

# **CSR, Religion, and M&A Premium**

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By

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## **Abstract**

Mergers and acquisitions (M&A) literature has documented that targets' higher corporate social responsibility (CSR) rating leads to a higher premium paid by acquirers. Using a U.S. domestic sample between 1996 and 2014, we examine how this relationship differs between religious and non-religious acquirer managers. We find that the positive association between target CSR and premium is stronger for acquirers headquartered in highly religious counties, and such acquirers pay a lower premium to targets that have more CSR concerns. The results suggest that religious managers, due to their more risk-averse personality, are more conscious with targets' misbehaviors on CSR.

**Key Words:** corporate social responsibility, religion, mergers and acquisitions premium.

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## Chapter 1: Introduction

During the last two decades, corporate social responsibility (CSR) has given rise to vast studies that investigate its role in finance. Meanwhile, the question of how religion affects firm decisions has drawn increasing attention from the behavioral finance area.<sup>1</sup> In this study, we link the two subjects to investigate how they can jointly affect merger and acquisition (M&A) decisions. Specifically, we argue that religious managers, due to their different risk perception, are more conscious with target firms' CSR performance, especially their misbehaviors on CSR.

Previous studies have shown that the M&A premium paid by an acquirer is positively associated with the target's CSR performance (Choi et al., 2015; Gomes & Marsat, 2018; Malik, 2014). One explanation proposed by researchers is that, unlike shareholders who are mainly concerned with systematic risk, acquirers are more risk-averse in M&A because of their less diversified positions, and they are more conscious with targets' CSR, which is associated with the firms' idiosyncratic risks (Godfrey et al., 2009; Jo & Na, 2012; Sharfman & Fernando, 2008). Therefore, acquirers pay a higher premium to high CSR targets for their interests in risk-diversification and a lower premium to low CSR targets for potential risks implied by the CSR ratings. Following this theory, we hypothesize that the positive association between target CSR and M&A premium depends on the acquirer managers' risk perception, in the sense that more risk-averse acquirer managers are more concerned with targets' CSR performance, and thus, they are more likely to pay a higher (lower) premium to high (low) CSR targets. As researchers have found an inverse association between religiosity and risk-taking (Hilary & Hui, 2009), we argue that the positive association between target CSR and premium is more pronounced for the acquirer managers who are religious.

As a firm can be both corporate socially responsible and irresponsible (Strike et al., 2006), we decompose targets' CSR ratings into strengths scores (i.e., the positive aspect of CSR) and concerns scores (i.e., the negative aspect of CSR) to see how their associations with premium differ between religious and non-religious acquirer managers. Since studies have reported that firms headquartered in highly religious counties in the U.S. engage less in positive CSR activities (McGuire et al., 2012) and they tend to pay less M&A premium (Xin, 2014), we argue that for such acquirers, the positive association between target CSR and premium is primarily driven by

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<sup>1</sup> Most of the finance studies on religion are based on the psychological finding that religion increases one's risk aversion and leads to more ethical judgments (Dehejia et al., 2005; Miller & Hoffmann, 1995; Zahn, 1970).

targets' CSR concerns. In other words, while these acquirers do not pay additional premium for targets' CSR strengths, they pay a lower premium for targets' CSR concerns.

Our tests are based on a sample of 467 domestic deals in the U.S. announced between 1996 and 2014. Focusing on M&A in one single country reduces the risk of omitted variables, as in a cross-border scenario we would need to control for too many variables such as national culture, legal systems, and public infrastructure, and might not have enough degree of freedom to conduct a powerful test (Hilary & Hui, 2009). Also, the U.S. sample is advantageous as the level of religious practice in the U.S. is relatively high and the socio-economic development among different regions is similar (Hilary & Hui, 2009). Following previous studies, we use county-level religiosity as a proxy for acquirer managers' religiosity. We collect the M&A data from SDC Platinum, the CSR data from MSCI (formerly KLD and GMI), and the county-level religiosity data from American Religion Data Archive (ARDA).

Since our interest is to see how one effect (i.e., the effect of target CSR on M&A premium) depends on the other effect (i.e., acquirer managers' religiosity), we run OLS regressions to test how the interaction of acquirer managers' religiosity and target CSR rating affects M&A premium. However, the interaction term would lead to severe multicollinearity issue if we simply multiply the two continuous variables together. Therefore, we construct a dummy variable to measure religiosity: we define an acquirer is headquartered in a religious county (or the acquirer managers are religious) if the county-level religiosity falls into the fourth quartile of our sample, and we interact the dummy variable with various measures of target CSR.

Our results show that the positive association between target CSR and M&A premium is stronger for religious acquirer managers, and such managers pay a lower premium to targets that have more CSR concerns. The interaction between targets' net CSR score and the religiosity dummy is positively associated with M&A premium, but neither CSR score nor the religiosity dummy is consistently significant, suggesting that acquirers headquartered in highly religious counties are more sensitive to targets' CSR performance. When decomposing target CSR ratings into strengths scores and concerns scores, we find that the interaction between concerns score and the religiosity dummy is negatively associated with premium but no evidence for strengths score, supporting our argument that religious acquirer managers are more careful with targets' CSR concerns because of the potential risks associated. The results hold after we have controlled for deal characteristics,



firm characteristics, year fixed effect, and industry fixed effect, and they remain robust in several tests, in which we use a different measure of M&A premium and a series of other controls.

Our study makes the following contributions to the literature. First, although many researchers have studied the effect of religion on firm decisions in a direct way (Grullon et al., 2009; Hilary & Hui, 2009; McGuire et al., 2011; McGuire et al., 2012), only a few has investigated how such effect takes place through interacting with other factors such as CSR.<sup>2</sup> Hence, we help to introduce a new area for future studies to explore. Second, our paper belongs to a handful of studies that look into the impact of religion on M&A events (Chen et al., 2017; Chintrakarn et al., 2016; Xin, 2014), and we show that M&A premium is affected by the non-economic factor, which should be incorporated by future studies. Third, our study complements other studies and helps to explain their findings such as acquirers located in more religious areas are less likely to receive a negative announcement return (Chintrakarn et al., 2016) and acquirers located in more religious counties pay less takeover premium (Xin, 2014). Fourth, as a part of the growing literature about religion, we confirm previous findings that religion increases managers' risk aversion and influences firm decisions.

The remainder of this paper is designed as follows. Chapter 2 presents the literature review and our hypotheses. Chapter 3 provides details on the sample and research design. Chapter 4 contains our finding and the results of robustness check. Chapter 5 presents the conclusion.

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<sup>2</sup> As far as we know, only Cui et al. (2017) take a similar approach and find the negative CSR – firm risk association is more pronounced for firms headquartered in more religious counties.

## **Chapter 2: Literature Review and Hypothesis Development**

In this chapter, we review previous studies on the interrelationship among CSR, religion, and M&A, from which we develop our research questions and hypotheses.

### **2.1 CSR and Firm Performance**

The concept of CSR arguably originates from the stakeholder theory, which states that a firm has certain responsibilities to the society, and it should not only pursue the wealth of its shareholders, but also care the benefits of other stakeholders. Based on this theory, CSR refers to a firm's various voluntary initiatives toward its different stakeholders, such as customers, suppliers, regulators, employees, and communities (Malik, 2015).

