Revisiting the Effect of Cultural Similarities on Mergers & Acquisitions

Marc Antoine Tizié Gnanazan

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Telfer School of Management
University of Ottawa

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Abstract

Our research study investigates the relationship between cultural similarities in CSR policies and M&As results. This research builds upon Bereskin et al. (2018) by examining how CSR Strength and CSR Concern dimensions affect M&A occurrence rates, as well as both Cumulative Abnormal Returns (CARs) and post-merger operating performance.

The research demonstrates that both CSR similarity dimensions enhance M&A deal success through better negotiation processes and stakeholder trust development. Our results for the CARs tests do not show a significant influence of either firm's CSR Strength or Concern similarity. Post-merger performance shows evidence of positive effects from CSR Concern, yet CSR Strength fails to produce significant effects, which demonstrates complex interactions that affect long-term results. The research demonstrates to practitioners and policymakers that CSR-based cultural alignment creates successful M&A strategies through its presentation of this need. Future research should analyze different CSR aspects with their market-wide effects across various market environments.

The research contributes to corporate strategy and CSR knowledge by demonstrating how cultural alignment leads to successful M&As in the current globalized business environment.

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I. Introduction

Over the past two decades, the failure of numerous Mergers and Acquisitions (M&As) has been a widespread issue. Research indicates that a significant part, between 70% and 90%, of these failures can be attributed to integration problems, with corporate culture playing an essential role (Kenny, 2020). This research proposal aims to dive deeper into the complex dynamic between cultural similarity and M&A success, building upon the groundwork laid by Bereskin et al. (2018) in their study on 'The Effect of Cultural Similarity on Mergers and Acquisitions.' The goal is to better understand the implications for the United States, which was selected as a proxy for the North American market environment.

In their groundbreaking study, Bereskin et al. (2018) examined the impact of cultural similarity between acquirors and target firms, using corporate social responsibility (CSR) characteristics as a proxy (p.1995). The reasoning behind using CSR behaviour is that companies usually communicate their vision, mission and shared values through CSR policies and practices, defining the firm's corporate culture (Hoi, Wu, and Zhang (2013), Gao, Lisic, and Zhang (2014)). Their statistical tests on M&A data from 1994 to 2014 revealed that cultural similarity aids deal completion and post-merger integration. This research, however, aims to revisit the influence of corporate culture compatibility, a critical factor in M&A success, to determine if the nature of the cultural compatibility matters and influences the different outcomes, whether it's a similarity based on *CSR strength measures* or *CSR concern measures*. This presents a fresh perspective on this important topic, sparking new pathways for research and perspectives.

As it is also very important to understand the impact of corporate cultural distance on the long-term performance of the merged entity surrounding the M&A event, we will discuss further

one of the hypotheses of the proposed study, which looks at how different CSR similarity affects post-merger performance. Despite the arduous journey of a merger or acquisition, the end goal is to unlock synergies from the newly acquired firm that boost overall performance. Therefore, we want to know if a positive relationship exists between corporate cultural similarity and remarkable post-merger performance.

Following the path of Bereskin et al., we also hypothesize that similarity in CSR behaviour reflects the cultural alignment between two firms and still increases the likelihood of firms forming merger pairs with superior post-merger performance. In other words, firms with similar CSR practices tend to share similar cultures, which increases the chances of experiencing fewer post-merger integration challenges and makes the merging process smoother. Consequently, their deals could exhibit superior merger synergies. On the flip side, if companies have different CSR policies, it may increase the complexity and cost of integrating various stakeholders from different organizations. (2018, p.1997).

As this research is a continuation of the study by Bereskin et al. (2018), the methodology will be similar but with a crucial update. The main independent variable will no longer be the aggregate CSR Similarity measure; instead, there will be two main independent variables: *CSR Similarity Strength* and *CSR Similarity Concern.* These two main variables are measured by grouping the KLD social scores in the *Strength* categories together (corporate policies with a positive social impact) and the KLD social scores in the *Concern* categories together (corporate policies with a negative social impact).

Our research will examine how these two independent variables affect stakeholder perceptions and corporate reputation as well as organizational performance and decision-making processes. Our analysis of CSR Similarity Strength and CSR Similarity Concern will deliver

advanced insights into how various corporate social responsibility dimensions impact stakeholder engagement and business results.

To test our hypotheses, we will use statistical techniques like regression analysis, consider an additional factor MARKET_SHOCK (economic and financial market shock events) and add to the initial research sample data up until 2019. MARKET_SHOCK is a dummy variable that takes a value of 1 if the M&A announcement date falls within the critical period affected by a market shock event (i.e. 3-month window after the market shock event date, or 3-day window for stock event studies), and 0 otherwise. The list of the different economic and financial market shock events used in this study is reported in Appendix A. The dummy variable MARKET_SHOCK is often overlooked in previous research, and our study proposes that this new control variable, distinct from issues of inside culture, is intended to help understand how outside shocks, such as economic crises, which alter valuations and capital availability.

Additionally, we will perform an event study, a method widely used in M&A research, to demonstrate the impact of M&A announcements on Combined Announcement Returns (CARs) during both periods, from 1994 to 2014 and from 2015 to 2019. To accomplish this objective, we will conduct a study event and run different regression models.

This research has the potential to enrich the field of finance by providing insight into recent interactions between cultural alignment and firm acquisition success, along with perspectives on what to expect in terms of corporate cultural alignment of M&A deals during major financial events disrupting the financial market's stability that practitioners and policymakers could use to achieve better social and economic prosperity.

II. Literature Review

Many researchers have studied the different causes of merger failures, and the most consensus was related to cultural misalignment between the acquiror and targeted firms. A group of researchers, including Graham, Harvey, and Popadak, conducted a survey in 2015 to assess what executives considered most important in their decision-making process in pursuing M&A deals. The results showed that 48% of these executives would not pursue M&A deals if there is a concern of cultural misalignment, and another 28% of them revealed that they would use this information in the negotiation stages to discount by 10% or 30% of the purchase price (Graham et al., 2015). Other authors like Finkelstein (2002), Deadlock (2010) and Bouwman (2013), as cited in Bereskin et al., (2018) supported the undeniable influence of cultural fit on the M&A outcomes as the post-integration phase is highly dependent on the organizational behaviour and synergy of shared beliefs.

In fact, the lack of cultural fit is often the cause of high-profile M&A failures. For example, we can refer to the Daimler AG and Tesla case in 2009, when the established and prestigious automobile company Daimler AG, the parent company of Mercedes-Benz, acquired a significant stake (nearly 10%) in Tesla Motors to leverage Tesla's expertise in electric vehicle technology and accelerate Daimler's electrification efforts (Tesla, 2010). Despite the initial optimism, as this acquisition seemed to be a perfect match between an established firm that is looking for innovation and a startup developing a disruptive product in the automotive business, Daimler's traditional automotive mindset clashed with Tesla's agile and disruptive approach to innovation, leading to friction in their decision-making and integration efforts. Therefore, in 2014, Daimler decided to sell its stake in Tesla to focus more on its own electric vehicle development (Medium, 2023).

In addition, choosing corporate social responsibility (CSR) as a proxy for firms' corporate culture is no accident. Indeed, Benabou and Tirole (2010) (as cited in Bereskin et al., 2018) affirmed that companies commonly express their values and vision by disclosing CSR practices. Other researchers, like Gao, Lisic, and Zhang (2014), argued that the visible part of a firm's corporate culture iceberg is its CSR practices, which display its mission and values in their article on "Commitment to social good and insider trading." They used the context of insider trading to show how companies' CSR policies influence the behaviour of executives, who tend to display the company's core values in their decision to engage in insider trading. Thus, Bereskin et al. (2018) decided to explore more in-depth the effects of similarities in firms' CSR practices on merger likelihoods and outcomes by testing the hypothesis that similarity in CSR behaviour reflects cultural similarity between two firms and is positively related to the likelihood of firms forming merger pairs and to superior post-merger performance (p.1997).

Many other researchers have also contributed to the topic, allying corporate culture similarity and M&A results by finding different ways to quantify cultural fit, which has a more qualitative dimension. For example, as Bereskin et al. mentioned in their study, Tremblay Andreanne, who initially published her research in 2017 and revised it in 2020, used textual analysis to quantify dimensions of corporate culture by counting the frequency of words in a firm's 10-K filings that correspond to the following competing values framework (create, compete, control, and collaborate). Using the congruence of these word counts, Tremblay (2020) reported a negative association between cultural similarity and post-merger performance (2018, p.1999). Others, such as Alexandridis et al. (2016), use Environmental, Social, and Governance (ESG) data for firms in many different countries as a proxy for corporate cultural similarity between acquirors

and targets and find a positive relationship associated with synergies from mergers and cultural fit (Bereskin et al., 2018, p.1999).

CSR Similarity & M&A Likelihood

Deng, Kang and Low (2013) studied the impact of CSR compatibility between firms on their likelihood of forming a merged entity, using a sample of U.S. mergers between 1992 and 2007. Deng et al. demonstrated that acquirors with strong CSR profiles are more likely to pursue targets with compatible social responsibility practices (2013). They argued that overlapping CSR priorities reduce integration risks by aligning stakeholder expectations, which directly supports the hypothesis that cultural similarity between an acquiror and a target could facilitate a merger occurrence.

Bereskin et al., in their previous research on U.S. M&A deals during the period from 1994 to 2014, observed a positive and statistically significant coefficient on the CSR similarity variable (at the 1% level). This finding indicates that firms that share similar CSR policies are more likely to proceed with a merger compared to a control group of hypothetical pairs, where at least one firm is a real acquiror or target that did not merge. Also, this effect is economically meaningful: a 1-standard-deviation increase in CSR similarity is associated with a 33% increase in the odds of forming an actual merger pair versus a pseudo pair (2018, p.2009).

CSR Practices & Cumulative Abnormal Returns

CSR practices also impact short-term returns, such as cumulative abnormal returns (CARs), by sending signals to the market. Many researchers assess how a firm's CSR practices can influence its CARs around an M&A announcement date.

Tong, L., Wang, H., & Xia, J. (2020) conducted an event study analysis to determine how a target firm's CSR practices influence the short-term market return of acquirors around an acquisition announcement, using a sample of U.S. mergers between 2000 and 2012. After analyzing several Asian mergers from 2005 to 2019, they demonstrated that deals with CSR-aligned partners generated higher cumulative abnormal returns (CARs) over (−1,+1) windows compared to mismatched pairs (Tong, L., Wang, H., & Xia, J., 2020). This observation suggests that the market rewards perceived synergy related to cultural fit.

