table 1 here>

Panel A of Table 1 presents the sample distribution by deal announcement year and its corresponding CSR strength and concern scores[4]. The number of merger deals increases gradually and reach the peak before the occurrence of 2008 financial crisis. The numbers then stay constant for the following recent periods. Also, acquiring firms' CSR strengths and concerns vary in different years. The largest number of acquirers' sum number of CSR strengths is 4.052 in the year 1999 while the smallest number is 1.320 in the year 2003. The same year 2003 also experienced a relatively low sum score of CSR concerns for acquirers, but the lowest (1.030) average number was in the year 2012.

Panel B of Table 1 reports the sample composition based on acquiring firms' industry. The manufacturing (58.1%) and service industry (24.3%) dominate the sample with agriculture, forestry and fisheries only account for 0.034%. Despite the lowest merger numbers in agriculture, forestry, and fisheries, acquirers in those industries have the highest score of CSR strengths (3.000). Mineral and construction industries have the lowest level CSR strength scores while their CSR concerns are the highest (3.141) among all the industries.

4. Key variables construction and empirical framework

4.1 Measuring CSR strength and concern

[3] Acquisition deals are not considered in this study similar with Deng et al. (2013). The combination of acquirer and target firm together after merger deals will agree on the contracts in the newly combined firms. However, an acquisition of target shares may not change the target firms' independent legal entity and target firm's supporting willingness, therefore there is not clear in acquisition cases how the effects of acquirer corporate social performance on shareholder's wealth will be.

[4] The CSR strength and concern variables construction in the table will be discussed later.

We use data from Kinder, Lydenberg, and Domini (KLD) Research and Analytics Inc. for our measure of corporate social responsibility. The independent research KLD firm has been providing consulting and research services to customers for different purposes, including socially responsible investment decision and academic research. KLD ranks companies' involvement in various activities from different resources level including government, media, annual financial reports, and journals. KLD database covered S&P 500 companies since 1991 and expended more than 3000 companies from Russell 3000 index since 2003.

KLD STATS score firms based on thirteen CSR dimensions that contain two main categories: qualitative issue areas and controversial business issues. The CSR dimensions of qualitative issue areas include community, corporate governance, diversity, employee relations, environment, human rights and product characteristics. KLD STATS presents a binary (either 0 or 1) rating of strength (positive) and concern (negative) ratings for each qualitative issue dimensions[5]. In each dimension, there mark with one in the according area if a rating in either assigned as (strength) positive or (concern) negative, while the mark will be filled with zero if there is not any strength or concern rating in particular issues. For example, in the community area, KLD assigns 1 for the "Charitable Giving" if a company a generous giving strength and 0 otherwise. In the employee relation dimension, KLD assigns 1 for "workforce reductions concern" if a company has made significant reductions in its workforce in recent years, and 0 otherwise. By contrast, companies only assigned concern ratings on controversial business issues (alcohol, gambling, tobacco, firearms, the military and nuclear power).

Aggregate CSR score is calculated as the total number of strengths minus the total number of concerns, which have used as a measure of CSR in previous studies (El et al., 2011; Deng et al., 2013; Di et al., 2014). The higher value of aggregate CSR value indicates a better social performance. For example, the KLD employee relation score is equal to the number of employee relation strength number minus the number of employee relation concern number. We then calculate the sum number of KLD scores across the seven qualitative CSR dimensions to get the aggregate score.

However, there are disadvantages of aggregate approach to measuring the CSR. First of all, the aggregate CSR measurement may not adequately reflect the balance of CSR matters rising

[5] Details see appendix B.

either from CSR strengths or concerns. The netting CSR calculation also based on the assumption that companies can use CSR strengths to negate the impact of CSR concerns. However, many firms usually may just display strengths to camouflage their current concerns potentially. Secondly, the uneven number of CSR strengths and concerns make it difficult to measure the CSR net value accurately. Seven dimensions of qualitative issue areas are available for both CSR strength and concern rating while six CSR dimensions of controversial business issues are only available for CSR concerns.

To evaluate the impact of CSR on firms accurately, we use two groups of CSR measurements. The first group is to add up the total number of CSR strengths to calculate a *Strength_Sum* and add up the total number of CSR concerns to calculate a *Concern_Sum* score in seven CSR dimensions (community, corporate governance, diversity, employee relations, environment, human rights and product). The CSR strength score represents the firm's socially responsible behaviors rating while CSR concern score represents the firm's socially irresponsible behaviors rating. This group of CSR sum number could better measure the intensity of CSR strength or concern. The higher score (strength or concern) indicates the higher socially responsible or irresponsible performance[6]. The second group of measurement is strengths (or concerns) dummy variables that take the value of one for the presence of any CSR strengths in the seven CSR dimensions (or concerns) and zero otherwise. *Strength_dummy* takes a value of one if the firm has any areas of the community, corporate governance, diversity, employee relations, environment, human rights and product marked as strength and zero otherwise. *Concern_dummy* takes a value of one if the firm has any areas of the community, corporate governance, diversity, employee relations, environment, human rights and product marked as strength and zero otherwise. These dummy variable indicators capture firm's performance on any socially responsible or irresponsible behaviors regardless of the effects of a different number of CSR strengths or concerns[7].

<Insert Table 2 here>

[6] Detailed variable definition is in appendix A

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

Table 2 presents descriptive statistics on two groups of CSR strength and concern measurements. The mean value of Strength_Sum is 2.399 in the whole sample, suggesting that the sample firm on average has 2.399 responsible CSR activities throughout the years. Similarly, the mean value of Concern_Sum is 2.133, suggesting that the average number of firm's irresponsible CSR activities are slightly lower compared with their responsible CSR activities. However, Strength_dummy is 0.612 that is lower than Concern_dummy (0.828). In other words, 82.8% of firms in the sample at least have one activity marked as socially irresponsible behavior that is higher than that 61.2 % of firms who have done any socially responsible activities recorded in KLD.

4.2 Abnormal stock performance

To examine the impact of corporate socially responsible activities on acquiring firm's merger announcement return, we take the standard event study methodology that could isolate the impact of a particular event on market valuations. We take the market model to estimate the market performance as follows:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \qquad (1)$$

, where R_{it} is the stock return for period *t*; R_{mt} is the market return of the U.S. stock market on day *t*, which is proxy by value-weighted return in CRSP; $\alpha_j$and β_j are the parameters of ordinary least squares (OLS) regression; and ε_{it} is the regression residual. The estimated window is over 200 trading days of return data ending 11 days before the merger announcement. Therefore we estimate the abnormal return (AR) of acquirer on day *t* as the value of observed stock return values on day *t* minus the stock return examined using the market model:

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt}) \qquad (2)$$

We then calculate cumulative abnormal return (CAR) using the three days (one day before and after merger announcement date) event window CAR(-1,1), which used as the key dependent variable in this study to be compared with those in most previous studies. We also

estimate the cumulative abnormal return using the CAR(-2,2) five (two days before and after merger announcement date) and CAR(-5,5) eleven (five days before and after merger announcement date) day's event windows for robustness tests.