An immense amount of studies has investigated whether CSR increases firm value, but a debate remains. The benefits of CSR have been well documented in various business literatures. For example, CSR generates trust with consumers and increases profits (Fisman et al., 2006); CSR increases employee commitment (Kim et al., 2010); CSR promotes a better relationship with regulators (Freedman & Stagliano, 1991). Although some scholars argue that the effect of CSR on a firm's performance exists in a contingent manner (Clacher & Hagendorff, 2012; Smith et al., 2010; Wang et al., 2011), the majority of previous research suggests that CSR is positively associated with firm performance (Malik, 2015; Margolis et al., 2009), which is reflected by operating performance measured by return on investment and return on assets and stock market performance measured by stock returns and market to book (Anderson & Frankel, 1980; Cochran & Wood, 1984; Klassen & McLaughlin, 1996; Nehrt, 1996).

CSR also affects firms' idiosyncratic risks. Researchers have reported that CSR activities reduce not only social risks but also operational, financial, and litigation-related risks (Chih et al., 2008; Jo & Na, 2012; Kim et al., 2012; Starks, 2009). A firm's CSR engagement can reduce the probabilities of expected financial, social, or environmental crisis (Sharfman & Fernando, 2008) and generate moral capital or goodwill, which provides "insurance-like" protection (Godfrey et al., 2009),<sup>3</sup> while underinvestment on CSR may expose a firm to more potential risks. Most empirical studies find an inverse association between CSR and firm risk (Jo & Na, 2012).

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<sup>3</sup> Godfrey et al. (2009) show that in an adverse event, shareholders of high CSR firms suffer less because of the goodwill generated by CSR activities.

Consistently, high CSR firms tend to have a lower debt-financing cost (Goss & Roberts, 2011; Ye & Zhang, 2011) and a lower equity-financing cost (Dhaliwal et al., 2011).

Some scholars argue that CSR activities can also bring economic disadvantages to the firms. For example, Griffin and Mahon (1997) show that spending in CSR can negatively affect the firm's performance; Bird and Smucker (2007) find that managers who hold a broader conception of CSR can make decisions that damage the shareholders' benefits; Barnea and Rubin (2010) argue that CSR can induce agency problem as managers may invest CSR for their personal interests. However, regarding the findings of a negative association or no clear association between CSR and firm performance, some researchers suggest that econometric issues and different definitions of CSR are the main reasons (Al-Tuwaijri et al., 2004; McWilliams & Siegel, 2000; Taneja et al., 2011).

## **2.2 The Role of CSR in M&A**

Previous studies have shown that both acquirer CSR and target CSR have a significant impact on M&A events. One group of studies focus on how CSR affects the result of M&A. Aktas et al. (2011) find a positive association between the acquirer's stock performance and the target's CSR rating during the M&A announcement. They also find that acquirer firms improve their CSR performance following the acquisitions of targets with high CSR ratings, suggesting that CSR experience can be transferred through M&A. Deng et al. (2013) compare the performance of high CSR acquirers and that of low CSR acquirers, and find that high CSR acquirers tend to realize higher abnormal returns during the M&A announcement period and positive long-term returns after the M&A, showing that the acquirer's CSR performance is an important determinant of the acquirer's gain from M&A. Choi and Kim (2018) look into how the target's CSR practice gets changed by the acquirer's managers in the post-M&A period, and they find while the acquirer managers tend to maintain the target's superior CSR related to environment and product, they prefer to dismiss the CSR of other dimensions, suggesting that in M&A acquirers pay selective attention to targets' CSR performance.

The other group of studies instead investigate how CSR affects M&A decisions. Hawn (2013) shows that in cross-border transactions an acquirer's positive CSR rating leads to faster deal completion, and thus reduces home country disadvantages. Krishnamurti et al. (2017) find that firms with high CSR ratings participate M&A less frequently, and if they undertake M&A, they

pay less premium on average. They link this finding to the Overconfidence Theory and argue that CEOs' overconfidence leads to less investment in CSR but more in empire-building, which is reflected by the high premium paid to targets. Through examining manufacturing firms' environmental performance, Berchicci et al. (2012) find that high CSR acquirers are more likely to acquire low CSR targets. However, with the data of Australian firms, Krishnamurti et al. (2018) find that high CSR firms are more likely to acquire firms with CSR activities, and they tend to pay less premium. They conclude that high CSR firms make decisions aligned with the shareholders' wealth-maximization objective.

Three studies have explicitly examined how targets' CSR performance affects M&A premium. Using a U.S. domestic M&A sample, Malik (2014) shows that a higher target's CSR rating, which is filed by MSCI (formerly KLD and GMI), is associated with a higher premium paid by the acquirer. Besides, she tests each dimension of CSR separately, and finds that different dimensions are associated with M&A premium differently: environmental performance has the strongest positive association; community and diversity have weakly positive associations; product has no association; employee relationship has a negative association.<sup>4</sup> Additionally, she finds that acquirers' response to targets' CSR concerns is stronger than that of targets' CSR strengths. Also using the MSCI data, Choi et al. (2015) find similar evidence by examining cash-only transactions. They link their finding to the signaling theory and argue that a target's CSR rating sends a signal about the firm's overall quality to the acquirer. With a different CSR measure, Gomes and Marsat (2018) find that while targets' environmental performance is valued by both domestic and foreign acquirers, targets' social performance is only valued by foreign acquirers.

### **2.3 The Impact of Religion on Firm Decisions**

The research on how religion affects corporate decisions is inspired by psychology and sociology studies that analyze the influence of religion on individuals. These works generally suggest that religious belief leads to more ethical judgments as it takes a series of social norms as guidance for one's life (Longenecker et al., 2004; Parboteeah et al., 2008; Zahn, 1970), or that religious individuals tend to have a higher level of risk aversion (Dehejia et al., 2005; Miller & Hoffmann, 1995; Osoba, 2003).

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<sup>4</sup> Malik (2014) summarizes the details on MSCI ESG rating definition (pp. 144 – 159).

Hilary and Hui (2009) firstly extend the study of religion to the area of corporate finance. They find that firms headquartered in more religious counties in the U.S. display less volatility of stock returns and less volatility of returns on asset, and such firms tend to have less investments and less R&D activities. They interpret the result as the evidence that religion increases managers' risk-aversion and reduces firms' risk exposure. Following them, many scholars have examined the impact of religion on firm decisions from different angles.

One group of researchers find further evidence that religion reduces firms' risk-taking. Shu et al. (2012) show that local religiosity affects mutual funds' risk-taking and funds located in high-protestant areas exhibit less return volatility. Gao et al. (2017) find that hedge funds located in more religious counties display less total volatility and less idiosyncratic volatility, and such funds hold less risky stocks and more diversified portfolios. El Ghouli et al. (2012) find that firms located in more religious counties enjoy cheaper equity financing costs, and the effect is larger for firms with lower institutional ownership. Callen and Fang (2015) find that the financial crisis was less severe in areas with high religiosity and firms in those areas tend to have more timely and reliable disclosure of information, which reduces potential legal risks. Using a sample of family firms in China, Jiang et al. (2015) show that firms founded by religious entrepreneurs have lower leverage and less investment compared to those founded by non-religious entrepreneurs. Interestingly, their finding mainly holds for entrepreneurs who adhere to western religions but not eastern religions. Meanwhile, other researchers find that religion also deters unethical corporate behaviors. Grullon et al. (2009) find that firms headquartered in highly religious counties are less likely to backdate options, grant excessive manager compensations, and be the target of class action securities lawsuits. McGuire et al. (2011) report that firms located in more religious areas engage less in financial reporting irregularities and more in real earning management.