Besides, Bereskin et al., in their previous research on M&A deals during the period from 1994 to 2014, compared the mean and median announcement window CARs (-3;+3) for HIGH CSR SIMILARITY pairs (top 25%) and LOW CSR SIMILARITY pairs (bottom 25%). They found that the mean and median of the HIGH SIMILARITY group were 3.5% and 3.1%, respectively, higher than the LOW SIMILARITY group. This finding indicates that mergers between two firms with similar CSR policies create higher synergistic gains. (2018, p.2010)

CSR Influence & Financial Performance

Despite extensive research, the economic impact of CSR remains a topic of debate. For instance, Friedman (2007) and Mackey et al. (2007) found no significant evidence to suggest that CSR initiatives directly contribute to long-term financial performance. Meanwhile, other studies have revealed that CSR efforts can, in fact, have a significant effect on how well a company performs.

Many researchers have explored the impact of corporate sustainability on financial performance. Alshehhi, A., Nobanee, H., & Khare, N. (2018) found a positive relationship between corporate sustainability efforts and financial results in their study using a sample of 132 shortlisted

papers between 1984 and 2017. They observed that more and more research studies concentrate on the impact of corporate social responsibility (CSR), particularly its social aspect, instead of the full range of sustainability (Alshehhi et al., 2018).

Others like Eccles, R. G., Ioannou, I., & Serafeim, G. (2014), High Sustainability firms (firms that adopted sustainable policies over a long period of time) outperform traditional ones in terms of both stock market (stock price return) and accounting measures such as ROA (Return on Assets), over an 18-year period. Their High Sustainability firms' portfolio outperforms their control firms' portfolios in 14 out of 18 years (2014, p.21).

III. Hypotheses

The research proposal aims to revisit the influence of corporate culture compatibility, using Corporate Social Responsibility (CSR) similarity as a proxy for corporate cultural similarity following the research of Bereskin et al. (2018). It will test how CSR practices affect key performance indicators such as post-merger outcomes, cumulative abnormal returns (CAR), the probability of M&A occurrence and deal completion time. The following hypotheses are proposed:

CSR Similarity and probability of M&A occurrence

One might be tempted to think that two firms with similar CSR practices may be more inclined to merge because CSR similarity minimizes conflict and increases strategic fit. Therefore, this leads to the assumption that, despite the nature of CSR similarity (Strengths or Concerns) between firms, corporate culture measures will positively influence the chances of an M&A occurrence, as they reduce risk and promote the same values and practices, thus facilitating a successful merger.

Hypothesis 1: *Both CSR similarities based on Strengths and Concerns increase the chances of an M&A deal being completed.*

CSR Similarity and Cumulative Abnormal Returns (CAR) (Short-term performance)

If the investors believe that an acquisition will benefit the acquiring firm, the market will tend to react positively around the M&A deal announcement date (Zaheer et al., 2010). The second hypothesis explores the impact of both CSR similarities on the cumulative abnormal returns (CAR) during the period surrounding the M&A announcement. The CSR similarities between the acquiror and target firm can have a positive impact on the CAR around the M&A announcement date. Nowadays, CSR practices are considered a reflection of firm stability and long-term orientation. Therefore, CSR similarities between firms have a significant effect on investors' attitudes and expectations, because we assume that CSR similarity between the merging firms (i.e. firms with similar CSR profiles) is indicative of high cultural compatibility and commitment to shared values which, in turn, could positively influence investors' perception of the deal. Hence, we hypothesize that CSR similarities between the merging firms will have a positive impact on the CAR. Thus, conversely, significant CSR dissimilarity between the merging firms could be interpreted by investors as deal risks and generate less positive or negative CAR.

Hypothesis 2: *CSR similarities lead to an increase in CAR.*

CSR Similarity and Post-Merger Operating Performance (Long-term performance)

Previous literature has established that alignment in values and corporate culture is a key driver of success in mergers and acquisitions (M&A). This hypothesis suggests that if the merging firms have similar CSR initiatives and goals, integration will be smoother, collaboration will be

better, and post-merger performance will be stronger. Hence, it is foreseen that CSR similarity, based on Strengths and Concerns, will both be associated with improved financial performance and more effective operational integration of the merged entity. The third hypothesis looks at the effect of both CSR similarities between the merging firms on post-merger operating performance.

Hypothesis 3: *CSR similarities positively affect post-merger performance.*

IV. Data and Methodology

As this report continues the research from Bereskin et al. (2018), we will use the same data as them, the only difference being the time period, from 1994 to 2019 instead of 1994 to 2014.

1. Merger and Acquisitions Data

This study used the Securities Data Company (SDC) database to collect the sample of all announced and completed U.S. mergers and acquisitions with deal size values over $1 million between 1994 and 2019. Following previous studies (e.g., Deng et al. (2013), Bena and Li (2014)), (as cited in Bereskin et al., 2018), we restricted the sample to completed mergers involving U.S. acquirors with disclosed deal value exceeding $1 million and more than 90% of ownership after the deal to ensure that the acquisitions are meaningful.

We started with a larger dataset but reduced the number of observations to 959 merging pairs from 1994 to 2019, after merging with the KLD database. This number further shrank to 677 pairs when we combined with available key accounting variables (Total assets and Book-to-market ratio) from the COMPUSTAT database. In the different hypothesis tests, we will remove observations that will be missing information on our additional key control variables.

We encountered the same challenges as Bereskin et al. (2018) regarding sample size, which is "principally affected by the need to match mergers from SDC with our CSR similarity measure, the latter of which requires KLD data for both acquiror and target … Given that targets are, on average, considerably smaller than acquirors, and that KLD data have historically been biased against including smaller firms in their universe, the attrition in our sample is reasonable." (p.2004). Also, we obtained Firm characteristics from COMPUSTAT, and stock returns for the event studies from the Center for Research in Security Prices (CRSP) (Bereskin et al., 2018).

As Bereskin et al. (2018) we created a control sample of pseudo-acquiror-target pairs. These new pseudo-pairs are formed following the same approach as Bereskin et al. (2018): "For each actual deal pair in every year, pseudo-pairs are formed by pairing the actual acquiror with up to five matched pseudo-targets based on the actual target-firm characteristics (i.e., industry, firm size, and book-to-market ratio) and by pairing the actual target firm with up to five matched pseudo-acquirors based on the actual acquiror characteristics" (Bena and Li (2014), p.2004). And the "matching criteria for constructing the control sample are intended to control for time, industry, firm size, growth opportunities, and overvaluation that have been shown to drive M&A deals (e.g., Andrade, Mitchell, and Stafford (2001), Shleifer and Vishny (2003), Rhodes-Kropf and Viswanathan (2004), Harford (2005), and Rhodes-Kropf and Robinson (2008))" (as cited in Bereskin et al., 2018, p.2005).

2. CSR Similarity Measure

Following Bereskin's data collection, we will also construct the measure of CSR similarity between companies using the KLD database from 1991 to 2019. As Bereskin et al. stipulated, this specific database has been very effective in the research area for measuring the characteristics of

corporate culture based on policies related to the following categories: *community, corporate governance, diversity, employee relations, environment, human rights, product, tobacco, gambling, military contracting and firearms*. Each category consists of two main components: *Strengths* and *Concerns*. "*Strengths* represent policies, procedures, and outcomes that help a firm make a positive impact on the issue at hand, while *Concerns* represent policies, procedures, and outcomes that tend to have a negative impact on the focal issue" (Khan, Serafeim, & Yoon, 2016). The list of KLD subcategories used to construct our main CSR similarity variables are reported in Appendix C.

Chatterji, Levine, and Toffel (2009) (as cited in Bereskin et al., 2018) argued that there is evidence of the quality of KLD's valuable data, as they found that KLD's environmental concerns for firms are good summaries of their past environmental performance. KLD data on CSR are qualitative in nature, and this database generally assigns a score of 1 to firm *i* at time *t* for each subcategory mentioned above only if the firm shows significant engagement relative to other firms in the market (Bereskin et al., 2018).

We followed Bereskin's (2018) first steps to select multiple KLD subcategories (135) for the *community, corporate governance, diversity, employee relations, environment, human rights, product, tobacco, gambling, military contracting and firearms* categories. We decided to use more KLD subcategories (135) than Bereskin et al. (124) because we believe that the additional ones provide a more complete picture of the firm's CSR policies. From our 135 KLD subcategories chosen, 64 are *Concern* subcategories and 71 are *Strength* subcategories. As Graham et al. (2015) (cited in Bereskin et al., 2018) noted, incorporating the details of a firm's CSR practices through multiple sub-categories is consistent with the notion that corporate culture is multidimensional (p. 2001).

First, we grouped the subcategories identified as *Strengths*, meaning corporate policies with a positive social impact, together. We also grouped separately the ones labeled as *Concerns*, meaning corporate policies with a negative social impact. After that, we computed each firm's KLD subcategory (CSR) scores as a 3-year rolling average (from *t-2* to *t*), to reduce the temporary fluctuations that are unrelated to actual shifts in a firm's CSR policy (Bereskin et al., 2018, p.2002). Then, we constructed numeric vectors of CSR Strength values for the 71 subcategories and numeric vectors of CSR Concern values for the 64 subcategories (one for the acquiror and one for the target). Finally, we calculated the cosine similarity (CSR Similarity) for the Strength and Concern groups between the Acquiror and Target over this 3-year window, to measure how closely the two firms' CSR profiles match in geometric terms.

$$\text{CSR\_SIMILARITY}\left(\bar{\mathbf{x}}_A^{(Y)}, \bar{\mathbf{x}}_T^{(Y)}\right) = \frac{\sum_{j-1}^{n} \bar{x}_{A,j}^{(Y)} \bar{x}_{T,j}^{(Y)}}{\sqrt{\sum_{j-1}^{n} \left(\bar{x}_{A,j}^{(Y)}\right)^2} \sqrt{\sum_{j-1}^{n} \left(\bar{x}_{T,j}^{(Y)}\right)^2}}$$

We have the vector $\bar{x}_{A,j}^{(Y)}$ as the Acquiror's average score over the 3-year rolling window for subcategory *j* (where, n=1, 2, …, 64 or 71) and the vector $\bar{x}_{T,j}^{(Y)}$ as the Target's average score over the 3-year rolling window for subcategory *j*.

If either vector has zero length (meaning that all values are zeros), or the vectors are orthogonal, the similarity score is set to 0, and if both CSR profiles have the value 1 in the same CSR subcategories, the similarity score is set to 1 (Bereskin et al., 2018).

This indicates that both firms had the same high-level commitment in those areas. Therefore, this method allows us to quantify the similarity between the CSR profiles of the acquiror and the target firm, following Bereskin's approach.