Table 2 reports a summary of acquiring firm's cumulative abnormal returns (CARs) for several event windows. The results of all the possible event windows report that both the mean and median CARs are positive. Our results are consistent with prior studies. For example, the result of our average five-day CAR(-2,2) is 0.279% which is consistent with Masulis et al. (2007) CAR(-2,2) for U.S deals between 1990 and 2003 is 0.215%.

4.3 Empirical framework

To examine market investor reactions to acquiring firm's socially responsible performance in merger deals, we conduct a regression analysis summarized by the equation below:

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

, where $CAR_{i,t}$ is acquirer's cumulative abnormal returns in different event windows; $\alpha_{i,t}$ is the vector of year, industry fixed effects. $CSR\_Strengths^{i,j}$ and $CSR\_Concerns^{i,j}$ are CSR strength and concern measurements (one group is the total number of CSR qualitative issues dimensions on strengths and concerns and the other group is strengths and concerns dummy indicators), respectively; $Controls_t^i$ is a vector of firm and deal level control variables that has been shown have impact the relationship between stock abnormal return and CSR performance in M&A events[8].

The firm-specific control variables (firm size, leverage, free cash flow, Tobin's Q, Market to Book ratio) are selected based on Masulis et al. (2007) which investigate the determinates of merger and acquisition performance. First of all, Moeller et al. (2004) explain how firm size have an impact on merger performance as managers in large firms may overestimate the potential merger synergy, therefore, induce a lower or negative abnormal returns. Also, McWilliams& Siegel (2001) also reports that large firms are more inclined to involve in corporate social responsibility events than smaller firms so that to arise attention and meet stakeholder's pressure.

[8] Detailed variable definition is in Appendix A.

The second firm attribute we control for is the firm's financing structure (leverage). Goss &Roberts (2011) shows responsible firms are much easier to access the debt financing compare with irresponsible firms. Thirdly, corporate socially responsible investments are a kind of discretionary decisions that primarily rely on the availability of excess funds. Firm's performance may also depend on how managers manage the amount of free cash flow on projects investment (Jensen, 1986; Baker and Gompers, 2003). Therefore, we also control for the potential CSR effects caused by free cash flow. Lastly, Jiao (2010) shows that firms with a better management quality are more likely to be active in CSR events. We therefore also control for the effects from Tobin's Q.

The merger deal transaction characteristics also need to control for determinates of M&A success (Erel at al., 2012). We control for industry diversification based on whether acquirer and target firm share same industrial classification codes. Target status is controlled based on whether target firms are public or private firms. We also control for merger deal relative size, a ratio of deal value over acquiring firm's market value of equity at the fiscal year end before the deal announcement year. We also control for the deal transaction attitude depend on whether they are a tender offer or have a hostile attitude.

The models also include the year and industry fixed effects to capture the macroeconomic differences. The standard errors adjusted with White's (1980) heteroscedasticity.

Table 2 also presents summary statistics for control variables in the empirical framework. In order to remove the effect of outliers, all of the continuous variables in the sample are winsorized at 5^{th} and 95^{th} percentile. All the mean and median value of firm and deal characteristics is consistent with Deng et al. (2013)[9].

5. Empirical Results

[9] The mean value of firm size is 7.893, the mean value of free cash flow is 0.054, the average value of leverage is 0.125, the mean value of Tobin's Q is 2.510, the average market to book ratio is 4.090, the mean Diversifying is 0.400, the mean value of target public is 0.475, mean value of private target is 0.410, the mean value of relative size is 0.164, the mean value of cash only is 0.404, the average value of partial stock payment is 0.371, the average number of hostile attitude is 0.007 and tender offer average number is 0.128.

As we discussed in the introduction, despite the increasing academic studies on corporate social responsibility, we still know little about how the degree of firm's socially responsible and irresponsible activity affects market reaction in merger transaction deals, respectively. The following empirical analysis is purposed to address this gap in the literature and empirically examine the relation between acquiring firm's cumulative abnormal returns and its socially responsible and irresponsible behavior ratings. Section 5.1 will conduct univariate tests comparing acquirer's abnormal returns between different levels of CSR concerns. Next section 5.2 will perform cross-sectional regression analysis where we regress the models with firm and deal level controls. In section 5.3 we report the results of endogeneity tests.

5.1 Univariate results

The univariate results in Table 3 report the cumulative abnormal returns (CARs) statistics for several possible event windows. The results reveal that both the mean and median CARs are statistically positive for all the event windows, which indicates investors express optimistic attitudes generally towards the U.S. acquiring firms involved in CSR activities in merger transaction deals. The table further separates the full samples into two subgroups (low CSR and high) based on the median of the total CSR strength and CSR concern of acquiring firms. Both subsample and difference tests results show that acquirer who has low CSR strengths (concerns) have significantly higher cumulative abnormal returns compared with those have high CSR strengths (concerns) scores in different event windows. For example, the mean (median) of CAR(-1,1) for that acquirer have a lower total number of CSR concern score is 0.744% (0.5%), while it is 0.064% (-0.15%) for acquirers who have a higher total number of CSR concern score. These results suggest that the mean (median) CAR(-1,1) for acquirers with lower total CSR concern score is 0.68 (0.65) basis points higher than that acquirer with higher total CSR concern score. These differences are significant at the 1% level. We also find similar significant differences evidence in means and medians between high and low total CSR concern groups in both five and eleven days event windows. Overall, these preliminary findings suggest that acquirers with a lower level of socially irresponsible performance have significantly higher cumulative abnormal returns in merger deals.

<Insert Table 3 here>

5.2 Cross-sectional regression analysis

5.2.1 Aggregated CSR measurement

Despite the growing body of literature (Goss& Roberts, 2011; Hoi et al., 2013) using CSR strength and concern to measure CSR responsible and irresponsible rating separately, some studies measure the firm's social responsibility use the CSR aggregate measurement. This section aims to ensure our findings are consistent with stakeholder value maximization theory.

We construct the aggregate value of CSR following Deng et al. (2013). Using dimensions (corporate governance, community, diversity, employee relation, the environment, human rights and product characteristics) of CSR qualitative issue areas discussed in section 4.1, the variable *RawCSR* equal to the total number of CSR strengths minus the total number of CSR concerns. To the bias of any CSR dimensions, we then adjust the total strength and concern score by dividing the dimension scores of strength and concern by their respective indicator numbers (The detailed CSR dimension indicator are in Appendix B). The variable *AdjustedCSR* is calculated by the difference between adjusted total strength score and adjusted total concern score. Table 2 reports the statistics of RawCSR and AdjCSR. We find that the mean of RawCSR in our sample is 0.217 that has a similar scale with that of 0.266 in Deng et al. (2013); the mean of AdjCSR in our sample is -0.124 that is also similar with that of -0.112 in Deng et al. (2013).