Since the data of managers' personal religiosity is not available, one methodology commonly adopted by these studies is using county-level religiosity as a proxy. Hilary and Hui (2009) introduce a ratio of the total number of religious adherents divided by the total population of the county where the firm is headquartered. They argue that because local religiosity affects a firm's organizational culture through the local employees' participation and most of decision-makings take place at the firm's headquarter, naturally the local religiosity would affect the firm's decision-makings to a certain degree. This argument is supported by the sociological finding that local

customs and attitudes have a powerful influence on human behavior (Cialdini & Goldstein, 2004; Kennedy & Lawton, 1998; Sunstein, 1996). Consistent with their assumption, Hilary and Hui (2009) show that CEOs are more likely to join a firm with a similar religious environment as in their previous firm when they switch employers.

Concerning religion's influence on individuals' attitude towards CSR, Brammer et al. (2007) find that religious individuals do not prioritize CSR differently, but they hold a broader conception for CSR than non-religious individuals do. In terms of religion's effect on firms' CSR practices, McGuire et al. (2012) find that firms located in highly religious counties in the U.S. receive lower CSR ratings. In particular, these firms are associated with lower CSR strengths scores, suggesting that such firms engage less in positive CSR activities. Given the result, they argue that religious managers are able to separate their view of personal responsibility from their view of corporate responsibility, and therefore, their belief about CSR is not manifested by the firm decisions. Another explanation they propose is that religious managers might discard some progressive CSR initiatives that conflict with their religious norms, especially on diversity and employee relationship. Consistently, Griffin and Sun (2013) find that firms located in more religious areas have less voluntary CSR disclosure. Furthermore, Cui et al. (2017) document that the inverse association between CSR and firm risk is more pronounced for firms headquartered in religious counties in the U.S., and they argue that managers of firms in religious communities are more committed to CSR.

A growing number of studies have investigated how religion affects M&A. Chintrakarn et al. (2016) show that firms located in more religious areas are less likely to receive a negative market reaction during their M&A announcements, and they argue that religion discourages managers from participating in value-destroying acquisitions. Following them, Chen et al. (2017) investigate how such effect varies with different religious denominations, and they find that progressive religious denominations are associated with higher acquirers' announcement return and larger total synergy, but conservative religious denominations affect neither. Xin (2014) examines how county-level religiosity affects M&A premium and finds that acquirers located in more religious counties pay less premium and they tend to use all-cash offers. The study concludes that as religion discourages risk-takings, managerial opportunistic behaviors, and empire-building tendency,

religious managers pay a lower premium to reduce the likelihood of a negative return from the M&A deal.

## **2.4 Hypothesis Development**

Regarding the positive association between target CSR and premium, in general, there are two explanations. The first one is based on the value-enhancing capacity of CSR. Acquirers pay more to high CSR targets because the target's superior CSR practice can enhance the synergy created through M&A. As such, low CSR acquirers may be willing to pay more to high CSR targets in order to increase their CSR ratings or transfer the CSR experience (Malik, 2014). The second explanation is related to firm risks. Unlike shareholders who are mainly concerned with systematic risk, acquirers are largely concerned with targets' specific risks, as their risk-reduction options are limited and costly but they must assume a large amount of specific risk because of investment concentration and the high costs associated with divestiture of acquired business (Gomes, 2018; Gomes & Marsat, 2018; Malik, 2014). Since CSR is associated with firms' idiosyncratic risks, an acquirer may pay additional premium to a high CSR target for its interest in risk-diversification and a lower premium to a low CSR target for potential risks implied by the target's CSR rating.

Finance literature has documented that firms' decision-makings are affected by managers' risk perception, which comes from not only compensation incentives but also managers' inherent personality (Amihud & Lev, 1981; Cain & McKeon, 2016; May, 1995; Pablo et al., 1996). Linking the second explanation of the positive CSR – M&A premium association to the idea that managers' risk perception is an important determinant of firms' decision-making, we hypothesize that more risk-averse acquirer managers are more sensitive to targets' risks and therefore, they are more likely to pay a higher premium to high CSR targets and a lower premium to low CSR targets. As there is a positive association between religiosity and risk-aversion, we argue that the positive association between target CSR and premium is more pronounced for the acquirer managers who are religious. Using county-level religiosity as a proxy for managers' religiosity, we develop the following hypothesis:

**H1:** The positive association between target CSR and M&A premium is stronger for acquirers headquartered in highly religious counties.

While we argue that the positive association between target CSR and premium is stronger for religious acquirer managers, the reason for this can be either they pay a higher premium for targets' CSR strengths (i.e., the positive aspect of CSR practice) or they pay a lower premium for targets' CSR concerns (i.e., the negative aspect of CSR practice), as a firm's CSR rating can be expressed as following:

$$\text{Net CSR Score} = \text{Strengths Score} - \text{Concerns Score} \quad (2.1)$$

Minor and Morgan (2011) point out that a firm's CSR performance consists two parts, visible "doing good" activities and invisible "not doing harm" activities. A firm can improve its CSR performance by participating either "doing good" activities or "not doing harm" activities. Based on the above equation, "doing good" activities increase the strengths score and "not doing harm" activities decrease the concerns score. Previous studies have showed that a firm can be both socially responsible and irresponsible (Strike et al., 2006), implying that a high strengths score is not necessarily associated with a low concerns score, and vice versa. The reason for this is that CSR has various dimensions, and a firm can do well in one dimension while do badly in another dimension. Moreover, even for the same dimension, a firm can have a high strength score and a high concern score at the same time. For example, a firm might have a high environmental strength score because of recycling and adopting clean energy but also have a high environmental concern score due to an oil leak accident.

Previous studies have shown that compared to the strength score, the concern score has a stronger impact on M&A premium (Choi et al., 2015; Malik 2014), and we hypothesize this tendency is particularly strong for religious acquirer managers. Considering the findings that religious individuals do not prioritize CSR differently (Brammer et al., 2007), that firms located in highly religious areas engage less in positive CSR activities (Griffin & Sun, 2013; McGuire et al., 2012), and that acquirers headquartered in more religious counties pay less M&A premium (Xin, 2014), we argue that hypothesis 1 is driven by the effect of CSR concerns, which is more related to firms' potential risks. Therefore, we develop the following two hypotheses:

**H2a:** Acquirers headquartered in highly religious counties do not pay a higher premium for targets' CSR strengths.



**H2b:** Acquirers headquartered in highly religious counties pay a lower premium for targets' CSR concerns.

## Chapter 3: Data and Research Design

### 3.1 Data Selection

We obtain the M&A data from SDC Platinum, a database that has been widely used in M&A literature. We restrict our sample to the U.S. domestic deals, as it helps to reduce the probability of omitted variable biases, which can be caused by national culture or legal systems in a cross-border M&A setting (Hilary & Hui, 2009). Following previous studies, we impose the following criteria for the data selection: the deal is announced between Jan 1<sup>st</sup>, 1992 and Dec 31<sup>st</sup>, 2014; the deal value is at least one million; the deal is completed; both the acquirer and the target are public firms; the acquirer gets the control over the target after the deal (shares owned after the deal is higher than fifty percent). With such criteria, we retrieve 5612 M&A deals.