Consequently, we defined low-similarity mergers as those in the bottom quartile (bottom 25%) of the in-sample CSR similarity distribution and high-similarity mergers as those in the top quartile (top 25%), following the approach used by Bereskin et al. (2018) in their study.

3. Methodology: Hypothesis Testing

We will test different hypotheses using the CSR Similarity variable constructed above along with other control variables such as firm characteristics (size, industry, etc.), the MARKET_SHOCK indicator and merger characteristics (method of payment, relative size, etc.) to reduce omitted variable bias and enhance model accuracy. We will also include in some of our analyses the year-fixed effect (*YEAR_FE*) to control for unobserved factors that vary across time but are constant across entities, the deal-fixed effect (*DEAL_FE*) to control for unobserved characteristics specific to each transaction, and the industry-fixed effect (*INDUSTRY_FE*) to control for time-invariant characteristics that are common across firms within the same industry. On top of that, a binary independent variable will be added to differentiate M&A deals done before and after 2014 (1 = after 2014, 0 = before 2014).

Also, regarding some potential endogeneity issues in our study, Bereskin et al. stated that : “In previous studies, there is some discussion of how well KLD data measure CSR, and CSR’s endogeneity with other firm characteristics. This issue is of less concern here because our study focuses on similarity, as opposed to the level of the CSR score itself. Even in an extreme case where these measures are not purely representative of CSR per se, they are still reflective of conscious and costly decisions by management. Indeed, the extent to which KLD variables are inappropriate for measuring managers’ decisions (i.e., are just noise) actually biases against us finding significant results” (2018).

To test Hypothesis 1, which asks whether a higher degree of CSR similarity increases the chances of an M&A deal occurrence, we form a larger sample in which we add the matched control sample of 2,347 pseudo-pairs to the initial sample of 716 actual deal pairs. Those 2,347 pseudo-pairs have been formed by restricting the matching process to use only the sample with the full 11 firm-pair matches (consisting of 1 actual acquiror–target pair, 5 actual acquiror–pseudo-target pairs, and 5 pseudo-acquiror–actual target pairs), following Bereskin et al. approach (2018, pp.2004-2005). Using a conditional logit model like Bena and Li (2014), we define *ACTUAL_DEAL* as a dependent binary variable which is equal to 1 if the pair of firms resulted in an actual deal, and 0 otherwise (Bereskin et al., 2018, p.2007).

We also calculate the similarity between the CSR profiles of the pseudo-pairs to define their CSR Strength and Concern Similarities. We add other control variables that might also influence the chance of a deal, following Bena and Li (2014) such as ACQUIROR_CONTROLS and TARGET_CONTROLS, which include the acquiror's and target's BOOK_TO_MARKET ratios, ROA, LEVERAGE, MANAGERIAL_ABILITY, SALES_GROWTH, CASH, RD_TO_ASSETS or R&D intensity, and ADJUSTED CSR (Bereskin et al., 2018, p.2009). Equations 1 & 2 represent the models used here:

$$(1)\quad ACTUAL\_DEAL = \alpha + \beta_1 \cdot CSR\_Similarity\_Concern + \beta_2 \cdot SAME\_INDUSTRY + \beta_3 \cdot ACQUIROR\_CONTROLS + \beta_4 \cdot TARGET\_CONTROLS + DEAL\_FE + \varepsilon$$

$$(2)\quad ACTUAL\_DEAL = \alpha + \beta_1 \cdot CSR\_Similarity\_Strength + \beta_2 \cdot SAME\_INDUSTRY + \beta_3 \cdot ACQUIROR\_CONTROLS + \beta_4 \cdot TARGET\_CONTROLS + DEAL\_FE + \varepsilon$$

To test Hypothesis 2, asking if CSR similarity in both categories leads to an increase in Cumulative Abnormal Returns (CAR) during the period surrounding the M&A announcement, the methodology used is a multivariate analysis, the ordinary least squares (OLS) regression model on a firm-year level. Like Bereskin et al. (2018) did in their study, we calculated "Abnormal Returns using a market model with the CRSP value-weighted return as the benchmark return, using days -300 through -46 relative to the merger announcement date (day 0) as our estimation period. CARs are computed over -3 to +3 trading days centered on day 0" (2018, p.2010). The dependent variable will be the 7-day combined CAR (-3,+3 days window), and the key independent variable will be the CSR_Similarity measured for each group between the acquiror and target. Other control variables such as PAIR_CONTROLS (deal characteristics), ACQUIROR_CONTROLS (acquiror characteristics) and will also be included. Here is the tested model represented by equation 3:

$$(3) \quad CAR = \alpha + \beta_1 \cdot CSR\_Similarity\_Strength + \beta_2 \cdot CSR\_Similarity\_Concern + \beta_3 \cdot PAIR\_CONTROLS + \beta_4 \cdot ACQUIROR\_CONTROLS + \beta_5 \cdot MARKET\_SHOCK + INDUSTRY\_FE + YEAR\_FE + \varepsilon$$

Then, we will test a second model, where the main independent variables will be High_Similarity (top 25% of CSR Similarity measure) and Low_Similarity (bottom 25% of CSR Similarity measure) for both groups: *Strength* and *Concern* instead, in order to capture the impact of a High CSR similarity fit versus a Low CSR similarity fit. Here are the tested models represented by equations 4 & 5:

$$(4) \quad CAR = \alpha + \beta_1 \cdot High\_Similarity\_Strength + \beta_2 \cdot Low\_Similarity\_Strength + \beta_3 \cdot PAIR\_CONTROLS + \beta_4 \cdot ACQUIROR\_CONTROLS + \beta_5 \cdot MARKET\_SHOCK\_3\_DAYS + INDUSTRY\_FE + YEAR\_FE + \varepsilon$$

$$(5) \quad CAR = \alpha + \beta_1 \cdot High\_Similarity\_Concern + \beta_2 \cdot Low\_Similarity\_Concern + \beta_3 \cdot PAIR\_CONTROLS + \beta_4 \cdot ACQUIROR\_CONTROLS + \beta_5 \cdot MARKET\_SHOCK\_3\_DAYS + INDUSTRY\_FE + YEAR\_FE + \varepsilon$$

We will follow the subsequent steps to test Hypothesis 3, which posits that both CSR similarity Strength and Concern positively impact post-merger operating performance.

We will run a model using the Heckman two-stage model, where the post-merger operating performance will be measured by the acquiror's cash flow to total assets (CF_to_asset), as Dutta et al. did in their 2013 research. In stage 1, we will follow the approach of Dutta et al. by identifying all US firms from COMPUSTAT that have not made any acquisitions in the period from 1994 to 2019. Second, we will perform an OLS regression considering all acquirors, targets, and matching firms, and regress the firms' return on equity on firm size and market-to-book value variables (Loughran & Vijh, 1997), as cited in Dutta et al. (2013). Then, matching firms will be selected based on the nearest propensity score obtained by using the coefficients of firm size and price-to-book value factors. Once we obtain the benchmark cash flows, the matching firm adjusted cash flows are computed as follows (Dutta et al., 2013):

$$Adjusted\ cash\ flow\ return = Acquiror\ CF\_to\_asset - Matching\ firm\ CF\_to\_asset$$

Subsequently, we calculate the matching firm-adjusted profitability for each acquiring firm for the three years preceding and the three years following the M&A event. Following the recommendation of Healy et al. (1992), we will use the 'intercept model' to test and gauge the change in long-term operating performance. In the 'intercept model', acquisition-induced changes in cash flow are estimated as the intercept (α) of the cross-sectional regression of post-acquisition adjusted cash flows on pre-acquisition adjusted cash flows, controlling for other deal- and firm-specific factors (Dutta et al., 2013). In addition, CSR Similarities for the Strength and Concern groups will also be added as main independent variables to the 'intercept model', and their induced

changes in cash flow will be estimated by their respective coefficients. For Healy et al. (1992), this methodology ('intercept model') accounts for possible persistence in cash flow returns and is superior to a 'change model' that compares post- and pre-acquisition operating performances directly (Ghosh, 2001; Moeller & Schlingemann, 2005) (as cited in Dutta et al., 2013).

Finally, the methodology employed is the ordinary least squares (OLS) regression model at the firm-year level. The dependent variable here is *POST_ADJUSTED_CF* (matching adjusted post-average cash flow to total assets). *POST_ADJUSTED_CF* is the average of 'adjusted cash flow to total asset' for three post-acquisition periods (years +1, +2 and +3). Similarly, *PRE_ADJUSTED_CF* refers to the average pre-acquisition period (years -1, -2 and -3) adjusted operating performance of the acquiring firms (Dutta et al., 2013).

Two models are run separately, with the key independent variables set as CSR_Similarity_Strength and CSR_Similarity_Concern, respectively, along with other control variables. Here are the different tested models, represented by equations 6 & 7:

$$(6)\quad POST\_ADJUSTED\_CF = \alpha + \beta_1 \cdot CSR\_Similarity\_Strength + \beta_2 \cdot PRE\_ADJUSTED\_CF + \beta_3 \cdot SAME\_INDUSTRY + \beta_4 \cdot SAME\_STATE + \beta_5 \cdot SERIAL\_ACQUIROR + \beta_6 \cdot RELATIVE\_SIZE + \beta_7 \cdot MARKET\_SHOCK + \beta_8 \cdot ADJUSTED\_CSR + \varepsilon$$

$$(7)\quad POST\_ADJUSTED\_CF = \alpha + \beta_1 \cdot CSR\_Similarity\_Concern + \beta_2 \cdot PRE\_ADJUSTED\_CF + \beta_3 \cdot SAME\_INDUSTRY + \beta_4 \cdot SAME\_STATE + \beta_5 \cdot SERIAL\_ACQUIROR + \beta_6 \cdot RELATIVE\_SIZE + \beta_7 \cdot MARKET\_SHOCK + \beta_8 \cdot ADJUSTED\_CSR + \varepsilon$$

V. Summary of Descriptive Statistics

Table 1 presents the main descriptive statistics of our research across various panels.

The research sample's primary deal variables statistics appear in Table 1 Panel A. The firms participating in deals maintain on average, CSR_SIMILARITY_Strength at 0.1716 and CSR_SIMILARITY_Concern levels at 0.2692, indicating moderate CSR alignment between firms. The standard deviations of 0.2879 and 0.3411 indicate substantial variability in these measures, possibly due to different corporate practices or strategic priorities. The "SAME_INDUSTRY" variable shows a high value of 0.8863, which demonstrates that most deals occur within the same industry because firms seek acquisitions to boost their competitive advantages within their sectors. The "SAME_STATE" variable shows a mean of 0.2555, which shows that geographic location plays a minor role in these deals. The variables "ALL_CASH" and "TENDER_OFFER" present mean values of 0.4254 and 0.1891 respectively, showing that most deals were financed through all cash transactions. The "RELATIVE_SIZE" variable shows a mean of 0.4082 along with a standard deviation of 0.6168. Therefore, deal sizes (value in $) in our sample represent, on average, 40.82% the acquiror's total market capitalization. Also, the distribution of deal sizes shows wide variation because the median value stands at 0.2377 while many deals reach substantial sizes.