<Insert Table 4 here>

Similarly, we use three-day acquirer cumulative abnormal return CAR(-1,1) as the key dependent variable and take the *AdjustedCSR* and *RawCSR* as the primary explanatory variables to test their relationship. The models are including acquirer- and deal-specific characteristics, as well as the year and industry fixed effects as controls. Table 4 shows the regression results of acquirer's CARs on aggregate CSR values. We find the coefficient estimates on acquirers'

adjusted CSR and raw CSR are positive and significant. These results are consistent with the Deng et al. (2013) that firm's CSR performance increase stakeholders' satisfaction to benefit shareholders, and high CSR rating acquirers realize higher stock returns in mergers than those low CSR acquirers. In summary, our findings support the stakeholder maximization theory and verify the correction of our merger sample.

5.2.2 CSR strengths and concerns ratings

Although Deng et al. (2013) examined the relationship between aggregate CSR rating and acquirer shareholder wealth effects in mergers, it is still unclear that how the market reacts to the component of aggregate- CSR socially responsible and irresponsible ratings in mergers, and which part drives the results of stakeholder maximization theory. We, therefore, conduct cross-sectional multivariate regressions and regress the cumulative abnormal returns on two group of corporate socially responsible and irresponsible (CSR strength and CSR concern) proxies, and the firm and deal-specific control variables discussed in section 4.3. All models also control for year and industry fixed effects. We take three-day CAR(-1,1) as the key dependent variable. The CARs of other event windows are for further sensitivity and robustness tests.

<Insert Table 5 here>

Panel A of Table 5 reports the effects of overall corporate socially responsible and irresponsible rating on acquirer's CAR. The results are estimated using ordinary least squares (OLS) with standard error adjusted for heteroscedasticity. Model 1 examines the impact of the total value of CSR strengths and CSR concerns on acquirer's CAR. We find the coefficient on CSR strength_sum is insignificant while CSR concern_sum is significantly negative at the 1% level. These results imply that acquirer's abnormal returns in merger transaction deal not increase with the increasing of firm's socially responsible ratings. However, acquirers showing higher socially irresponsibility realize significantly lower returns in mergers. The estimated coefficient suggests that one-standard-deviation increase in total value of CSR concerns leads to acquirer's CAR(-1,1) to decrease 0.22% on average. Besides, the significant results remain

despite controlling for firm and deal-specific variables. Figure 1 intuitively shows the marginal effects of CSR strength and CSR concern rating against acquirer's cumulative abnormal returns. CAR increases from 0.023 to 0.038 (0.015 difference) with the increasing of CSR strength while acquirer CAR declines a wide range from 0.075 to -0.08 (0.155 difference), which is roughly ten times variation than that of CAR increase group.

Model 2 reports the results by using CSR strength and concern dummy proxies. Different with CSR_sum measures, the CSR strength (concern) dummy variable capture firms any responsible (irresponsible) activities in areas of the community, corporate governance, diversity, employee relations, environment, human rights and product characteristics. Consistent with the finding in Model 1, we find that Strengh_dummy is statistically indistinguishable from zero, but Concern_dummy is negative and significant. These also suggest that acquirers who have better social responsibility cannot realize higher abnormal returns while the market is sensitive to CSR concerns and react negatively with their socially irresponsible behaviors. Model 3-6 we re-estimate the model 1-2 using alternative five and eleven day's event windows of acquirer's abnormal returns as dependent variables. Results from model 3-6 show CSR strength is still insignificant while CSR concern has significantly negative relation with acquiring firms' CARs. These results suggest that the effects of CSR strengths and concerns on acquirer's shareholder returns are robust and sensitive following alternative event days.

Overall, the cross-sectional regression results reported in Table 5 confirm the univariate results reported in Table 3. These results suggest that stock market does not reward the acquiring firms for making more corporate social responsibility activities in mergers. However, the stock market may punish acquirers who show socially irresponsible behaviors. Our findings are not the exclusion of stakeholder value maximization theory but an extension to Deng et al. (2013). Our findings suggest that the benefits to acquirers having higher overall CSR on shareholder returns in mergers are driven by firm's lower CSR concern ratings that are consistent with our *Irresponsible CSR deprecation hypothesis.*

5.2.3 Individual dimensions of CSR strengths and concerns

One concern of our results is the fact that some firms may do excessive socially irresponsible in particular areas, for example, those firms have excessive pollution to the

environment, which may drive the results. We therefore further examine the relation between acquirer CAR in mergers and CSR individual dimensions (community, corporate governance, diversity, employee relations, environment, human rights and product characteristics) to empirically determine whether some CSR components dominate acquirer's merger performance.

Similar to the overall CSR measures, we generate CSR individual measurements from the total number of scores in each dimension. Table 6 shows the effects of CSR dimensions value on abnormal returns. We use stock CAR(-1,1) as key dependent variable and include acquirer- and deal-specific control variables, and year and industry fixed effects in all the models. We do not report the estimated coefficient of control variables in the table, as the results are similar to that of Table 5. Table 6 finds consistent results that all the dimensions of CSR strengths do not have significant effects on acquirer's CAR. However, the aspects of CSR concerns on the community, employment relations, environment and human rights do have negative and significant effects on merger returns. Although the CSR concerns dimensions of corporate governance, diversity and product characteristics are not statistically indistinguishable from zero, they remain negative relation with acquirer's CAR. These results suggest that particular CSR irresponsible activities do not drive our results, but their overall CSR performance affect the results.

<Insert Table 6 here>

6. Robustness checks and sensitivity tests

This section we conduct several additional checks to investigate the robustness of our findings that acquirer's socially responsible rating does not benefit merger returns while its socially irresponsible behaviors affect acquirer CAR negatively. The robustness checks include alternative model specifications, endogeneity tests, alternative CSR measurements and other sensitivity checks. The results of robustness tests are summarized below.

6.1 Alternative model specifications

Appendix C provides the variables correlation matrix information. As can be seen, CSR strength and CSR concern have a high correlation (0.488). One possible concern for our findings is that our results might driven by the collinear problem between two interested variables. We therefore further test the robustness of our results using alternative model specifications. Taking acquirer's cumulative abnormal returns of various event windows as the primary dependent variables, we run models with Strength_Sum and Concern_Sum as main explanatory variables separately. All models include firm and deal-specific control variables discussed in section 4.3 and control for the year and industry fixed effects. In Table 7, we find consistent results that the Strength_Sum continue have insignificant effects on CARs, but Concern_Sum are negative and highly significant in different deal event windows. These results further confirm the robustness of our previous findings even has considered collinearity issue.