Next, we collect targets' CSR data from MSCI (formerly KLD and GMI), a database that has been used by many studies (Chand & Fraser, 2006; Sharfman, 1996; Waddock & Graves, 1997). MSCI categorizes a firm's CSR into seven dimensions: environment, community, diversity, product, employee relationship, human rights, and corporate governance. Each dimension is assigned with a strength score and a concern score. Following the argument that corporate governance does not belong to the concept of CSR (Gomes & Marsat, 2018; Malik, 2014), we exclude corporate governance, and use the other six dimensions for our test. Also, we use one-year lagged data to measure targets' pre-M&A CSR performance.<sup>5</sup> After getting matched with the CSR data, the sample size decreases to 747. The significant reduction of sample size is consistent with those reported by Malik (2014) and Choi et al. (2015). Since the scores are not comparable among different years, we rescale them for the year effect. That is, we divide the strength and concern score for each dimension by the respective maximum value of that year, so the total score of each dimension becomes one. We sum up a firm's strength (concern) scores for the six dimensions to get the total strengths (concerns) score and calculate the net CSR score by subtracting the total concerns score from the total strengths score.

Then, we drop the observations with negative M&A premium in percentage. Weitzel and Kling (2012) argue that different from positive premium, negative premium is usually caused by target

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<sup>5</sup> We use the data for 1995 – 2013. The strength/concern scores filed by MSCI is available for 1991 – 2013. Because the CUSIP code is not reported for 1991 - 1994, we start with 1995. The 1995 cutoff is also used by Choi et al. (2015), and the 2013 cutoff is also used by Cui et al. (2017).

overvaluation, market liquidity, or “hidden earnouts.”<sup>6</sup> Therefore, dropping the negative premium reduces the disturbances from these situations. We also drop the observation if the premium is missing. After the two steps, the sample size decreases to 671.

We retrieve the religiosity data from the American Religion Data Archive (ARDA) and calculate county-level religiosity as the ratio of the number of religious adherents in the county to the population of the county.<sup>7</sup> Since the data is reported every ten years (i.e., 1980, 1990, 2000, 2010), following Hilary and Hui (2009), we linearly interpolate the data to obtain the values for the missing years.<sup>8</sup> We match the M&A sample, which includes the zip codes of the acquirers’ headquarters, with the FIPS county codes, and then match them with the religiosity data by using the FIPS county codes. During this process, we lose 9 observations due to missing values of zip codes or county codes.

Finally, we exclude financial and utility industries from the sample as such industries are highly leveraged or highly regulated. Our final sample consists of 467 deals made by 348 acquirer firms, which are headquartered in 185 counties. Table 3.1 summarizes the sample selection procedure and presents a comparison with the studies of Malik (2014) and Choi et al. (2015). The year distribution and the industry distribution (at one-digit SIC-code level) of the sample can be found in Appendix A.

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<sup>6</sup> It refers to the fact that target shareholders benefit from a favorable share exchange ratio or the synergy realization when the acquirer pays by stock.

<sup>7</sup> The “Churches and Church Membership” files on ARDA provide information on the number of members of each church in every county.

<sup>8</sup> We use the 2000 survey results for 1996 – 2005 and the 2010 survey results for 2006 – 2014.

Table 3.1: Sample Construction and a Comparison with Other Studies

The table presents the sample construction procedure for this study. It also presents a comparison with the studies of Malik (2014) and Choi et al. (2015), who also use the M&A data from SDC platinum and the CSR data from MSCI (formerly KLD and GMI).

	Our Study	Malik (2014)	Choi et al. (2015)
Number of deals retrieved from SDC	5612	5932	-
Match with CSR data from MSCI	747	558	615
Drop due to negative premium	692	-	-
Drop due to unavailability of premium	671	-	-
Match with county religiosity data	662	-	-
Match with control variables	-	419	-
Drop financial and utility industries	467	323	426

### 3.2 Research Design

Following the literature (Hambrick & Hayward, 1997; Rau & Vermaelen, 1998), we define M&A premium as the purchase price paid by the acquirer minus the target's stock price, divided by the target's stock price. Although the purchase price is usually revealed on the deal-announcement date, most studies use the target's pre-announcement stock price to reduce the chance that the stock price gets contaminated by the M&A news. For example, Malik (2014) uses the stock price 30 days prior to the announcement and Choi et al. (2015) use the stock price one week prior to the announcement. For the main tests, we use the premium calculated by the stock price one week prior to the announcement, and for robustness check, we test a four-week premium. Also, following Rossi and Volpin (2004), we use the natural logarithm form of the premium in percentage. Mathematically, the dependant variable is expressed as following:

$$Premium = \ln\left(\frac{Purchase\ Price_{t_1} - Stock\ Price_{t_0}}{Stock\ Price_{t_0}} \times 100\right) \quad (3.1)$$

We construct three OLS regression models to test our hypotheses. Hypothesis 1 is tested by equation 3.2. Hypothesis 2a is tested by equation 3.3, and Hypothesis 2b is tested by equation 3.4. The main variables used in this study are defined in Appendix B.

$$Premium = \alpha + \beta_1 CSR + \beta_2 REL + \beta_3 REL * CSR + Controls \quad (3.2)$$

$$Premium = \alpha + \beta_1 TS + \beta_2 REL + \beta_3 REL * TS + Controls \quad (3.3)$$

$$Premium = \alpha + \beta_1 TC + \beta_2 REL + \beta_3 REL * TC + Controls \quad (3.4)$$

Table 3.2 presents the summary statistics for all variables, and Table 3.3 presents the main variables' sample average sorted by acquirer states. The sample mean of M&A premium in percentage is 40.3%, closed to the one reported by Choi et al. (2015), which is 40.53%. The negative mean of CSR (-0.28) is consistent with the average value of the whole MSCI data set.<sup>9</sup> To reduce the impact of outliers, we also winsorize the continuous variables at 1% level and conduct separate tests.

Since we want to study how the effect of one variable (CSR) depends on the other variable (Religiosity), the interaction CSR \* Religiosity is the main variable of interest. However, the interaction of two continuous variables would lead to severe multicollinearity issue, which will give erroneous inference. Therefore, we construct a dummy variable “REL” to capture the effect of religiosity. We define the acquirer is headquartered in a religious county (REL = 1) if the county-level religiosity falls into the fourth quartile of the sample (i.e., Religiosity > 0.671272), and not in a religious county (REL = 0) otherwise. As such, the interaction REL\*CSR is not highly correlated with either CSR or REL. Also, the correlation between Religiosity and REL is 0.72, indicating that REL is a good proxy for Religiosity. Likewise, we construct the other two interaction variables, REL\*total strengths (REL\*TS) and REL\*total concerns (REL\*TC), to test hypothesis 2a and 2b. The dummy variable REL divides the sample into 112 acquirers headquartered in religious counties (23.98% of the sample), with an average religiosity of 0.72, and 355 acquirers headquartered in non-religious counties (76.02% of the sample), with an average religiosity of 0.53. With all missing control variables dropped, there are 96 acquirers of religious

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<sup>9</sup> Based on our measure, the average CSR for the whole MSCI data set (obs. 37938) during 1995 – 2013 is -0.15.

Table 3.2: Summary Statistics

The table presents the summary statistics of all variables used in this study. The primary dependent variable is M&A premium (one-week), which is the natural logarithm of M&A premium in percentage calculated by targets' stock price one-week before the announcement. In our regressions, deal value and acquirer size are also adjusted with natural logarithm. The winsorizing is at 1% level.