The time-series pattern of deals from 1994 to 2019 appears in Table 1 Panel B. The 677 total deals provide adequate data for thorough examination. And the financial crisis after 2008 might explain why firms became more reserved about mergers and acquisitions during that year.

The Actual and Pseudo deals display their CSR similarities through the information presented in Table 1 Panel C. The Actual deals show zero CSR_SIMILARITY_Strength and

Concern at their 10th percentile because numerous deals lack CSR similarity. The 90th percentile reaches 0.7071 for CSR_SIMILARITY_Strength and 0.830 for CSR_SIMILARITY_Concern, which shows that a high level of CSR matching occurs between some firms. Actual deals demonstrate higher CSR_SIMILARITY_Strength throughout all percentiles than Pseudo deals, as Pseudo deals reach only 0.5774 at their 90th percentile. CSR_SIMILARITY_Concern for Pseudo deals shows lower values than actual deals across all percentiles as well. The analysis suggests that CSR alignment plays a vital role in real deals because firms tend to consider CSR when conducting actual business transactions.

The summary statistics for Actual deals used to generate Pseudo-ones, and Pseudo-control deals appear in Panel D of Table 1. The results here are also consistent with the previous analysis between the CSR similarity strength and concern of Actual and Pseudo deals. The "SAME_INDUSTRY" variable shows 0.4361 as its mean value, indicating that numerous deals operate within the same industry, yet many exist across different sectors. The average size of the ACQUIROR amounts to 9.1028, which indicates that large firms tend to make acquisitions because of their available resources and market dominance. The Pseudo-deals show lower mean values for CSR SIMILARITY Strength (0.14) and Concern (0.23) compared to actual deals. The "SAME_INDUSTRY" variable shows 0.2470 as its mean value, and the size of the acquiror in Pseudo-deals amounts to 8.6446.

Table 1: Descriptive Statistics

Table 1 reports summary statistics for the sample. Panel A provides summary statistics for key variables (defined later in this paragraph) within the sample. Panel B provides the distribution of our sample by year. Panel C provides the distribution of CSR Similarities for Actual and Pseudo deal pairs, and Panel D provides summary statistics of ACQUIRORs and targets in both the actual and pseudo control deals. As cited in Bereskin (2018), following Bena and Li (2014), we also construct a control sample of pseudo-deals. Specifically, the sample of pseudo-deals is formed by pairing the actual ACQUIROR with up to five hypothetical target matches (in the same industry and closest in total assets to the deal's actual target firm) and by pairing the actual target firm with up to five hypothetical ACQUIROR matches (in the same industry and closest in total assets to the deal's actual acquiring firm). CSR_SIMILARITY_Strength on one hand is defined as the Jaffe (1986) distance between the ACQUIROR's and target's corporate social responsibility (CSR) policy categorized as *"Strength"* based on their Kinder, Lydenberg, and Domini (KLD) subcategories for the 3 years prior to the merger announcement; CSR_SIMILARITY_Concern on the other hand is corporate social responsibility (CSR) policy categorized as *"Concern"* by KLD; SAME_STATE is an indicator variable equal to 1 if the ACQUIROR and target are incorporated in the same state, and 0 otherwise; HORIZONTAL_INDICATOR is an indicator variable equal to 1 if the strategic purpose of the deal is horizontal, and 0 otherwise; VERTICAL_INDICATOR is an indicator variable equal to 1 if the strategic purpose of the deal is vertical, and 0 otherwise; SIZE is the Natural logarithm of the book value of total assets; BOOK_TO_MARKET is the book value of equity divided by the market value of equity; ROA is earnings before interest, taxes, depreciation, and amortization (EBITDA) scaled by the book value of total assets; SALES_GROWTH is the natural logarithm of the current year's sales divided by the prior year's sales; CASH is cash and short-term investments divided by the book value of total assets; SERIAL_ACQUIROR_INDICATOR is an indicator variable equal to 1 if the firm is a serial ACQUIROR, and 0 otherwise; SAME_INDUSTRY_INDICATOR is an indicator variable equal to 1 if the ACQUIROR and target are in the same 2-digit SIC, and 0 otherwise; RELATIVE_SIZE is deal value scaled by the market capitalization of the ACQUIROR; ALL_CASH_INDICATOR is an indicator variable equal to 1 if the deal is financed by cash only, and 0 otherwise; and TENDER_OFFER_INDICATOR is an indicator variable equal to 1 if the merger is a tender offer, and 0 otherwise. All my variables are inspired by Bereskin et al. (2018).

Panel A. *Summary Statistics for Sample Pairs (N=677)*

Variable	Mean	Std_Dev	Median
CSR_SIMILARITY_Strength	0.17155355	0.2879397	0.0000000
CSR_SIMILARITY_Concern	0.26919973	0.3410681	0.0000000
SAME_INDUSTRY	0.88626292	0.3177264	1.0000000
SAME_STATE	0.25553914	0.4364863	0.0000000
ALL_CASH	0.42540620	0.4947700	0.0000000

(continued on next page)

Variable	Mean	Std_Dev	Median
TENDER_OFFER	0.18906942	0.3918533	0.0000000
SERIAL_ACQUIROR_ INDICATOR	0.54062038	0.4987157	1.0000000
RELATIVE_SIZE	0.40824036	0.6167526	0.2376579
HORIZONTAL_INDICATOR	0.15657312	0.3636665	0.0000000
VERTICAL_INDICATOR	0.02215657	0.1473014	0.0000000

Panel B. *Distribution of Sample Deals by Merger Announcement Year*

Year	No of Deals	Percentage
1994	1	0.15
1995	4	0.59
1996	4	0.59
1997	3	0.44
1998	6	0.89
1999	9	1.33
2000	10	1.48
2001	6	0.89
2002	8	1.18
2003	26	3.84
2004	53	7.83
2005	51	7.53
2006	63	9.31
2007	59	8.71
2008	25	3.69
2009	28	4.14
2010	37	5.47

(continued on next page)

Year	No of Deals	Percentage
2011	24	3.55
2012	31	4.58
2013	34	5.02
2014	32	4.73
2015	33	4.87
2016	38	5.61
2017	33	4.87
2018	39	5.76
2019	20	2.95
Total	677	100.00

Panel C. *Distribution of CSR Similarities for Actual and Pseudo Deals*

Actual Deals	10th.Percentile	25th.Percentile	50th.Percentile	75th.Percentile	90th.Percentile
CSR_SIMILARITY_Strength	0	0	0	0.3592758	0.7071068
CSR_SIMILARITY_Concern	0	0	0	0.5015576	0.8300913

Pseudo-Deals	10th.Percentile	25th.Percentile	50th.Percentile	75th.Percentile	90th.Percentile
CSR_SIMILARITY_Strength	0	0	0	0.2236068	0.5773503
CSR_SIMILARITY_Concern	0	0	0	0.4364358	0.7302967

Panel D. *Summary Statistics for Actual (N=415) and Pseudo-control Deals (N=1,454)*

	Actual			Pseudo		
Variables	Mean	Std Dev	Median	Mean	Std Dev	Median
CSR_SIMILARITY_Strength	0.19	0.3	0.0	0.14	0.26	0.0
CSR_SIMILARITY_Concern	0.26	0.34	0.0	0.23	0.31	0.0
SAME_INDUSTRY	0.44	0.5	0.0	0.25	0.43	0.0
Acquiror Characteristics						
SIZE	9.1	1.81	9.04	8.64	1.64	8.62
ROA	0.13	0.09	0.12	0.12	0.09	0.12
SALES_GROWTH	10.9	64.82	8.04	11.26	49.92	7.36
CASH	0.14	0.16	0.07	0.13	0.15	0.07
BOOK_TO_MARKET	0.44	0.35	0.4	0.43	0.99	0.40
Target Characteristics						
SIZE	7.40	1.69	7.39	7.22	1.65	7.22
ROA	0.07	0.15	0.09	0.07	0.15	0.09
SALES_GROWTH	11.57	35.21	6.11	17.93	247.63	6.56
CASH	0.18	0.21	0.09	0.19	0.21	0.10
BOOK_TO_MARKET	0.47	0.66	0.44	0.43	1.18	0.43

VI. Results and discussions

1. CSR Similarity and probability of M&A occurrence

Table 2 presents the results of two regression models that have been used to test the hypothesis on whether CSR similarity based on Strengths or Concerns increases the chances of an M&A deal occurrence.

Table 2: Mergers Pairs and CSR Similarities

Table 2 reports the results from conditional logit regressions of the likelihood of an observation being an actual (as opposed to hypothetical) merger on the corporate social responsibility (CSR) similarity based on *Strength* or *Concern* of the acquiror-target pair and other control variables. The dependent variable is a binary variable that takes the value of 1 if the observation is an actual merger deal, as defined in Table 1. This variable takes the value of 0 if the observation is a pseudo-firm pair in the control group. As cited in Bereskin (2018), following Bena and Li (2014), the sample contains, for each actual deal, pseudo-deals formed by pairing the actual acquiror with up to five hypothetical matches (in the same industry and closest in total assets and book-to-market (BTM) ratio, to the deal's actual target firm) and by pairing the actual target firm with up to five hypothetical matches (in the same industry and closest in total assets and BTM ratio, to the deal's actual acquiring firm). The sample period is from 1994 to 2019. The acquiror and target controls are BOOK_TO_MARKET, ROA, SALES_GROWTH, and CASH, with BOOK_TO_MARKET being excluded as it is used to match the control sample. See Appendix B for more detailed variable descriptions. Constant terms are estimated but not reported. t-statistics (based on standard errors clustered at the actual deal level) are reported in parentheses. All specifications include deal-fixed effects. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Constant terms are estimated but not reported. All these variables are inspired by Bereskin et al. (2018).