<Insert Table 7 here>

6.2 Endogeneity tests

This section we will examine the endogeneity issues using an instrumental variable and 2SLS technique. Although several acquirer- and deal-specific factors that may affect the merger returns have controlled in the models, we still need to consider the potential endogeneity and omitted variable bias problem. The causal relation between CSR and acquirer's returns may be driven and misinterpret by omitted variables that correlate with both CSR and merger performance. For example, a company who pollute the environment can potentially be the same company with weak firm management. In this case, a reduction of acquirer's return in mergers may be not because of its socially irresponsible behaviors but the inferior managerial strength of the merger bidder.

We, therefore, try to address the potential endogeneity problems by using 2SLS regression analysis with instruments for the endogenous variables, CSR strength_sum, and concerns_sum. The first instrument we use is a blue state dummy with a value of one if a firm headquarters in a blue or Democratic state and zero otherwise. Rubin (2008) shows that firms with high CSR

ratings are more likely headquarter in blue or Democratic states. This instrumental variable has a high correlation with a firm's CSR rating, but it is unlikely that the preference of a firms headquarters at blue or red state has a direct effect on merger performance. In addition, the second instrument we used is the average total number of acquirer's CSR strength (Concern) in seven qualitative dimensions of other firms in the same industry and year based on the two-digit SIC codes (El Ghoul et al., 2011; Jha& Cox, 2015; Stellner et al., 2015). Prior studies show that industries are more likely to cluster in specific geographic locations (Baptista and Swann, 1998; Krugman, 1991), which suggest firms in an industry might be similar. A CSR strength (concern) rating of a specific industry highly correlates with acquirers' CSR strengths (concerns), which meet the instrumental variable relevance requirement. However, the instruments built on the other firms based on the entire industry and specific year; there is no reason to believe that these instruments have a significant effect on the acquirer's merger performance, thus also meet the instrumental variable exclusion requirement.

<Insert Table 8 here>

Table 8 reports the results of the instrumental variable analysis to test the association between acquiring firm's CSR strength and concern on merger returns. All models include firm and deal-specific control variables discussed in section 4.3 and control for year and industry fixed effects. Model 1 reports the first stage regression results with *BlueState* and *Strength_Industry* as instruments for potential endogenous variable *Strength_Sum*. Both two instrumental variables have positive and highly significant at 1% level as expected, which confirm the relevance of our instruments for the potentially endogenous variable. Model 2 reports the second stage regression results, and we find that the estimated coefficient for *Strength_Sum* is still insignificant. Model 3 shows the similar and significantly positive results for first stage regression with *BlueState* and *Concern_Industry* as instrumental variables to test the potential endogeneity problem of *Concern_Sum*. By contrast, the second stage regression results in Model 4 show *Concern_Sum* continue to have a significantly negative relation with CAR, which further confirms the robust our finding that acquirers with more irresponsible CSR

activities realize significant negative abnormal returns in merger transactions even consider for the potential endogeneity problem.

Overall, the results of 2SLS regressions confirm our finding that CSR strengths of acquiring firm do not affect acquirer's shareholder returns while its CSR concerns rating has significant negative effects on stock return in mergers, is robust to controlling for endogeneity concerns.

6.3 Additional CSR controversial business issues controls

Except for the approximate indicators for CSR qualitative issues, KLD also provides information controversial business issues for companies in the following "sin" industries: Alcohol, Gambling, Firearms, Nuclear Power, and Tobacco. Different from CSR qualitative ratings, KLD's controversial business issues only report for their concern ratings. Hong and Kacperczyk (2009) show that institutional investors who restricted by societal norm pay a financial cost to avoid from "sin" stocks. One concern, therefore, about our finding of CSR on acquirer's merger returns may be not driven by acquirer's CSR irresponsible behaviors but by those acquirers involved in controversial business issues. To mitigate concerns from societal norm, we modify our models by including additional CSR controversial controls.

<Insert Table 9 here>

Similar to variables in CSR qualitative issues, we use two groups of CSR controversial measurements both from total controversial concern rating and total concern for each dimension. Specifically, a dummy variable indicates a firm involve in any controversial business issues or a dummy variable indicates the any concern in each controversial dimensions. The detailed variable definition is in the appendix A. We re-estimate the models in Table 5 with additional controversial variables and take acquirer's CAR(-1,1) as a key dependent variable. The results in Table 9 show that the coefficient on both Concern_sum and Concern_dummy are still significant and negative across all the models when additional CSR controversial variables are used to control the effects of norm concerns. The CSR strength groups continue to be insignificant.

These results reinforce our earlier evidence that acquirers' CSR responsible activities do not affect the merger returns, but market reacts negatively to acquirers' CSR irresponsible behaviors.

6.4 Other sensitivity tests

<Insert Table 10 here>

We further conduct other additional untabulated sensitivity and robustness tests. We do not report results to save the limited space. First, our findings are robust when considering the effects of the CSR performance of target. Aktas, Bodt, and Cousin (2011) show that acquirer abnormal returns are positively associated with targets' social and environmental performance. This finding suggests that a potential alternative explanation for the negative relation between an acquirer's CSR irresponsibility and CAR is that acquirers with high irresponsible behavirors are more likely to acquire targets with similar higher level of CSR concerns or targets from certain high CSR concern industries, and hence, the acquirer social performance measure use in our previous analyses simply captures target social performance effects. To investigate this alternative explanation, we re-estimate the models in Table 5 with additional CSR target control variables.

Specifically, we first generate dummy variable to capture the any existing of any target CSR dimensions; we then control for when target CSR strength and CSR concern rating is higher than that of the acquirer. Table 10 shows the regressions results that our results remain the same both from the scale and significant level. These results suggest that our main findings on the negative relation between acquirer CSR concern rating and acquirer CAR is not driven by CSR target rating, but rather by CSR concern of acquirers.

Second, our findings are robust to measure bidder abnormal announcement returns using alternative over five- and eleven- day's event windows. Third, our findings are robust when expanding the merger sample to include the acquirers own more than 50% of the target shares instead of 100% after merger transactions. Fourth, our evidence is robust when including acquirers in the utilities (SIC 4900-4999) and financial (SIC 6000-6999) industries. Lastly, our

results are remaining robust when using adjusted measures by adjusting the numbers of CSR indicators for CSR strength and concern ratings.