Variable	Obs	Mean	Std. Dev.	Min	Max	Min (winsorized)	Max (winsorized)
M&A premium in percentage (one-week)	467	40.29	35.80	0.62	285.02		
M&A premium (one-week)	467	3.39	0.84	-0.48	5.65	0.63	5.43
CSR (six dimensions)	467	-0.28	0.52	-1.98	1.87	-1.75	1.12
TS (six dimensions)	467	0.18	0.32	0	1.87	0	1.53
TC (six dimensions)	467	0.47	0.45	0	2.40	0	2.17
Religiosity	467	0.58	0.11	0.29	0.94		
REL	467	0.24	0.43	0	1		
other bidder	467	0.06	0.25	0	1		
cash offer	467	0.44	0.50	0	1		
tender offer	467	0.22	0.42	0	1		
hostile bid	467	0.07	0.26	0	1		
toehold	467	0.02	0.14	0	1		
deal value in millions	467	4535.27	10198.48	14.2	89555.35		
deal value	467	7.33	1.41	2.65	11.40	4.36	10.99
acquirer size	462	8.73	1.75	0.99	13.41	4.56	12.14
acquirer FCF	461	0.15	0.14	-1.86	0.60	-0.18	0.44
target m/b (one-week)	439	3.69	4.89	0.31	58.75	0.57	21.13
target FCF	460	0.09	0.19	-1.61	0.51	-0.81	0.40
target leverage	449	0.19	0.26	0	3.23	0	0.88
target institutional	431	0.70	0.21	0.03	100.00	0.10	0.99
CSR (four dimensions)	467	-0.21	0.43	-2.13	1.37		
TC (four dimensions)	467	0.33	0.36	0	2.13		
M&A premium in percentage (four-week)	467	44.70	39.35	0.03	301.46		
M&A premium (four-week)	467	3.50	0.86	-3.51	5.71		
target m/b (four-week)	439	3.56	4.53	0.24	52.5		

ACSR	397	0.06	0.85	-2.89	2.91
horizontal	467	0.66	0.47	0	1

Table 3.3: Sample Average Sorted by Acquirer States

The table presents the sample average of deal value (in millions), M&A premium in percentage (calculated by targets' stock price one week before the announcement), religiosity, CSR (targets' net CSR score), TS (targets' total strengths score), and TC (targets' total concerns score) for each state where acquirers are headquartered.

State	Number of Deals	Percent	Deal Value	M&A Premium in Percentage	Religiosity	CSR	TS	TC
Alabama	2	0.43	2939.74	38.11	0.65	-0.63	0.00	0.63
Arkansas	6	1.28	2504.55	46.45	0.69	-0.33	0.11	0.44
Arizona	8	1.71	5665.67	41.39	0.42	-0.42	0.23	0.64
California	92	19.70	2919.50	39.59	0.46	-0.26	0.16	0.43
Colorado	5	1.07	15573.51	36.80	0.50	0.31	0.53	0.21
Connecticut	9	1.93	2764.67	30.55	0.69	-0.49	0.19	0.68
District of Columbia	4	0.86	1468.44	43.73	0.62	-0.18	0.17	0.35
Delaware	3	0.64	4211.55	70.14	0.55	0.02	0.31	0.29
Florida	10	2.14	1388.03	26.18	0.47	-0.30	0.07	0.37
Georgia	9	1.93	2892.47	43.54	0.60	-0.60	0.07	0.67
Idaho	2	0.43	6377.13	32.92	0.48	-0.15	0.10	0.25
Illinois	29	6.21	2779.44	44.04	0.60	-0.30	0.17	0.47
Indiana	4	0.86	2428.02	24.09	0.48	-0.44	0.09	0.52
Kansas	10	2.14	5669.47	28.82	0.62	-0.21	0.12	0.33
Kentucky	3	0.64	1969.71	30.12	0.57	-0.56	0.13	0.69
Louisiana	2	0.43	12670.48	26.28	0.70	-0.52	0.31	0.83
Massachusetts	29	6.21	2785.75	35.32	0.65	-0.16	0.21	0.36
Maryland	3	0.64	3365.13	24.78	0.53	-0.36	0.06	0.42
Michigan	7	1.50	6523.80	49.01	0.54	-0.29	0.65	0.94
Minnesota	12	2.57	1613.71	43.66	0.68	-0.25	0.11	0.36
Missouri	8	1.71	4670.88	34.54	0.55	-0.39	0.27	0.66

Mississippi	1	0.21	41906.90	100.99	0.67	0.20	0.20	0.00
North Carolina	8	1.71	2725.87	57.28	0.60	0.05	0.36	0.32
Nebraska	2	0.43	2746.44	20.01	0.61	-0.46	0.25	0.71
New Hampshire	1	0.21	2720.37	4.68	0.57	0.00	0.00	0.00
New Jersey	28	6.00	4147.13	40.45	0.64	-0.18	0.16	0.34
Nevada	3	0.64	3350.97	29.30	0.37	-0.31	0.00	0.31
New York	49	10.49	7931.66	51.38	0.63	-0.21	0.21	0.42
Ohio	17	3.64	5338.58	47.31	0.56	-0.24	0.21	0.45
Oklahoma	5	1.07	3773.05	25.66	0.81	-0.69	0.12	0.81
Oregon	2	0.43	1554.78	28.63	0.34	-0.23	0.10	0.33
Pennsylvania	12	2.57	1100.72	41.83	0.72	-0.50	0.04	0.54
Rhode Island	3	0.64	9930.50	19.01	0.57	-0.19	0.14	0.33
Tennessee	11	2.36	4394.11	56.91	0.64	-0.44	0.19	0.63
Texas	55	11.78	7183.41	32.80	0.62	-0.31	0.24	0.55
Virginia	8	1.71	3344.50	38.61	0.56	-0.72	0.06	0.78
Washington	2	0.43	7095.22	74.27	0.41	-0.13	0.13	0.25
Wisconsin	3	0.64	3610.12	33.44	0.61	-0.17	0.00	0.17
Total	467	100						



counties (25.33% of the sample), with an average religiosity of 0.72, and 283 acquirers of non-religious counties (74.67% of the sample), with an average religiosity of 0.53.

We control for year fixed effect for all OLS regressions, as it can resolve the disturbance from macro-economic factors that vary in different years. Also, it helps to alleviate the MSCI data's selection bias in the early years (Jo & Na, 2012).<sup>10</sup> In some regressions, we also control for acquirers' or targets' industry fixed effect (at one-digit SIC-code level) to get more robust results. Following the models used by Chatterjee et al. (2012) and Choi et al. (2015), we include two groups of control variables, deal characteristics and firm characteristics, to capture other factors that affect M&A premium.

Controls for deal characteristics include other bidder (a dummy variable that equals to one if there was more than one bidder), cash offer (a dummy variable that equals to one if the deal is paid entirely in cash), tender offer (a dummy variable that equals to one if the deal is tender offer), hostile bid (a dummy variable that equals to one if the deal is unsolicited), toehold (a dummy variable that equals to one if the target's ownership held by the acquirer before the deal is more than 5%), and deal value (the natural logarithm of the transaction value in millions). All these variables are retrieved from SDC platinum. Table 3.2 shows that 6.4% of the sample have more than one bidder; 44.1% of the sample are cash offers; 22.5% of the sample are tender offers; 7.3% of the sample are hostile bid; 2.1% of the sample have toehold. Regarding toehold, Mantecon (2009) argues that acquirers that have stakes in the targets prior to the M&A have less information asymmetry, which affects the M&A premium. Deal value affects premium because acquirers have more information about large targets (Coval & Moskowitz, 1999) and the potential gain for acquirers can decrease as the target size increases (Beckman & Haunschild, 2002).