	Dependent variable: **ACTUAL DEAL**	
	Model 1	Model 2
	(1)	(2)
CSR_SIMILARITY_Concern	0.8203***	
	(0.2909)	
CSR_SIMILARITY_Strength		0.8063**
		(0.3402)
SAME_INDUSTRY	2.5147***	2.4973***
	(0.2506)	(0.2466)
Acquiror_ROA	3.4037***	3.2881***
	(0.8631)	(0.8553)
Acquiror_SALES_GROWTH	-0.0018	-0.0019
	(0.0015)	(0.0014)
Acquiror_CASH	0.9461	1.0824*
	(0.6156)	(0.6019)
Target_ROA	0.4811	0.5014
	(1.0430)	(1.0502)
Target_SALES_GROWTH	-0.0004	-0.0004
	(0.0007)	(0.0006)
Target_CASH	-1.1822*	-1.1372*
	(0.6285)	(0.6252)
Deal Fixed Effect	Yes	Yes
Observations	1,883	1,883
Log Likelihood	-716.2045	-717.3029
Akaike Inf. Crit.	2,198.4090	2,200.6060
Note:		*p<0.1; **p<0.05; ***p<0.01

Figure 1: Odds Ratios Comparison of Mergers Likelihood

Sources: SDC, COMPUSTAT and KLD

Interpretation of the results

In Model 1 of Table 2, the coefficient for CSR_SIMILARITY_Concern is 0.8203 and is significant at the 0.01 level. This indicates that there is a positive relationship between the similarity of CSR concerns of the acquiring and target firms and the likelihood of M&As. Also, CSR_SIMILARITY_Strength in Model 2 has a coefficient of 0.8063, which is significant at the 0.05 level. This means that the similarity in CSR strengths also increases the likelihood of M&As.

Figure 1 presents the odds of getting an actual M&A deal pair, considering CSR_SIMILARITY_Concern and CSR_SIMILARITY_Strength, the main variables from Model 1 and 2, respectively. The results suggest that holding all else constant, a 0.1-unit increase in CSR_SIMILARITY_Concern is associated with an 8.6% increase in the odds of getting an actual M&A deal pair, and a 0.1-unit increase in CSR_SIMILARITY_Strength is associated with an

8.4% increase in the odds of getting an actual M&A deal pair. Indeed, small changes in these variables still have a meaningful positive effect on the probability of getting an actual deal pair.

The positive coefficient means that firms that have similar CSR concerns and CSR strengths may have better value and risk management alignment, which can improve their negotiation and increase the chances of successful merger. The significance of both CSR similarity measures indicates that firms are not only driven by financial metrics, but also by the opportunity to capture synergies from CSR convergence. This could potentially increase stakeholder trust after the merger, thus giving the merged company a competitive advantage in the market. This finding is consistent with the argument that common issues can lead to a more cohesive integration process post-acquisition since both parties are likely to be more cognizant of each other's operational and ethical systems.

The control variables in both models also offer important insights. The variable SAME_INDUSTRY has a very high positive coefficient of 2.5147 in Model 1 and 2.4973 in Model 2, which means that firms within the same industry are more likely to engage in M&As. The Acquiror_ROA variable also has a large positive effect, with coefficients of 3.4037 and 3.2881 in Models 1 and 2, respectively. This could mean that acquirors with higher return on assets are likely to engage in M&As, possibly because they have more financial strength and are confident in their management efficiency.

However, the Target_CASH variable has a statistically significant negative coefficient of –1.1822 in Model 1 and –1.1372 in Model 2 at the 0.1 level. This result could indicate that targets with more cash are less likely to be acquired, which may be due to inefficiencies or higher costs of negotiation.

Implications

Overall, the results from both regression models provide strong evidence that CSR similarity, in terms of concerns and strengths, is an important factor in the incidence of M&As. The fact that these variables are significant in all the models underscores the role of CSR congruence in strategic management. Also, the control variables support the idea that financial performance and industry are key factors that affect M&As. These findings enrich the existing literature on corporate strategy and CSR, indicating that firms should consider CSR alignment as a strategic asset in their M&A strategies.

2. CSR Similarity and Cumulative Abnormal Returns (CAR)

Table 3 presents the results of two regression models that have been used to test the hypothesis on whether CSR similarity based on Strengths or Concerns leads to an increase in Cumulative Abnormal Returns (CAR) during the period surrounding the M&A announcement.

Table 3: Combined Cumulative Announcement Returns

Table 3 reports cumulative abnormal returns (CARs) around merger announcements for the 546 actual deals from our sample. The dependent variable is CAR, the 7-day cumulative abnormal announcement return for a value-weighted portfolio of the acquiror and the target centered on the deal announcement date. The sample period is from 1994 to 2019. In Panel A, we report the mean and median of CARs for all mergers in the sample and mean CARs of mergers in the top quartile (high similarity) and the bottom quartile (low similarity) of CSR_SIMILARITY_Strength and CSR_SIMILARITY_Concern. In Panel B, we estimate ordinary least squares (OLS) regressions with the weighted average combined CARs of the acquiror and the target as the dependent variable, and with CSR_SIMILARITY_Strength, CSR_SIMILARITY_Concern and other control variables as independent variables. Acquiror_SIZE is the natural logarithm of the book value of the acquiror's total assets; MARKET_TO_BOOK, ROA and CASH are the acquiror's characteristic variables. Detailed descriptions of the variables are in Appendix B. In models 4 and 5 of Panel B, we show results using HIGH/LOW_SIMILARITY_Strength and HIGH/LOW_SIMILARITY_Concern as main independent variables instead. In Panel B, constant terms are estimated but not reported and robust standard errors clustered by 2-digit Standard Industrial Classification (SIC) group are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. All these variables are inspired by Bereskin et al. (2018).

Panel A. Combined Acquirer and Target CARs

	All		High Similarity Strength	Low Similarity Strength	Difference Strength
	Mean	Median	Mean	Mean	Mean
CARs (-3, +3)	0.0296	0.0130	0.0277	0.0303	-0.0027

	All		High Similarity Concern	Low Similarity Concern	Difference Concern
	Mean	Median	Mean	Mean	Mean
CARs (-3, +3)	0.0296	0.0130	0.0425 *	0.0257 *	0.0168 *

Panel B. Regressions with Combined Acquiror and Target CARs

	Dependent variable: **CARs**			
	Model 1 (1)	Model 2 (2)	Model 3 (3)	Model 4 (4)
CSR_SIMILARITY_Strength	0.0163			
	(0.0182)			
CSR_SIMILARITY_Concern		0.0184		
		(0.0218)		
HIGH_SIMILARITY_Strength			0.0079	
			(0.0186)	
LOW_SIMILARITY_Strength			-0.0048	
			(0.0156)	
HIGH_SIMILARITY_Concern				0.0136
				(0.0164)
LOW_SIMILARITY_Concern				0.0036
				(0.0088)
SERIAL_ACQUIROR_INDICATOR	0.0142*	0.0153*	0.0139*	0.0149*
	(0.0078)	(0.0083)	(0.0078)	(0.0082)
SAME_STATE	-0.0016	-0.0024	-0.0019	-0.0018
	(0.0084)	(0.0089)	(0.0085)	(0.0087)
SAME_INDUSTRY	0.0051	0.0047	0.0049	0.0056
	(0.0103)	(0.0103)	(0.0103)	(0.0102)
HIGH_TECH_INDICATOR	-0.0023	-0.0002	-0.0024	-0.0006
	(0.0147)	(0.0144)	(0.0146)	(0.0145)
ALL_CASH	0.0152	0.0155*	0.0155	0.0151
	(0.0095)	(0.0094)	(0.0095)	(0.0094)
TENDER_OFFER	-0.0078	-0.0068	-0.0073	-0.0071
	(0.0099)	(0.0097)	(0.0098)	(0.0097)
HORIZONTAL_INDICATOR	0.0291*	0.0293*	0.0287*	0.0298*
	(0.0172)	(0.0170)	(0.0171)	(0.0171)
VERTICAL_INDICATOR	-0.0361	-0.0339	-0.0373	-0.0331
	(0.0282)	(0.0262)	(0.0281)	(0.0268)
REGULATORY_APPROVAL	0.0170*	0.0184*	0.0164*	0.0183*
	(0.0095)	(0.0094)	(0.0096)	(0.0095)
LITIGATION_FLAG	0.0105	0.0125	0.0094	0.0118
	(0.0204)	(0.0210)	(0.0203)	(0.0206)
TARGET_PUBLIC	0.0270	0.0285*	0.0260	0.0322*
	(0.0175)	(0.0173)	(0.0176)	(0.0182)
RELATIVE_SIZE	0.0169**	0.0166**	0.0168**	0.0167**
	(0.0069)	(0.0068)	(0.0069)	(0.0068)
MARKET_SHOCK_3_days	-0.0261	-0.0209	-0.0270	-0.0224
	(0.0203)	(0.0188)	(0.0206)	(0.0192)
POST_2014	-0.0025	-0.0022	-0.0030	-0.0028
	(0.0324)	(0.0324)	(0.0326)	(0.0327)
Acquiror_MARKET_TO_BOOK	0.0004	0.0005	0.0004	0.0004
	(0.0005)	(0.0005)	(0.0005)	(0.0005)
Acquiror_ROA	0.0437	0.0379	0.0467	0.0407
	(0.0561)	(0.0590)	(0.0555)	(0.0582)

Acquiror_SIZE	-0.0112***	-0.0109**	-0.0116***	-0.0107**
	(0.0041)	(0.0043)	(0.0041)	(0.0045)
Acquiror_CASH	-0.0247	-0.0253	-0.0267	-0.0253
	(0.0346)	(0.0340)	(0.0342)	(0.0339)
Year Fixed Effect	Yes	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes	Yes
Observations	546	546	546	546
R2	0.2255	0.2270	0.2263	0.2257
Adjusted R2	0.0703	0.0720	0.0692	0.0685
Residual Std. Error	0.0849 (df = 454)	0.0848 (df = 454)	0.0849 (df = 453)	0.0850 (df = 453)
F Statistic	1.4527*** (df = 91; 454)	1.4649*** (df = 91; 454)	1.4403*** (df = 92; 453)	1.4356*** (df = 92; 453)
Note:				*p<0.1; **p<0.05; ***p<0.01

Interpretation of the results

In Panel A of Table 3, we examine the mean announcement window CARs for mergers between firms with high CSR SIMILARITY in the top 25th percentile (High Similarity) and the bottom 25th percentile (Low Similarity) for both dimensions (*Strength* and *Concern*) within our sample. The combined CARs present statistically significant positive means only for the High/Low-similarity Concern groups at 4.25% and 2.57% respectively. The statistical analysis shows that High Similarity Concern groups have a positive mean difference of 1.68% compared to Low Similarity Concern groups. The result indicates that market gains during the short-term period become more substantial when merging companies share similar negative social impact CSR policies.