7. Summary and Conclusion

This paper contributes to the ongoing debate about the effects of corporate social responsibility on corporate performance (market reaction) from a new perspective. We examine how firm's responsible and irresponsible CSR activities effect on shareholder wealth in mergers differently using two alternative groups of CSR measurements. Our findings extend the stakeholder value maximization theory by documenting that CSR strengths of acquiring firm do not have significant effects on acquirer's shareholder returns while CSR concerns of bidder have significant negative effects on merger returns in the short-term. These results suggest that stock market does not reward those good corporate social responsibility activities made by acquiring firms in the short-term. In order words, the high socially responsible commitment may not necessarily lead to higher shareholder returns for acquirers. However, the market is sensitive to acquirer's CSR concerns and reacts negatively to its irresponsible CSR behaviors. In particular, acquirers realize lower cumulative abnormal returns for whose CSR concerns are high in the community, employment relations, environment and human rights CSR dimensions.

Overall, our study suggests that bidder's CSR concerns rating plays a vital role in the stakeholder value maximization view. These findings advise that although corporate social investment cannot increase shareholder returns in the short-term, acquiring firms can minimize their socially irresponsible behaviors to increase the merger returns potentially. Our findings are robust to alternative event windows, hold over endogeneity tests, and remain after considering additional CSR controversial business issues and target CSR ratings. An important research question, one that is beyond the scope of this study, is how a firm's CSR strengths and concerns rating affect the shareholders' wealth and firm performance in the long-term. We leave this research question for future studies to explore.

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Table 1: Sample distribution by year and industry

Panel A presents the mean values of CSR strength and concern ratings by years and the frequency distribution of sample firms by years. Panel B presents the number of observations and the mean values of CSR measures by selected two-digit SIC industries. The sample consists of 1752 completed domestic mergers between years 1995-2013.

Panel A: Mean values and frequency distribution by year

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

Panel B: Mean values and frequency distribution by acquirer industry

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

Table 2: Summary Statistics

This table reports the descriptive statistics of variables. The sample consists of 1752 completed domestic mergers between years 1995-2013 subject to the following selection criteria: (1) the status of M&A transaction deal is completed, (2) exclude the effects from small deals and ensure the merger deal value is greater than $1 million, (3) the acquirer fully charge of the target shares after the merger transaction, (4) the acquirer is US publicly listed firms where stock returns data available from CRSP to compute the abnormal returns, (5) firm's financial data are available from Compustat, (6) the acquirer is covered by the KLD database and with corporate social responsibility scores for various CSR strength and concern dimensions prior to merger deal announcement; (7) exclude those acquirers in the utilities (SIC 4900-4999) and financial (SIC 6000-6999) industries. All continuous variables are winsorized at 5% and 95% level. See Appendix A for variable definitions.

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

Table 3: Univariate tests

This table reports the mean and median cumulative abnormal returns (in percentage) of US acquirers in domestic takeovers during different event windows over 1995-2013. Firms are classified into low and high CSR concerns according to the sample median of CSR concerns sum scores. The significance of the difference in means is determined using standard t-tests. The significance of the difference in medians is based on Mann-Whitney-Wilcoxon tests. *, **, and *** denote significance at the 10%, 5% and 1%, respectively.

Panel A: CSR strength sum

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

Panel B: CSR concern sum

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

Table 4: The positive association between aggregate CSR and merger returns

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

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

Table 5: Regressions of cumulative abnormal returns against CSR strengths and concerns

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

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

Table 6: Regression results for CSR individual dimensions

This table shows the coefficients from regressions of the cumulative abnormal returns of acquiring firms against CSR strengths and concerns dimensions. Panel A shows the regression results use acquirer's CSR strength and concern rating measurement. Panel B shows the regression results use acquirer's CSR strength and concern dummy measurement. Descriptions of the explanatory variables are provided in Appendix A. All models include the year and industry fixed effects. *, ** and *** denote significance at the 10%, 5%, and 1% level, respectively.

	Dependent variable: CAR(-1,1)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
cgov_Strength_Sum	0.00312						
	(0.94)						
cgov_Concern_Sum	-0.00349						
	(-1.36)						
com_Strength_Sum		-0.00040					
		(-0.18)					
com_Concern_Sum		-0.00832*					
		(-1.77)					
div_Strength_Sum			-0.00054				
			(-0.40)				
div_Concern_Sum			-0.00087				
			(-0.30)				
emp_Strength_Sum				-0.00003			
				(-0.02)			
emp_Concern_Sum				-0.00482**			
				(-1.96)			
env_Strength_Sum					-0.00070		
					(-0.37)		
env_Concern_Sum					-0.00448**		
					(-2.02)		
hum_Strength_Sum						0.00403	
						(0.67)	
hum_Concern_Sum						-0.01208***	
						(-2.74)	
pro_Strength_Sum							0.00345
							(1.04)
pro_Concern_Sum							-0.00078
							(-0.32)
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1752	1752	1752	1752	1752	1752	1752
Adj. R-sq	0.073	0.073	0.071	0.074	0.073	0.075	0.072

Table 7: CSR strength and CSR concern rating separately

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

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

Table 8: Robustness to Endogeneity

This table reports the results of the instrumental variables analysis to test the association between acquiring firms' CSR strength and concern on merger returns. The instrument *BlueState* is a dummy variable value equal to one if a firm's headquarters is located in the blue or Democratic state and zero otherwise. The instrument *Strength_Industry* is the average total number of acquirer's CSR strengths in seven qualitative dimensions of other firms in the same industry and year. The instrument *Concern_Industry* is the average total number of acquirer's CSR concerns in seven qualitative dimensions of other firms in the same industry and year. Panel A shows the endogeneity test results for Strength_Sum by using Blue state and Strength_Industry as instrumental variables. Model 1 shows the first stage regression results with Strength_Sum as dependent variable and Model 2 shows its 2SLS results. Panel B shows the endogeneity test results for Concern_Sum by using Blue state and Concern_Industry as instrumental variables. Model 3 shows the first stage regression results with Concern_Sum as dependent variable and Model 4 shows its 2SLS results. All models include the firm and deal level control variables discussed in section 4.3. All models include the year and industry fixed effects. Descriptions of the explanatory variables are provided in Appendix A. *, ** and *** denote significance at the 10%, 5%, and 1% level, respectively.