For firm characteristics, we control for acquirers' size (the natural logarithm of the firm's total assets in millions one year prior to the announcement), acquirers' free cash flow (EBITDA in millions divided by total assets in millions one year prior to the announcement), targets' market-to-book (stock price one week prior to the announcement divided by book value per share), targets' free cash flow (EBITDA in millions divided by total assets in millions one year prior to the announcement), targets' leverage (total long-term debt in millions divided by total assets in

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<sup>10</sup> In the 1990s, firms in the KLD database include those in the S&P 500 and the Domini 400 Social Index, where selection for the latter was based on the KLD rating.

millions at the end of the year prior to the announcement year), and targets' institutional ownership (percent of shares held by institutional investors three months before the announcement). We retrieve the data of targets' leverage from COMPUSTAT, the data of targets' institutional ownership from Thompson Reuters on WRDS, and the rest from SDC Platinum. Acquirers' size and free cash flow are considered because large firms and firms with abundant cash are able to pay a higher premium. Targets' market-to-book affects premium because acquirers may pay a higher premium to high m/b targets to capture their growth opportunity (Laamanen, 2007). Also, it is possible that acquirers pay a lower premium to high m/b targets because they have been overvalued by the market. Similarly, targets' free cash flow affects premium as it reflects the target's growth potential and financial condition. Targets' leverage can affect premium because acquirers may be willing to pay more to low-leveraged targets to increase their debt capacity in the post-M&A period (Raad, 2012). Different from Choi et al. (2015), who calculate the leverage ratio as total liability over total assets, we use only the targets' total long-term debt as the numerator because a large portion of the data for short-term liability is not available. Finally, we control for targets' institutional ownership as Chatterjee et al. (2012) show that it can positively affect M&A premium.

Table 3.4 presents the Pearson correlation matrix for the main explanatory variables. Consistent with the finding of Xin (2014), the continuous measure of county-level religiosity is negatively correlated with M&A premium. However, different from our expectation, CSR is negatively correlated with premium, and TS is positively correlated with TC. The correlations among CSR, REL, and REL\*CSR are acceptable, so are the correlations among TS, REL, and REL\*TS and the correlations among TC, REL, and REL\*TC. Overall, the correlations suggest that multicollinearity should not pose any problems.

Table 3.4: Pearson Correlation Table

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) M&A premium	1									
(2) CSR	-0.02	1								
(3) TS	-0.01	0.52***	1							
(4) TC	0.02	-0.79***	0.12***	1						
(5) Religiosity	-0.08*	-0.04	-0.00	0.04	1					
(6) REL	-0.03	-0.03	-0.02	0.02	0.72***	1				
(7) REL*CSR	0.09*	0.49***	0.22***	-0.40***	-0.34***	-0.44***	1			
(8) REL*TS	-0.04	0.21***	0.44***	0.07	0.30***	0.43***	0.20***	1		
(9) REL*TC	-0.10**	-0.34***	0.03	0.42***	0.49***	0.65***	-0.84***	0.36***	1	
(10) other bidder	0.11**	-0.02	0.06	0.06	0.02	0.02	0.02	0.05	0.01	1
(11) cash offer	0.08*	-0.03	-0.18***	-0.10**	-0.10**	-0.07	0.01	-0.15***	-0.09**	-0.11**
(12) tender offer	0.20***	-0.02	-0.07	-0.03	-0.06	-0.09*	0.02	-0.08*	-0.06	0.09*
(13) hostile bid	0.13***	-0.03	0.04	0.06	0.05	0.07	-0.07	0.05	0.10**	0.53***
(14) toehold	0.07	-0.00	-0.02	-0.01	0.02	-0.01	-0.03	0.00	0.03	0.02
(15) deal value	-0.10**	0.08*	0.47***	0.24***	0.04	0.03	0.01	0.25***	0.13***	0.21***
(16) acquirer size	0.06	0.02	0.19***	0.11**	0.02	0.03	0.00	0.09**	0.05	0.04
(17) acquirer FCF	0.06	0.05	0.07	-0.01	-0.01	-0.05	0.10**	0.08	-0.05	0.02
(18) target m/b	-0.12**	0.08*	0.06	-0.05	-0.01	-0.03	0.08*	0.06	-0.05	0.04
(19) target FCF	-0.19***	0.02	0.11**	0.06	0.07	0.04	-0.00	0.09*	0.05	0.04
(20) target leverage	0.05	-0.00	0.06	0.04	0.06	0.06	-0.06	0.02	0.07	0.02
(21) target institutional	-0.21***	0.00	-0.01	-0.01	0.02	-0.04	0.01	-0.04	-0.03	0.04

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
(11) cash offer	1										
(12) tender offer	0.29***	1									
(13) hostile bid	-0.08*	0.20***	1								
(14) toehold	-0.04	-0.01	0.19***	1							
(15) deal value	-0.29***	-0.12**	0.17***	-0.03	1						
(16) acquirer size	0.21***	0.09**	0.04	0.10**	0.49***	1					
(17) acquirer FCF	0.13***	0.10**	-0.02	-0.00	0.14***	0.21***	1				
(18) target m/b	-0.00	0.06	0.01	0.02	0.14***	0.12***	0.01	1			
(19) target FCF	-0.03	-0.17***	0.02	0.00	0.31***	0.07	0.26***	0.12***	1		
(20) target leverage	-0.21***	-0.04	0.02	0.02	0.15***	0.13***	0.03	-0.17***	-0.13***	1	
(21) target institutional	0.06	-0.09*	0.01	-0.17***	0.34***	0.17***	0.14***	-0.07	0.23***	0.05	1

\*\*\*, \*\*, \* indicates significance at 1%, 5%, and 10% level, respectively.

## Chapter 4: Results

### 4.1 Main Results

Table 4.1 presents the regression results for hypothesis 1. In column 1, we run a preliminary regression without the interaction variable. The result shows that CSR is not significantly associated with M&A premium, and more surprisingly, the sign of CSR is negative, contradicting to the previous finding that CSR is positively associated with premium. The different results can be attributed to the different dependent variables used, the different measures of CSR, and the different samples constructed. For instance, Malik (2014) uses the premium calculated by the stock price 30-days before the announcement, and she excludes human rights from her measure of CSR. Also, she includes financial and utility industries into her sample. Likewise, Choi et al. (2015) include corporate governance into their measure of CSR, not to mention that they only test pure-cash transactions. Meanwhile, the estimation for county-level religiosity provides a weak support for the finding of Xin (2014), as Religiosity is negatively significant at 10% level.

Table 4.1: Test on Hypothesis 1

The table presents the result of seven OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price one week before the announcement. Test variables are the following: CSR, the target's net CSR score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; Religiosity, the religiosity of the county where the acquirer is headquartered; REL, a dummy variable that equals to one if Religiosity is in the fourth quartile of the sample and zero otherwise; REL\*CSR, the interaction between REL and CSR. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price one week before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 6 and targets' industry (at one-digit SIC-code level) dummies for regression 7. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CSR	-0.015 [-0.19]	-0.129 [-1.46]	-0.108 [-1.25]	-0.188** [-1.98]	-0.132 [-1.45]	-0.196** [-2.05]	-0.199** [-2.08]
Religiosity	-0.643* [-1.70]						