The analysis of the regression results in Panel B of Table 3 is on the effect of both types of CSR similarities on the combined cumulative abnormal returns (CARs) of acquirors and targets in M&A transactions. The models include our two main CSR similarity variables: the strength and concern dimensions, their top and bottom 25% percentiles and other control variables.

In Model 1, the variable CSR_SIMILARITY_Strength has a coefficient of 0.0163, but it is not statistically significant. This means that although there is a positive relationship between CSR similarity in terms of strength and CARs, there is not enough evidence to make any conclusion. In Model 2, CSR_SIMILARITY_Concern also has a non-statistically significant positive

coefficient of 0.0184. Then, neither the strength dimension nor the concern dimension of CSR similarity has a significant impact on CARs.

In addition, we have Models 3 and 4, which make a distinction between high and low CSR similarities. The results suggest that neither HIGH_SIMILARITY in terms of Strength and Concern, nor LOW_SIMILARITY in terms of Strength and Concern has a reliable impact on CARs, as none of these coefficients is statistically significant.

Other control variables in the models give further information. The SERIAL_ACQUIROR_INDICATOR variable has a positive and significant coefficient in all the models, which means that prior acquirors get higher CARs. RELATIVE_SIZE and REGULATORY_APPROVAL also have positive and significant coefficients.

This indicates that stock investors view serial acquirors as more efficient or knowledgeable, which leads to better stock performance during merger announcement periods. There is also a positive relationship with short-term market performance when the deal value is large relative to the acquiror's market value, and when there is anticipated regulatory approval that increases investor confidence.

Implications

In conclusion, although the CSR similarities focused on Strength and Concern are quite interesting in terms of the potential effects on CARs, the fact that their coefficients are not statistically significant means that more research is required to better understand how the type of CSR similarity affects market reactions in M&As. Then the results do not support Hypothesis 2.

3. CSR Similarity and Post-Merger Performance

Table 4 presents the results of regression models that have been used to test the hypothesis on whether both CSR similarity Strength and Concern positively impact post-merger operating performance.

Table 4: Matching Adjusted Long-term operating performance

Table 4 reports the results of ordinary least squares (OLS) regressions explaining the impact of matching adjusted post-merger operating performance, as in Dutta et al. (2013). Our dependent variable here is Matching adjusted post average cash flow to total asset (*post_adjusted_cf*). *Post_adjusted_cf* is defined as the three-year post-acquisition average (year +1, +2 and +3) of the average difference in the operating performance (cash flow to total asset) between the acquiring firm and the matching firm for a given year relative to the acquisition year (Dutta et al., 2013). Each matching firm was selected based on the nearest propensity score with respect to firm size and market-to-book value. Matching adjusted pre-average cash flow to total asset (pre_adjusted_cf) is the three-year pre-acquisition average (year−1,−2 and −3) of the average difference in the operating performance (cash flow to total asset) between the acquiring firm and the matching firm for a given year relative to the acquisition year (Dutta et al., 2013). In case of multiple acquisitions by a firm in any year, only one event was considered in the analysis (Dutta et al., 2013). Other explanatory variables are defined in our Appendix B. In Panel A of Table 4, the regressions are estimated separately for a basic model without CSR similarity measures, a model with CSR_SIMILARITY_Concern as the main independent variable of interest and another model with CSR_SIMILARITY_Strength as the main independent variable of interest. In Panel B of Table 4, we added the interaction terms between MARKET_SHOCK and both CSR_SIMILARITY measures to gauge how market shocks impact the post-merger performance of merged firms with *Strength* similarities and firms with *Concern* similarities. Robust standards are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Regressions with CSR_SIMILARITIES

	Dependent variable: **post_adjusted_cf**		
	Basic Model (1)	CSR Concern Model (2)	CSR Strength Model (3)
pre_adjusted_cf	0.4245***	0.4196***	0.4209***
	(0.0420)	(0.0395)	(0.0399)
CSR_SIMILARITY_Concern		0.0419**	
		(0.0208)	
CSR_SIMILARITY_Strength			0.0245
			(0.0260)
SERIAL_ACQUIRER_INDICATOR		0.0038	0.0005
		(0.0139)	(0.0142)
SAME_INDUSTRY		0.0346*	0.0313*
		(0.0194)	(0.0189)
SAME_STATE		-0.0159	-0.0151
		(0.0177)	(0.0179)
HIGH_TECH_INDICATOR		0.0296	0.0299
		(0.0181)	(0.0182)
POST_2014		0.0271**	0.0187
		(0.0138)	(0.0142)
HORIZONTAL		-0.0199	-0.0254
		(0.0161)	(0.0159)
RELATIVE_SIZE		-0.0148	-0.0091
		(0.0175)	(0.0179)
Constant	-0.0084	-0.0516**	-0.0446**
	(0.0055)	(0.0224)	(0.0218)
Year Fixed Effect	Yes	Yes	Yes
Observations	313	313	313
R2	0.6818	0.6986	0.6951
Adjusted R2	0.6553	0.6642	0.6602
Residual Std. Error	0.0987 (df = 288)	0.0974 (df = 280)	0.0980 (df = 280)
F Statistic	25.7155*** (df = 24; 288)	20.2839*** (df = 32; 280)	19.9440*** (df = 32; 280)
Note:			*p<0.1; **p<0.05; ***p<0.01

Panel B. Regressions with interaction terms between MARCKET_SHOCK and CSR_SIMILARITIES

	Dependent variable: **post_adjusted_cf**		
	Basic Model (1)	CSR Concern Model (2)	CSR Strength Model (3)
pre_adjusted_cf	0.4245***	0.4224***	0.4262***
	(0.0420)	(0.0397)	(0.0401)
CSR_SIMILARITY_Concern		0.0311	
		(0.0236)	
SHOCK_CSR_Concern		0.0301	
		(0.0476)	
CSR_SIMILARITY_Strength			0.0462
			(0.0323)
SHOCK_CSR_Strength			-0.0991**
			(0.0504)
MARKET_SHOCK		0.0182	0.0501**
		(0.0195)	(0.0195)
SERIAL_ACQUIROR_INDICATOR		0.0050	0.0036
		(0.0142)	(0.0144)
SAME_INDUSTRY		0.0334*	0.0290
		(0.0199)	(0.0192)
SAME_STATE		-0.0151	-0.0116
		(0.0188)	(0.0185)
HIGH_TECH_INDICATOR		0.0299	0.0304
		(0.0186)	(0.0188)
POST_2014		0.0304*	0.0199
		(0.0158)	(0.0162)
HORIZONTAL		-0.0221	-0.0246
		(0.0179)	(0.0174)
VERTICAL		-0.0244	-0.0215
		(0.0263)	(0.0235)
TARGET_PUBLIC		0.0233	0.0270
		(0.0347)	(0.0336)
RELATIVE_SIZE		-0.0136	-0.0091
		(0.0181)	(0.0185)
Constant	-0.0084	-0.0708	-0.0728*
	(0.0055)	(0.0443)	(0.0436)
Year Fixed Effect	Yes	Yes	Yes
Observations	313	313	313
R2	0.6818	0.7030	0.7040
Adjusted R2	0.6553	0.6643	0.6653
Residual Std. Error	0.0987 (df = 288)	0.0974 (df = 276)	0.0973 (df = 276)
F Statistic	25.7155*** (df = 24; 288)	18.1494*** (df = 36; 276)	18.2302*** (df = 36; 276)
Note:			*p<0.1; **p<0.05; ***p<0.01

Interpretation of the results

The analysis presented in Panel A of Table 4 uses two regression models to study how CSR similarity focused *Strength* or *Concern* affects post-merger operating performance through the

dependent variable *post_adjusted_cf*. The research includes three models: Basic Model and two specialized models that analyze CSR Concern and CSR Strength.

The CSR Concern Model shows the CSR_SIMILARITY_Concern variable to have a statistically significant positive coefficient of 0.042 at the 5% level, which indicates that higher similarity in terms of CSR concerns leads to better post-merger performance. In other words, a one standard deviation increase in CSR_SIMILARITY_Concern increases *post-adjusted_cf* by 0.0154 unit. The results confirm that CSR_SIMILARITY_Concern has a positive effect on operational results after mergers. However, the CSR Strength Model shows that CSR_SIMILARITY_Strength fails to produce a statistically relevant coefficient. There is no evidence to support a direct positive association between CSR_SIMILARITY_Strength and matching adjusted operating performance.

The post-merger performance models demonstrate strong predictive capabilities because they explain a large portion of variance according to their adjusted R^2 values with the CSR Concern Model reaching 0.6986 and the CSR Strength Model reaching 0.6951.

The analysis of the regression results presented in Panel B is based on the interaction between market shocks and corporate social responsibility (CSR) similarities, focusing on the variables SHOCK_CSR_Concern and SHOCK_CSR_Strength. The dependent variable in this analysis is post-adjusted cash flow (*post_adjusted_cf*), which is an important operational performance measure after market shocks.

The results of Panel B of Table 4 are presented in three models: the Basic Model, the CSR Concern Model, and the CSR Strength Model. All the models include the variable *pre_adjusted_cf*

which has a positive and significant relationship with post-adjusted cash flow in all the models, which means that cash flow levels before the shock are a key determinant of cash flow after the shock. The coefficients for *pre_adjusted_cf* are approximately 0.4245, 0.4224, and 0.4262, all of which are statistically significant at 1 percent level, which means that firms with higher pre-adjusted cash flows are likely to either keep or increase their cash flows after the market shock.

In the CSR Concern Model, the coefficient for the variable SHOCK_CSR_Concern is 0.0301, but it is not statistically significant. Therefore, the evidence is not strong enough to make any firm conclusions. On the other hand, the CSR Strength Model shows more conclusive results. The SHOCK_CSR_Strength variable has a negative coefficient of -0.0991 which is significant at 5 percent level. In other words, a one standard deviation increase in SHOCK_CSR_Strength decreases *post-adjusted_cf* by −0.0883 unit. This finding means that market shocks have a negative effect on the operating performance of firms with CSR similarities based on positive social impacts.

In their research, Albuquerque et al. (2019) discussed how CSR investments influence firm risk profiles and found that firms with heavy CSR commitments find it harder to divert funds quickly to operational necessities when market shocks emerge. Therefore, this could imply that firms sharing similar positive CSR investments are likely to suffer more during economic downturns. Also, long-term CSR investments typically involve fixed commitments, which could reduce a firm's disposable resources in turbulent times, thereby adversely affecting the operating performance.

Other researchers like Wang, Lu and Liu in their research paper entitled "*Corporate social responsibility overinvestment in mergers and acquisitions*" found that the strategic pursuit of CSR

alignment in M&A often results in higher acquisition premiums because of anticipated synergies. However, if market conditions deteriorate, these premiums might not translate into expected cash flow improvements, thereby dampening the post-acquisition operating performance (Wang et al., 2021).