Panel A: Strength_Sum			**Panel B: Concern_Sum**		
	OLS	2SLS		OLS	2SLS
	(1)	(2)		(3)	(4)
Strength_Sum		-0.00284	Concern_Sum		-0.007514**
		(-0.79)			(-2.00)
Blue state	0.45031***		Blue state	0.30680**	
	(2.76)			(2.29)	
Strength_Industry	0.54718***		Concern_Industry	0.53438***	
	(5.63)			(5.21)	
Firmsize	1.28525***	0.00064	Firmsize	0.64448***	0.00192
	(22.72)	(0.13)		(16.09)	(0.72)
Leverage	-3.03467***	0.04460**	Leverage	-0.92706*	0.04504**
	(-4.01)	(2.09)		(-1.68)	(2.48)
TobinQ	-0.15249*	0.00304	TobinQ	0.03411	0.00361*
	(-1.79)	(1.46)		(0.61)	(1.75)
MB	0.03685	-0.00014	MB	-0.03925	-0.00051
	(0.93)	(-0.16)		(-1.46)	(-0.59)
Freecashflow	1.20587	0.01296	Freecashflow	0.06204	0.00818
	(1.40)	(0.57)		(0.11)	(0.35)
Diversifying	0.20357	-0.00014	Diversifying	0.27528**	0.00162
	(1.33)	(-0.04)		(2.64)	(0.49)
Targetprivate	0.09941	0.01068***	Targetprivate	0.01994	0.01051***
	(0.71)	(3.34)		(0.21)	(3.31)
Relsize	-0.59717***	-0.01371*	Relsize	-0.21519	-0.01372*
	(-2.82)	(-1.85)		(-1.34)	(-1.90)
Cashonly	-0.0862	0.00476	Cashonly	-0.09007	0.00443
	(-0.61)	(1.51)		(-0.92)	(1.41)
Hostile	-1.7225***	-0.01371	Hostile	-0.99879*	-0.01502
	(-3.75)	(-0.75)		(-1.89)	(-0.99)
Tender	0.04782	0.00438	Tender	0.18083	0.00567
	(0.20)	(1.00)		(1.15)	(1.27)
Constant	-9.11913***	0.01094	Constant	-4.93269***	0.00336
	(-10.78)	(0.34)		(-7.78)	(0.15)
Year FE	Yes	Yes	Year FE	Yes	Yes
Industry FE	Yes	Yes	Industry FE	Yes	Yes
N	1727	1727	N	1727	1727
adj. R-sq	0.5919	0.2119	adj. R-sq	0.4872	0.2034

Table 9: Robustness test with additional CSR controversial control variables

This table shows the robustness tests results by adding additional CSR controversial concern variables. The dependent variable is the cumulative abnormal returns of event window (-1,1). Model (1)-(4) show coefficients from a regression of the cumulative abnormal returns of acquiring firms' CSR strength and concern ratings. Model (5)-(8) show coefficients from a regression of the cumulative abnormal returns of acquiring firms' CSR strength and concern dummies. Descriptions of the explanatory variable are provided in Appendix A. All models include the firm and deal level control variables discussed in section 4.3. All models include the year and industry fixed effects. *, ** and *** denote significance at the 10%, 5%, and 1% level, respectively.

	CSR_Sum				CSR_dummy			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Strength_Sum	0.00017	0.00025	0.00022	0.00024				
	(0.308)	(0.453)	(0.388)	(0.424)				
Concern_Sum	-0.00205**	-0.00205**	-0.00196**	-0.00196**				
	(-2.507)	(-2.519)	(-2.373)	(-2.381)				
Strength_dummy					0.00036	0.00046	0.00048	0.00049
					(0.093)	(0.119)	(0.125)	(0.127)
Concern_dummy					-0.00813*	-0.00796*	-0.00789*	-0.00787*
					(-1.945)	(-1.905)	(-1.895)	(-1.891)
Controversial_Sum	0.01166***				0.01239***			
	(2.632)				(2.814)			
Controversial_dummy		0.01026**				0.01126**		
		(2.000)				(2.209)		
alc_Sum			0.01377				0.01068	
			(1.282)				(0.960)	
gam_Sum			0.00107				0.00253	
			(0.088)				(0.205)	
tob_Sum			0.04455**				0.04688**	
			(2.223)				(2.368)	
mil_Sum			0.01022*				0.01089**	
			(1.945)				(2.083)	
nuc_Sum			0.00514				0.00424	
			(0.252)				(0.203)	
fir_Sum			0.03779**				0.03833**	
			(2.096)				(2.276)	
acl_dummy				0.01359				0.01048
				(1.266)				(0.943)
gam_dummy				0.00118				0.00264
				(0.096)				(0.213)
tob_dummy				0.04458**				0.04693**
				(2.224)				(2.371)
mil_dummy				0.00968*				0.01045*
				(1.692)				(1.835)
nuc_dummy				0.00514				0.00424
				(0.251)				(0.203)
fir_dummy				0.03790**				0.03837**
				(2.101)				(2.278)
Constant	0.00041	0.00117	0.00238	0.00246	0.00835	0.00849	0.00973	0.00966
	(0.028)	(0.079)	(0.162)	(0.167)	(0.598)	(0.608)	(0.699)	(0.693)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1752	1752	1752	1752	1752	1752	1752	1752
adj. R-sq	0.079	0.077	0.078	0.078	0.078	0.076	0.078	0.077

Table 10: Additional target CSR controls

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

Panel A: CSR target dimension controls

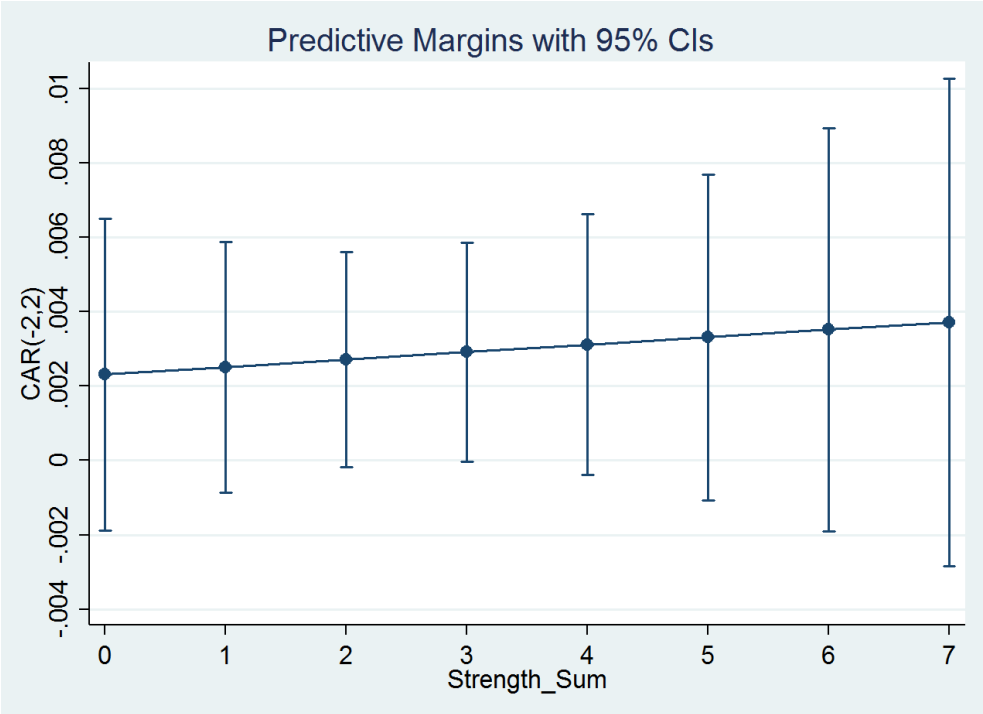
	CAR(-1,1)		CAR(-2,2)		CAR(-5,5)	
	(1)	(2)	(3)	(4)	(5)	(6)
Strength_Sum	0.00035		0.00026		-0.00040	
	(0.637)		(0.396)		(-0.467)	
Concern_Sum	-0.00203**		-0.00205**		-0.00221*	
	(-2.543)		(-2.206)		(-1.747)	
CSR_Strength		0.00080		-0.00023		-0.00494
		(0.209)		(-0.049)		(-0.806)
CSR_Concern		-0.00812*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