REL		0.079	0.088	0.021	0.043	0.046	0.037
		[0.76]	[0.87]	[0.19]	[0.42]	[0.43]	[0.34]
REL*CSR		0.449***	0.461***	0.619***	0.495***	0.649***	0.652***
		[2.66]	[2.78]	[3.50]	[2.93]	[3.66]	[3.67]
other bidder	0.066		0.163	-0.016	0.124	0.006	0.000
	[0.31]		[0.86]	[-0.08]	[0.63]	[0.03]	[0.00]
cash offer	-0.028		0.076	-0.016	-0.010	-0.027	-0.027
	[-0.25]		[0.88]	[-0.15]	[-0.10]	[-0.25]	[-0.24]
tender offer	0.124		0.180*	0.138	0.146	0.132	0.142
	[1.05]		[1.78]	[1.19]	[1.36]	[1.11]	[1.20]
hostile	0.410*		0.380**	0.471**	0.438**	0.465**	0.448**
	[1.96]		[2.07]	[2.28]	[2.34]	[2.18]	[2.12]
toehold	0.084		0.273	0.106	0.221	0.095	0.075
	[0.29]		[1.02]	[0.37]	[0.78]	[0.33]	[0.26]
deal value	-0.052		-0.067**	-0.045	-0.077*	-0.046	-0.052
	[-1.10]		[-2.26]	[-0.96]	[-1.84]	[-0.99]	[-1.11]
acquirer size	0.033			0.028	0.039	0.031	0.038
	[1.00]			[0.87]	[1.28]	[0.94]	[1.15]
acquirer FCF	0.796**			0.683**	0.621*	0.685**	0.680**
	[2.38]			[2.06]	[1.96]	[2.05]	[2.04]
target m/b	-0.017*			-0.018*	-0.018**	-0.022**	-0.022**
	[-1.71]			[-1.90]	[-2.23]	[-2.19]	[-2.21]
target FCF	-0.684**			-0.674**	-0.842***	-0.580*	-0.605*
	[-2.10]			[-2.10]	[-3.19]	[-1.78]	[-1.86]
target leverage	-0.025			0.004		0.191	0.179
	[-0.09]			[0.01]		[0.71]	[0.65]
target institutional	-0.741***			-0.749***		-0.824***	-0.800***
	[-2.94]			[-3.01]		[-3.27]	[-3.16]
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	No	No	No	No	No	Yes (A)	Yes (T)
Observations	379	467	467	379	430	379	379
R-squared	0.117	0.016	0.072	0.146	0.121	0.167	0.165
F-test	3.28***	2.47*	3.76***	3.93***	4.23***	3.08***	3.03***
F-test (restriction)		4.83**	6.05**	8.17***	6.31**	8.91***	8.92***

In column 2-7, we add the interaction REL\*CSR. The interaction is significant at 1% level in all regressions, providing strong evidence for hypothesis 1. In column 2, the result of the simple regression indicates that, in comparison to the acquirers of non-religious counties (REL = 0), the acquirers of religious counties (REL = 1) respond to target CSR more strongly. Mathematically, the impact of CSR on premium can be interpreted as following:

$$\frac{\partial Premium}{\partial CSR} = \beta_1 + \beta_3 REL = 0 + 0.45 REL \quad (4.1)$$

For an acquirer of religious counties, the impact of CSR on premium is captured by  $\beta_1 + \beta_3$ , and one-point increase of the target's net CSR score is associated with 0.45-unit increase of premium. For an acquirer of non-religious counties, the impact of CSR on premium is captured by  $\beta_1$ , and one-point increase of the target's net CSR score is associated with no change of premium. Since both CSR and REL are insignificant, the result suggests that the premium paid by acquirers of religious counties is more positively associated with targets' CSR rating. Also, the F-value of joint test shows that the model is jointly significant at 10 percent level.

Since  $\beta_1$  is not significantly different from 0, to strengthen our argument, we conduct a linear restriction test to see whether  $\beta_1 + \beta_3$  (which equals to 0.32 in column 2) is significantly different from 0. The F-value shows that we can reject the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$  at 5 percent level, providing further evidence that acquirers of religious counties value target CSR more strongly.

In column 3, we add the controls for deal characteristics.  $REL*CSR$  is significant at 1% level, and neither CSR nor REL is significant. The result of the restriction test is also unchanged. Therefore, it shows that hypothesis 1 is not affected by the deal characteristics. As we include more controls, the model become jointly significant at 1% level. In column 4, same as column 1, we add all controls for firm characteristics. The number of used data decreases to 379 because of unavailability of data for some variables, especially target leverage and target institutional. The interaction is still significant at 1% level, indicating that hypothesis 1 is not affected by the firm characteristics. Compared to the model used in column 1, the model in column 4 gets improved with a stronger explaining power and a higher joint significance level, as the R-squared increases from 11.7% to 14.6% and the F-value increases from 3.283 to 3.927. In column 5, we drop target leverage and institutional ownership. The result presented in column 5 is like that of column 4, suggesting that the result in column 4 is not driven by the loss of data. To ensure that the result is not caused by certain industries, we control for the acquirer's industry fixed effect in column 6 and the target's industry fixed effect in column 7. The results remain unchanged.

The estimation of CSR is opposed to previous studies, as it appears negatively associated with premium. In particular, column 4, 6, and 7 report a negative association at 5% significance level.

Although we are interested in whether different acquirers value target CSR differently, the variable CSR should not be used to infer how target CSR affects premium. For the purpose of comparison, we calculate the net CSR score as a sum of the six dimensions, but it is not reasonable to assume that in the real-world acquirers would treat these dimensions equally. The negative sign of CSR might be driven by the effect of some dimensions such as employee relationship and product, as Malik (2014) shows that employee relationship is negatively associated with premium and product has no effect on premium. For employee relationship, she argues that acquirers pay a lower premium to targets that have superior employee union relationship. Indeed, when we repeat the test by excluding the two dimensions, CSR is no longer significant. Table 4.2 presents the result.

Table 4.2: Test on Hypothesis 1 by Excluding Employee Relationship and Product from CSR

The table presents the result of six OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price one week before the announcement. Test variables are the following: CSR, the target's net CSR score based on the four dimensions including environment, community, diversity, and human rights; REL, a dummy variable that equals to one if the religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*CSR, the interaction between REL and CSR. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price one week before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 5 and targets' industry (at one-digit SIC-code level) dummies for regression 6. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
CSR	-0.067 [-0.64]	-0.038 [-0.37]	-0.063 [-0.56]	-0.031 [-0.29]	-0.069 [-0.61]	-0.069 [-0.61]
REL	0.100 [0.98]	0.105 [1.04]	0.021 [0.19]	0.061 [0.59]	0.050 [0.46]	0.041 [0.38]
REL*CSR	0.663*** [3.08]	0.650*** [3.08]	0.791*** [3.51]	0.693*** [3.20]	0.836*** [3.70]	0.841*** [3.71]
other bidder		0.165 [0.87]	-0.007 [-0.03]	0.123 [0.63]	0.016 [0.08]	0.012 [0.06]
cash offer		0.072 [0.83]	-0.010 [-0.09]	-0.004 [-0.04]	-0.020 [-0.18]	-0.019 [-0.17]
tender offer		0.182*	0.145	0.151	0.138	0.148



		[1.80]	[1.25]	[1.42]	[1.16]	[1.26]
hostile		0.374**	0.450**	0.431**	0.442**	0.424**
		[2.04]	[2.19]	[2.31]	[2.08]	[2.02]
toehold		0.239	0.074	0.186	0.065	0.043
		[0.90]	[0.26]	[0.66]	[0.23]	[0.15]
deal value		-0.070**	-0.042	-0.074*	-0.044	-0.049
		[-2.36]	[-0.90]	[-1.78]	[-0.94]	[-1.04]
acquirer size			0.022	0.035	0.026	0.032
			[0.68]	[1.14]	[0.78]	[0.96]
acquirer FCF			0.665**	0.592*	0.658**	0.661**
			[2.01]	[1.88]	[1.98]	[1.99]
target m/b			-0.020**	-0.019**	-0.024**	-0.024**
			[-2.09]	[-2.36]	[-2.39]	[-2.42]
target FCF			-0.751**	-0.872***	-0.655**	-0.688**
			[-2.35]	[-3.32]	[-2.02]	[-2.13]
target leverage			0.029		0.227	0.213
			[0.11]		[0.84]	[0.78]
target institutional			-0.710***		-0.787***	-0.762***
			[-2.86]		[-3.13]	[-3.01]
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	No	No	No	No	Yes (A)	Yes (T)
Observations	467	467	379	430	379	379
R-squared	0.023	0.078	0.149	0.129	0.171	0.169
F-test	3.48**	4.11***	4.04***	4.52***	3.17***	3.12***
F-test (restriction)	9.53***	10.46***	13.33***	11.84***	14.69***	14.81***