We could also explore some behavioural theories to explain why firms with strong CSR strengths experience negative effects on their operating performance during economic downturn events. First, the "Overconfidence" behavioural bias may cause firms to overinvest or misallocate their resources because of their strong CSR identity. Managerial overconfidence leads employees to ignore required operational efficiencies. Then, Tziner & Persoff studied how organizations exhibit "Moral licensing" behavior at the organizational level when they maintain strong positive CSR records (2024). Organizations that perform good deeds through positive CSR initiatives obtain a "license" to behave unethically or inefficiently in other areas according to the phenomenon of "Moral licensing" (Tziner & Persoff, 2024).

Therefore, the poor performance of firms focused on CSR strengths similarity during economic and financial shock events, as shown in the Panel B Table 4 results, might be attributable to behavioural biases at the managerial level.

Implications

The results from Panel A of Table 3 provide compelling evidence that only CSR_SIMILARITY_Concern positively impact post-merger operating performance. The strong significance of CSR Concern highlights its impactful role in merger success. The findings also imply that organizations should consider external market conditions and industry-related targets

as important factors influencing post-merger performance. Overall, these insights contribute to the broader literature on mergers and acquisitions, emphasizing the importance of CSR in strategic decision-making. Future research could explore the mechanisms through which CSR similarity influences operational performance, potentially offering deeper insights into the strategic integration of CSR practices in mergers.

All in all, the regression results of Panel B show the impact of the interaction between market shocks and CSR similarities. Firms with CSR similarities based on negative social impacts (CSR Concern) do not experience a significant change in cash flow post-shock, whereas firms with positive social impact CSR similarities (CSR Strength) are negatively affected by market shocks. This implies that the operational strategies that are in line with the positive social impact policies may offer worse cash flow performance in the adverse market conditions and may need more effective frameworks to cope with such shocks, as opposed to the negative CSR strategies. The results highlight the need to take into consideration the type of CSR policies when assessing the effects of CSR on financial performance of firms in crisis.

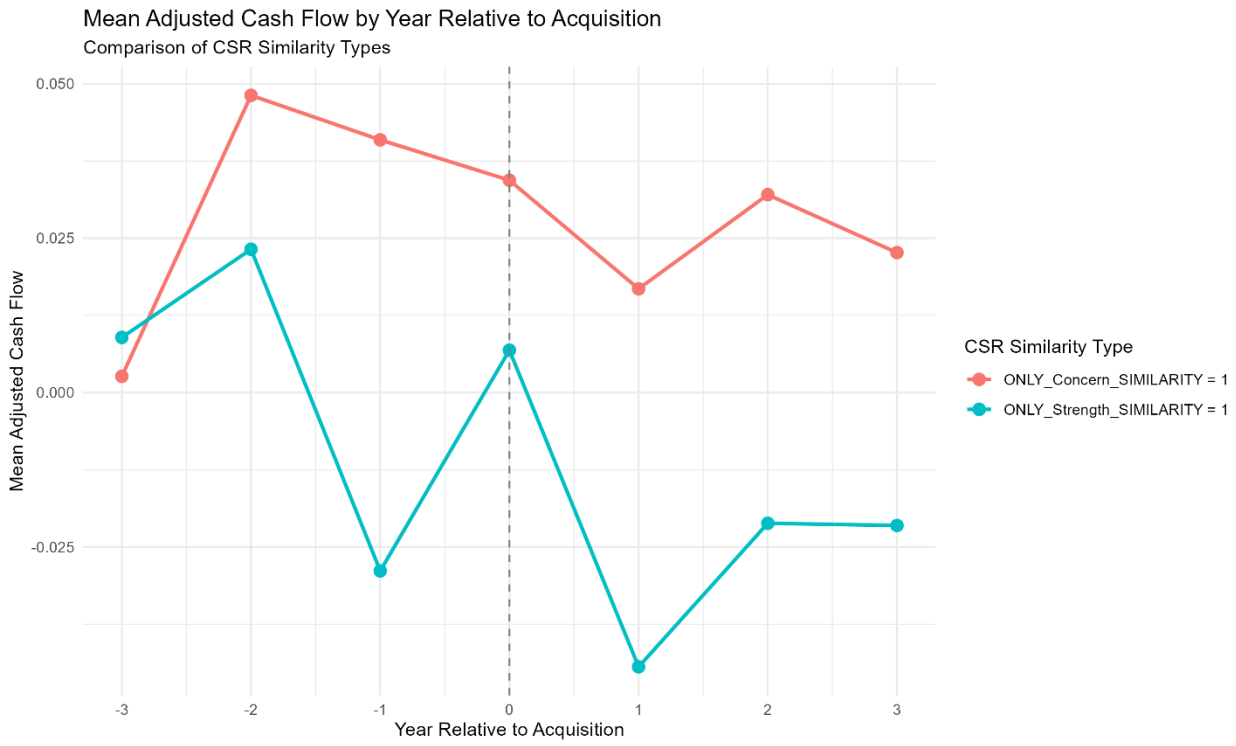
The MARKET_SHOCK variable with its significant positive coefficients in Panel A and B of Table 4 also contributes to understanding post-merger performance. A fair explanation of the positive impact could be that companies performing mergers when economic and financial market conditions are unstable typically have strong strategic planning, which enables them to seize opportunities from decreased valuations, market competition and distressed target companies.

Capron, Guillén and Very also mentioned in their 2024 article on "*How Economic Shocks Affect Merger Outcomes*" that there could be some evidence that macroeconomic shocks like recessions and COVID-19 can influence the success of mergers and acquisitions (2024). They

stated in their article that: “unexpected macroeconomic shocks exert considerable pressure on firms and their leadership to identify innovative strategies for maintaining operational continuity and financial viability. In response to such disruptions, mergers and acquisitions often emerge as strategic mechanisms through which firms seek to navigate periods of heightened economic uncertainty and instability” (Capron et al., 2024).

Also, the famous Value Investing approach of Warren Buffett supports this behavior because strategic firms tend to acquire undervalued targets during market overreactions to achieve better synergies.

Figure 2: Mean Adjusted Cash Flow by year and Similarity Type



Sources: SDC, COMPUSTAT and KLD

The graph in Figure 2 shows two lines of acquiring firms with different CSR Similarities. The red line is the acquiring firms with only CSR similarities in negative social impact policies

(*Concerns*), and the blue line is the acquiring firms with only CSR similarities in positive social impact policies (*Strengths*). Before year zero (M&A announcement year), the red line shows an increasing trend of cash flow adjustments, which means the acquiring firms with CSR similarities in negative social impact policies are improving their operation conditions and making their firms more profitable, and they are working on operations which make their firms efficient and save money.

In contrast, the blue line is more volatile prior to M&A, which suggests that firms with CSR commonality in positive social influence are more volatile in their operations, often investing in costly sustainable projects. Thus, they are likely to find it more troublesome to smoothly combine their operations. They are also prone to face problems concerning philosophy integration; therefore, there are more chances to face difficulties in merging their operations. The blue line plunges around year zero, which suggests that the announcement of M&A creates a huge disruption in their operations, so this is likely due to factors such as disruptions in workflow or shifts in management focus. Both lines dip one year after the M&A, which suggests that both types of firms suffer disruption in their operations one year after the M&A, as this might be due to factors such as the difficulty in combining different philosophies for social responsibility or the difficulty in integrating operations.

The red line maintains its upward trajectory during the recovery phase, which starts after year zero. Acquiring firms that match their negative social impact policies demonstrate successful integration because they share operational frameworks that make the process more efficient. The ability of firms to leverage their established operational frameworks and streamlined processes results in better collaboration and enhanced operational efficiency as shown by the resilient red line. Acquiring firms with positive social impact policy similarities experience volatility in their

performance but their operations start to stabilize after year zero while they work on CSR integration with their target firm.

The negative social impact policy similarities show better performance than positive social impact policy similarities because they provide operational efficiency through practice alignment and cost-driven streamlined frameworks that make integration easier in the first three years. These negative practices generate long-term operational issues because they lead to both high employee departure rates and regulatory penalties (ZCU, 2024). The integration process becomes more straightforward for firms with negative CSR similarities because they share comparable problems and solutions in their operations. The initial financial investment for positive CSR implementation creates difficulties for firms with positive CSR similarities since they need to establish sustainable technology and fair labor practice systems thus delaying their recovery process. The organizational performance implications of CSR policies become more crucial during M&A transactions because operational compatibility emerges as a vital factor.

Several research studies support the notion that negative policies generate financial benefits from cost reduction but the eventual risks to legal challenges and brand reputation could produce results that diminish these short-term advantages (Musa, 2024).

VII. Conclusion

Our research has investigated the complex connection between cultural similarities, particularly through the lens of Corporate Social Responsibility (CSR), and the results of mergers and acquisitions (M&As). This study has expanded on the work of Bereskin et al. (2018) by

investigating how different CSR similarity dimensions (Strengths and Concerns) affect M&A occurrence rates, cumulative abnormal returns (CAR), and post-merger operating performance.

The research shows that CSR Similarity Strength and CSR Similarity Concern both increase the chances of successful M&A deals. The alignment between CSR practices enables better negotiation processes while building essential stakeholder trust that leads to enduring success for merged organizations. After the analysis of CARs, our results suggest that there is not enough evidence to show that either CSR Similarity Strength or CSR Similarity Concern create significant effects on market reactions during short-term periods. Then, our research demonstrated that operational outcomes after mergers improve faster when companies share similar CSR concerns. Indeed, cultural compatibility plays an essential role in achieving successful post-acquisition synergies. On the other hand, CSR Similarity Strength failed to produce significant effects on long-term performance which suggests that positive CSR alignment in this case may operate more complexly than expected.

In response to the evaluators' feedback. A more granular analysis of the High- and Low-CSR similarity samples was not conducted, because the KLD database would further reduce the available sample sizes. This limitation suggests that future research could benefit from alternative CSR databases to enable more detailed investigations.

The research findings present practical value for practitioners together with policymakers beyond academic discussions. Organizations that understand cultural alignment through CSR practices are prone to develop better strategies for M&A activities. Future studies need to investigate the diverse aspects of CSR and their effects on M&A success while examining different market environments and cultural settings.