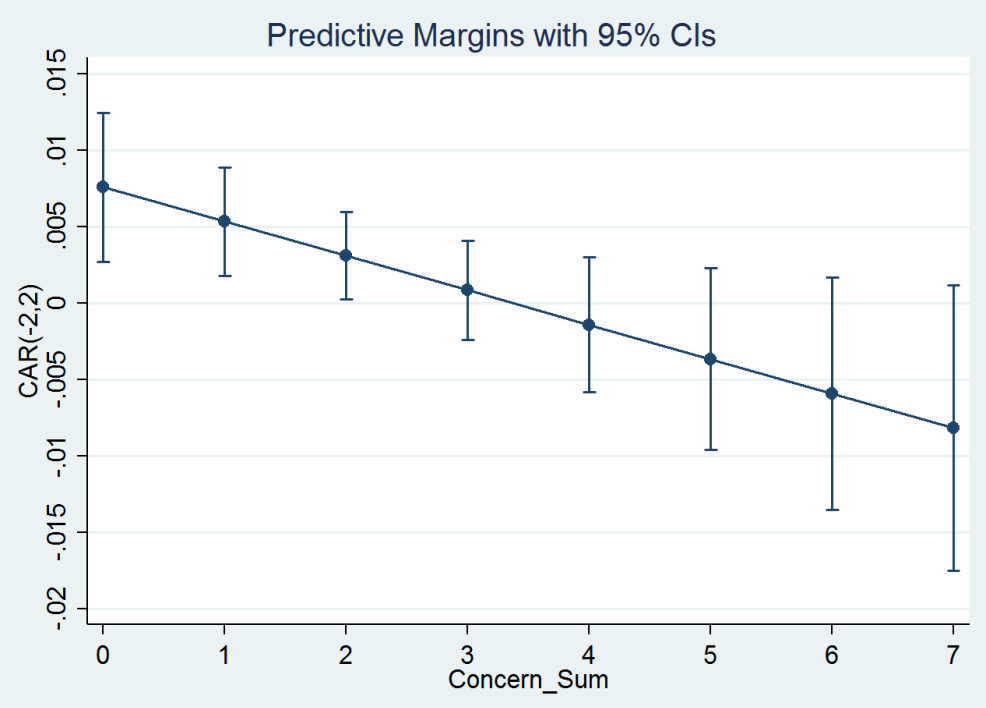
Panel B: Relative CSR performance between acquirer and target as controls

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

Figure 1: CSR Marginal effects

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





Appendix A: Variable description and sources

Variable name	Variable description	Source
	Panel A: Abnormal returns	
CAR(-1, 1)	Three-day cumulative abnormal return (in percentage points) calculated using the market model. The market model parameters are estimated over the period (−210, −11) with the CRSP value-weighted return as the market index.	CRSP
CAR(-2, 2)	Five-day cumulative abnormal return (in percentage points) calculated using the market model. The market model parameters are estimated over the period (−210, −11) with the CRSP value-weighted return as the market index.	CRSP
CAR(-5, 5)	Eleven-day cumulative abnormal return (in percentage points) calculated using the market model. The market model parameters are estimated over the period (−210, −11) with the CRSP value-weighted return as the market index.	CRSP
	Panel B: Corporate social responsibility	
Strength_Sum	The total score of seven CSR strength measures in areas of community, corporate governance, diversity, employee relations, environment, human rights and product.	KLD
Concern_Sum	The total score of seven CSR concern measures in areas of community, corporate governance, diversity, employee relations, environment, human rights and product.	KLD
Strength_dummy	Dummy variable equal to one if the acquirer firm has any areas of the community, corporate governance, diversity, employee relations, environment, human rights and product marked as strength and zero otherwise.	KLD
Concern_dummy	Dummy variable equal to one if the acquirer firm has any areas of the community, corporate governance, diversity, employee relations, environment, human rights and product marked as a concern and zero otherwise.	KLD
RawCSR	The difference between the total CSR strength scores and total CSR concern scores of community activities, corporate governance, diversity, employee relations, environmental record, human rights, and product quality and safety dimensions.	KLD
AdjCSR	The sum of yearly adjusted community activities, corporate governance, diversity, employee relations, environmental record, human rights, and product quality and safety KLD STATS corporate social responsibility scores. Adjusted CSR is estimated by scaling the raw strength and concern scores of each category by the number of items of the strength and concern of that category in the year and then taking the net difference between adjusted strength and concern scores for that category.	KLD
cgov_Strength_Sum	The score of corporate governance strength for the firm-year.	KLD
cgov_Concern_Sum	The score of corporate governance concern for the firm-year.	KLD
com_Strength_Sum	The score of community strength for the firm-year.	KLD
com_Concern_Sum	The score of community concern for the firm-year.	KLD

div_Strength_Sum	The score of diversity strength for the firm-year.	KLD
div_Concern_Sum	The score of diversity concern for the firm-year.	KLD
emp_Strength_Sum	The score of employee relations strength for the firm-year.	KLD
emp_Concern_Sum	The score of employee relations concern for the firm-year.	KLD
env_Strength_Sum	The score of environment strength for the firm-year.	KLD
env_Concern_Sum	The score of environment concern for the firm-year.	KLD
hum_Strength_Sum	The score of human rights strength for the firm-year.	KLD
hum_Concern_Sum	The score of human rights concern for the firm-year.	KLD
pro_Strength_Sum	The score of product quality and safety strength for the firm-year.	KLD
pro_Concern_Sum	The score of product quality and safety concern for the firm-year.	KLD
Controversial_Sum	The total score of CSR controversial dimensions for the firm-year.	KLD
Controversial _dummy	Dummy equal to one if the firm has any areas of controversial (alcohol, gambling, tobacco, firearms, military and nuclear power) rating marked a concern and zero otherwise.	KLD
alc_Sum	The score in CSR alcohol dimension for the firm-year.	KLD
acl_dummy	Dummy equal to one if the firm in alcohol dimension marked concern and zero otherwise.	KLD
gam_ Sum	The score in CSR gambling dimension for the firm-year.	KLD
gam_dummy	Dummy equal to one if the firm in gambling dimension marked a concern and zero otherwise.	KLD
tob_ Sum	The score in CSR tobacco dimension for the firm-year.	KLD
tob_dummy	Dummy equal to one if the firm in tobacco dimension marked a concern and zero otherwise.	KLD
mil_ Sum	The score in CSR military dimension for the firm-year.	KLD
mil_dummy	Dummy equal to one if the firm in military dimension marked a concern and zero otherwise.	KLD
nuc_ Sum	The score in CSR nuclear power dimension for the firm-year.	KLD
nuc_dummy	Dummy equal to one if the firm in nuclear power dimension marked a concern and zero otherwise.	KLD
fir_ Sum	The score in CSR firearms dimension for the firm-year.	KLD
fir_dummy	Dummy equal to one if the firm in firearms dimension marked a concern and zero otherwise.	KLD

TGT_Strength_dummy	Dummy variable equal to one if the target firm has any areas of the community, corporate governance, diversity, employee relations, environment, human rights and product marked as strength and zero otherwise.	
TGT_Concern_dummy	Dummy variable equal to one if the target firm has any areas of the community, corporate governance, diversity, employee relations, environment, human rights and product marked a concern and zero otherwise.	
Target_strength_high	Dummy variable equal to one if the target CSR strength rating is higher than that of the acquirer and zero otherwise.	
Target_concern_high	Dummy variable equal to one if the target CSR concern rating is higher than that of the acquirer and zero otherwise.	
	Panel C: Bidder characteristics	
Firmsize	Log of the book value of total assets.	
Freecashflow	Operating income before depreciation – interest expenses – income taxes – capital expenditures, scaled by book value of total assets.	Compustat
Leverage	The book value of debts (sum of current liabilities and long-term debt) divided by market value of assets (total book value of assets minus book value of equity plus the market value of equity).	Compustat
TobinQ	The market value of assets (total book value of assets minus book value of equity plus the market value of equity) over book value of assets.	Compustat
MB	The market value of equity over book value of equity.	Compustat
	Panel D: Deal characteristics	
Diversifying	Dummy variable equal to one if acquirer and target have the different SIC code and zero otherwise.	SDC
Targetprivate	Dummy variable equal to one if the target is a private firm and zero otherwise.	SDC
Relsize	The deal value reported in SDC over the market value of acquirer equity.	SDC
Cashonly	Dummy variable equal to one if the merger is made entirely with a cash payment and zero otherwise.	SDC
Hostile	Dummy value equal to one if a merger attitude is classified as hostile and zero otherwise.	SDC
Tender	Dummy variable equal to one if the deal is reported as a tender offer in SDC and zero otherwise.	SDC

Appendix B: KLD strength and concern indicators

KLD category	Strength items	Concern items
Community	(1) Charitable Giving; (2) Innovating Giving; (3) Non-US Charitable Giving; (4) Support for Housing; (5) Support for Education; (6) Indigenous Peoples Relations; (7) Volunteer Programs; (9) Other Strength.	(1) Investments Controversies; (2) Negative Economic Impact; (3) Indigenous Peoples Relations; (4) Tax Disputed; (5) Other Concern.
Corporate Governance	(1) Limited Compensation; (2) Ownership Strength; (3) Transparency Strength; (4) Political Accountability Strength; (5) Other Strength.	(1) High Compensation; (2) Ownership Concern; (3) Accounting Concern; (4) Transparency Concern; (5) Political Accountability Concern; (6) Other Concern.
Diversity	(1) CEO; (2) Promotion; (3) Board of Directors; (4) Work/ Life Benefits; (5) Women& Minority Contracting; (6) Employment of the Disabled; (7) Gay& Lesbian Policies; (8) Other Strength.	(1) Controversies; (2) Non-Representation; (3) Other Concern.
Employee Relations	(1) Union Relations; (2) No-Layoff Policy; (3) Cash Profit Sharing; (4) Employee Involvement; (5) Retirement Benefits Strength; (6) Health and Safety Strength; (7) Other Strength.	(1) Union Relations; (2) Health and Safety Concern; (3) Workforce Reductions; (4) Retirement Benefits Concern; (5) Other Concern.
Environment	(1) Beneficial Products and Services; (2) Pollution Prevention; (3) Recycling; (4) Clean Energy; (5) Communications; (6) Property, Plant, and Equipment; (7) Management Systems; (8) Other Strength.	(1) Hazardous Waste; (2) Regulatory Problems; (3) Ozone Depleting Chemicals; (4) Substantial Emissions; (5) Agricultural Chemicals; (6) Climate Change; (7) Other Concern.
Human Rights	(1) Positive Record in South Africa; (2) Indigenous Peoples Relations Strength; (3) Labor Rights Strength; (4) Other Strength.	(1) South Africa; (2) Northern Ireland; (3) Burma Concern; (4) Mexico; (5) Labor Rights Concern; (5) Indigenous Peoples Relations Concern; (6) Other Concern.
Product	(1) Quality; (2) R&D/ Innovation; (3) Benefits to Economically Disadvantaged; (4) Other Strength.	(1) Product Safety; (2) Marketing/ Contracting Concern; (3) Antitrust; (4) Other Concern.
Alcohol	N/A	(1) Licensing; (2) Manufacturers; (3) Manufacturers of Products Necessary for Production of Alcoholic Beverages; (4) Retailers; (5) Ownership by an Alcohol Company; (6) Ownership of an Alcohol Company; (7) Alcohol Other Concern.
Gambling	N/A	(1) Licensing; (2) Manufacturers; (3) Owners and Operators; (4) Supporting Products or Services (5) Ownership by a Gambling Company; (6) Ownership of a Gambling Company; (7) Gambling Other Concern.
Tobacco	N/A	(1) Licensing; (2) Manufacturers; (3) Manufacturers of Products Necessary for Production of Tobacco products; (4) Retailers; (5) Ownership by a Tobacco Company; (6) Ownership of a Tobacco Company; (7) Tobacco Other Concern.
Firearms	N/A	(1) Manufacturers; (2) Retailers; (3) Ownership by a Firearms Company; (4) Ownership of a Firearms Company
Military	N/A	(1) Manufacturers for Weapons for Weapons Systems (2) Manufacturers of components for Weapons for Weapons Systems (3) Ownership by a Military Company; (4) Ownership of a Military Company; (5) Minor Weapons Contracting Involvement; (6) Major Weapons-related Supplier; (7) Military Other Concern.
Nuclear Power	N/A	(1) Construction& Design of Nuclear Power Plants; (2) Nuclear Power Fuel and Key Parts; (3) Nuclear Power Service Provider; (4) Ownership of a Nuclear Power Company; (5) Ownership by a Nuclear Power Company; (6) Design; (7) Fuel Cycle/Key parts; (8) Nuclear Power Other Concern.

Appendix C: Variable correlation Matrix

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