Appendix A. Financial Shock Events

Event Date	Event Title	Country
1994-12-01	Mexican Peso Crisis	Mexico
1997-07-01	Asian Financial Crisis	Multiple Asian countries (Thailand, Indonesia, South Korea, Malaysia, Philippines)
1998-08-01	Russian Financial Crisis	Russia
1999-11-01	Partial Repeal of Glass-Steagall	United States
2000-03-01	Dot-Com Bubble Burst	United States
2001-01-01	Federal Reserve's Interest Rate Cuts (Dot Com Aftermath)	United States
2001-09-11	Terrorist Attacks on the U.S.	United States
2001-12-01	Argentine Great Depression (Key Phase)	Argentina
2007-02-01	U.S. Housing Bubble Begins to Burst	United States
2007-04-01	Subprime Bankruptcies Proliferate	United States
2007-08-01	Global Liquidity Crisis Triggered by Subprime Woes	United States (global impact)
2007-09-01	Fed Slashes Rates as Market Peaks	United States
2008-03-14	Fire Sale of Bear Stearns	United States
2008-09-07	Government Nationalizes Fannie Mae and Freddie Mac	United States
2008-09-15	Lehman Brothers Bankruptcy	United States
2008-09-16	Fed Bails Out AIG	United States
2008-09-19	Launch of TARP (Troubled Asset Relief Program)	United States
2008-09-25	Wave of Bank Failures	United States
2008-10-10	Dow Records Worst Week; Fed Steps In	United States
2010-05-01	European Sovereign Debt Crisis	Multiple European countries (Greece, Ireland, Portugal, Spain, Italy)
2011-09-01	Occupy Wall Street Protests Begin	United States
2012-12-01	Venezuelan Economic Crisis (Starting)	Venezuela
2013-03-01	Cypriot Financial Crisis	Cyprus
2015-07-01	Chinese Stock Market Turbulence	China
2017-05-01	House Passes Dodd Frank Repeal Provisions	United States
2018-08-01	Turkish Economic Crisis	Turkey
2018-10-01	Trump Signs Dodd Frank Reform Bill	United States

Sources: Investopedia (Mexican Peso Crisis, Dot-Com Bubble, Housing Bubble), IMF (Asian Financial Crisis), Investopedia (Russian Financial Crisis), Brookings Institution (Glass-Steagall Act, Dodd-Frank Act), Federal Reserve History (Interest Rate Cuts, Financial Crisis), National September 11 Memorial & Museum (9/11 Attacks), Council on Foreign Relations (Argentina's Economic Crisis, Venezuela's Economic Crisis), BBC News (China Stock Market Crash), The Economist (Turkey's Economic Crisis).

Appendix B. Variables Definition

Following Bereskin et al. (2018, p.2034-2036).

ABNORMAL ROA	The firm's ROA is minus the corresponding median industry ROA, where the industry is defined using Standard Industrial Classification (SIC) as a 2-digit industry.
ACQUIROR CONTROLS	Acquiror firm's characteristics such as (BOOK_TO_MARKET ratios, ROA, LEVERAGE, MANAGERIAL_ABILITY, SALES_GROWTH, CASH, RD_TO_ASSETS or R&D intensity, and ADJUSTED CSR).
ACTUAL DEAL	An indicator variable that is equal to 1 if the pair of acquiror firm *i* and target firm *j* is the actual acquiror target in deal *m*, and 0 otherwise.
ADJUSTED CSR	The net difference between the adjusted total CSR strengths and adjusted total CSR concerns for each category as in Deng et al. (2013). The adjusted total CSR strengths and concerns are calculated by scaling the raw strengths and concerns of each category by the number of elements in that category's strength and concerns in the year, then summing all adjusted subcategory scores across all strengths and concerns, respectively.
ALL CASH	Equal to 1 if the deal is financed by cash only, and 0 otherwise.
ASSETS	Book value of the firm's total assets.
BOOK TO MARKET	Calculated as the Book value of equity divided by market value of equity.
CASH	Cash and short-term investments divided by book value of total assets .
CSR SIMILARITY	The Jaffe (1986) distance of the acquiror's and target's CSR policies based on each firm's KLD subcategories over the previous 3 years (*t-2* to *t*): $$\text{CSR\_SIMILARITY}\left(\bar{\mathbf{x}}_A^{(Y)}, \bar{\mathbf{x}}_T^{(Y)}\right) = \frac{\sum_{j-1}^{n} \bar{x}_{A,j}^{(Y)} \bar{x}_{T,j}^{(Y)}}{\sqrt{\sum_{j-1}^{n} \left(\bar{x}_{A,j}^{(Y)}\right)^2} \sqrt{\sum_{j-1}^{n} \left(\bar{x}_{T,j}^{(Y)}\right)^2}}$$ Where vector $\bar{x}_{A,j}^{(Y)}$ is the Acquiror's average score over the 3-year rolling window for subcategory *j* (where, n=1, 2, …, 64 or 71) and vector $\bar{x}_{T,j}^{(Y)}$ is the Target's average score over the 3-year rolling window for subcategory *j*.

DEAL FE	The deal-fixed effect is set to control for unobserved characteristics specific to each transaction.
HIGH SIMILARITY	An indicator variable equal to 1 if the acquiror–target pair is in the top 25% of the CSR SIMILARITY measure, and 0 otherwise.
HIGH TECH	Equal to 1 if the acquiror and the target operate in high-tech industries as defined by Loughran and Ritter (2004), and 0 otherwise.
INDUSTRY FE	The industry-fixed effect is set to control for time-invariant characteristics that are common across firms within the same industry.
LEVERAGE	Book value of debt (sum of current liabilities and long-term debt) divided by book value of total assets.
LITIGATION FLAG	Equal to 1 if either the acquiror or target firm launched litigation as a result of the transaction, and 0 otherwise.
LOW SIMILARITY	An indicator variable equal to 1 if the acquiror–target pair is in the bottom 25% of the CSR SIMILARITY measure, and 0 otherwise.
MARKET_ SHOCKS	Equal to 1 if the announcement date is within the critical shock event window (3 months), and 0 otherwise.
PAIR CONTROLS	Deal pair characteristics such as (SAME INDUSTRY, SAME STATE, RELATIVE SIZE, ALL CASH, TENDER OFFER and HIGH-TECH indicators).
RD TO ASSETS	R&D expenditure divided by the book value of total assets.
REGULATORY APPROVAL	Equal to 1 if deals are required to be approved by Regulatory Agencies, and 0 otherwise.
RELATIVE SIZE	Deal value divided by market capitalization of the acquiror.
ROA	EBITDA divided by book value of total assets.
SAME INDUSTRY	Equal to 1 if the acquiror and the target firm operate in the same 2-digit SIC industries, and 0 otherwise.
SAME STATE	Equal to 1 if the acquiror and the target firm are incorporated in the same state, and 0 otherwise.
SERIAL ACQUIROR	Equal to 1 if the firm is an acquiror at least five times within the prior 3 years, and 0 otherwise.
SIZE	Natural logarithm of the book value of the firm's total assets.

STOCK PRICE REACTION (1week)	The change in the acquiror's stock price 1 week after the announcement date.
TARGET CONTROLS	Target firm's characteristics such as (BOOK_TO_MARKET ratios, ROA, LEVERAGE, MANAGERIAL_ABILITY, SALES_GROWTH, CASH, RD_TO_ASSETS or R&D intensity, and ADJUSTED CSR).
TENDER OFFER	Equal to 1 if the merger is a tender offer, and 0 otherwise.
YEAR FE	The year-fixed effect to control for unobserved factors that vary across time but are constant across entities.

Sources: Securities Data Company (SDC), KLD, COMPUSTAT, Center for Research in Security Prices (CRSP) and Bereskin et al., (2018).

Appendix C. KLD Subcategories

Here are the KLD CSR subcategories (Strengths and Concerns) used in our research:

Categories	Strengths	Concerns
Community	Charitable giving, Innovative giving, Support for housing, Support for education, Non-U.S. charitable giving, Volunteer programs, Community engagement, Other strengths	Investment controversies, Negative economic impact, Tax disputes, Community other concerns
Corporate Governance	Limited compensation, Ownership strength, Transparency strength, Political accountability strength, Public policy strength, Corruption and political instability, Financial system instability, Corporate governance other strength	High compensation, Ownership concern, Accounting concern, Transparency concern, Political accountability concern, Public policy concern, Governance structures controversies, Controversial investments, Business ethics, Corporate governance other concerns
Diversity	CEO diversity, Promotion,	Diversity controversies, Non-representation,

	Board of directors gender diversity, Work-life benefits, Women and minority contracting, Employment of the disabled, Gay and lesbian policies, Employment of underrepresented groups, Diversity other strength	Board gender diversity, Board of directors minorities diversity, Diversity other concerns
Employee Relations	Union relations, No-layoff policy, Cash profit sharing, Employee involvement, Retirement benefits strength, Health and safety strength, Supply chain policies, programs, and initiatives, Compensation and benefits, Employee relations, Professional development, Human capital management, Employee strengths other strengths	Union relations concern, Health and safety concern, Workforce reductions, Retirement benefits concern, Supply chain controversies, Child labor, Employee relations other concerns, Controversial sourcing
Environment	Beneficial products and services, Pollution prevention, Recycling, Clean energy, Property, plant, and equipment, Management systems strength, Water stress, Biodiversity and land use, Raw material sourcing, Environment other strength	Hazardous waste, Regulatory problems, Ozone-depleting chemicals, Substantial emissions, Agriculture chemicals, Climate change, Negative impact of products and services, Land use and biodiversity, Non-carbon releases, Supply chain management, Water management, Environment other concerns, Natural resource use, Environmental opportunities: green buildings, Environmental opportunities: renewable energy, Waste management: electronic waste, Climate change: energy efficiency,

		Climate change: product carbon footprint, Climate change: insuring climate change risk
Human Rights	Positive record in South Africa, Indigenous people's relations strength, Labor rights strength, Human rights other strength	South Africa concern, Northern Ireland concern, Burma concern, Mexico concern, Labor rights concern, Indigenous people's relations concern, Operations in Sudan concern, Freedom of expression and censorship, Human rights violations, Human rights other concerns
Product	Quality, R&D innovation, Benefits to economically disadvantaged, Access to capital, Product other strengths	Product safety, Marketing-contracting concern, Antitrust, Customer relations, Product other concerns, Social opportunities: access to communications, Social opportunities: opportunities in nutrition and health, Product safety: chemical safety, Product safety: financial product safety, Product safety: privacy and data security, Product safety: responsible investment, Product safety: insuring health and demographic risk
Tobacco		Tobacco Involvement, Tobacco Other Concern
Alcohol		Alcohol Involvement, Alcohol Other Concern
Gambling		Gambling Involvement, Gambling Other Concern

Military Contracting		Military Involvement, Minor Weapons Contracting, Major Weapons-related Supplier Military Other Concern
Firearms		Firearms Involvement

Source: KLD

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