In Table 4.2, CSR is not significant in any regressions, but the interaction REL\*CSR is significant at 1% level in all regressions, providing consistent evidence for hypothesis 1. However, the results should not be interpreted as acquirers of non-religious counties do not value target CSR. Since different dimension of CSR gets evaluated differently by acquirers, in order to see how CSR affects M&A premium, it is more reasonable to test each dimension separately, as Malik (2014) does. Our measure of CSR is only to investigate how the impact of CSR varies across acquirers' religiosity. In addition, the F-values of the restriction tests in Table 4.2 are all larger than those reported in Table 4.1, implying that for acquirers of religious counties, the impact of CSR on premium is primarily driven by the four CSR dimensions including environment, community, diversity, and human rights.

Despite that the positive association between target CSR and M&A premium is stronger for acquirers headquartered in highly religious counties, the reason can be that religious acquirer managers pay a higher premium for targets' CSR strengths or that they pay a lower premium for targets' CSR concerns. To test hypothesis 2a and 2b, we interact REL with targets' total strengths score (TS) and total concerns score (TC) to see how the interactions are associated with M&A premium. Table 4.3 presents the results of the test on hypothesis 2a.

Table 4.3: Test on Hypothesis 2a

The table presents the result of seven OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price one week before the announcement. Test variables are the following: TS, the target's total strengths score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; Religiosity, the religiosity of the county where the acquirer is headquartered; REL, a dummy variable that equals to one if Religiosity is in the fourth quartile of the sample and zero otherwise; REL\*TS, the interaction between REL and TS. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price one week before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 6 and targets' industry (at one-digit SIC-code level) dummies for regression 7. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
TS	-0.001 [-0.01]	-0.080 [-0.56]	0.085 [0.57]	0.000 [0.00]	0.078 [0.50]	0.050 [0.30]	-0.044 [-0.26]
Religiosity	-0.644* [-1.70]						
REL		-0.027 [-0.26]	-0.021 [-0.21]	-0.139 [-1.21]	-0.077 [-0.72]	-0.131 [-1.14]	-0.144 [-1.24]
REL*TS		-0.151 [-0.53]	-0.118 [-0.43]	-0.031 [-0.11]	-0.097 [-0.34]	0.014 [0.05]	0.034 [0.12]
other bidder	0.065 [0.31]		0.202 [1.06]	0.060 [0.28]	0.159 [0.80]	0.074 [0.34]	0.073 [0.34]
cash offer	-0.027 [-0.25]		0.075 [0.85]	-0.030 [-0.27]	-0.018 [-0.18]	-0.037 [-0.32]	-0.037 [-0.33]
tender offer	0.124 [1.05]		0.179* [1.75]	0.116 [0.98]	0.138 [1.27]	0.108 [0.89]	0.119 [0.99]
hostile	0.412**		0.348*	0.425**	0.416**	0.423*	0.403*

	[1.98]		[1.88]	[2.03]	[2.20]	[1.95]	[1.87]
toehold	0.083		0.256	0.061	0.187	0.044	0.028
	[0.29]		[0.95]	[0.21]	[0.65]	[0.15]	[0.09]
deal value	-0.052		-0.076**	-0.050	-0.089**	-0.047	-0.053
	[-1.01]		[-2.33]	[-0.98]	[-2.00]	[-0.91]	[-1.03]
acquirer size	0.033			0.032	0.042	0.035	0.041
	[0.98]			[0.98]	[1.38]	[1.02]	[1.21]
acquirer FCF	0.794**			0.804**	0.724**	0.816**	0.890**
	[2.37]			[2.38]	[2.26]	[2.40]	[2.38]
target m/b	-0.017*			-0.017*	-0.017**	-0.020**	-0.020**
	[-1.73]			[-1.70]	[-2.06]	[-1.97]	[-2.00]
target FCF	-0.687**			-0.700**	-0.864***	-0.615*	-0.638*
	[-2.11]			[-2.14]	[-3.24]	[-1.85]	[-1.93]
target leverage	-0.022			-0.051		0.125	0.114
	[-0.09]			[-0.19]		[0.45]	[0.41]
target institutional	-0.741***			-0.771***		-0.858***	-0.833***
	[-2.90]			[-3.01]		[-3.30]	[-3.19]
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	No	No	No	No	No	Yes (A)	Yes (T)
Observations	379	467	467	379	430	379	379
R-squared	0.117	0.003	0.056	0.115	0.103	0.134	0.131
F-test	3.28***	0.46	2.89***	3.00***	3.51***	2.38***	2.32***
F-test (restriction)		0.83	0.02	0.01	0.01	0.02	0.00

The interaction REL\*TS is not significant in any regressions, consistent with our hypothesis that acquirers of religious counties do not pay additional premium for target CSR strengths. Also, the inclusion of the interaction does not improve the model in any ways, as the R-squared decreases from 0.117 in column 1 to 0.115 in column 4, and the F-value decreases from 3.28 in column 1 to 3.00 in column 4. TS is not significant in any regressions, and we fail to reject the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$  in all restriction tests, making the impact of CSR strengths no different between the two types of acquirers. Overall, the result does not show that our finding for hypothesis 1 is caused by target CSR strengths. So, we proceed to test hypothesis 2b. Table 4.4 presents the result.

Table 4.4: Test on Hypothesis 2b

The table presents the result of seven OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price one week before the announcement. Test variables are the following: TC, the target's total concerns score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; Religiosity, the religiosity of the county where the acquirer is headquartered; REL, a dummy variable that equals to one if Religiosity is in the fourth quartile of the sample and zero otherwise; REL\*TC, the interaction between REL and TC. Controls for deal characteristics are

the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price one week before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 6 and targets' industry (at one-digit SIC-code level) dummies for regression 7. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
TC	0.024 [0.23]	0.139 [1.33]	0.191* [1.84]	0.274** [2.34]	0.229** [2.06]	0.263** [2.20]	0.267** [2.24]
Religiosity	-0.643* [-1.70]						
REL		0.251* [1.96]	0.266** [2.12]	0.257* [1.90]	0.241* [1.88]	0.276** [2.03]	0.265* [1.94]
REL*TC		-0.644*** [-3.35]	-0.664*** [-3.52]	-0.854*** [-4.19]	-0.725*** [-3.71]	-0.866*** [-4.23]	-0.860*** [-4.20]
other bidder	0.070 [0.33]		0.156 [0.83]	0.001 [0.01]	0.128 [0.66]	0.025 [0.11]	0.021 [0.10]
cash offer	-0.029 [-0.26]		0.070 [0.81]	-0.035 [-0.32]	-0.016 [-0.16]	-0.047 [-0.42]	-0.046 [-0.42]
tender offer	0.124 [1.05]		0.180* [1.79]	0.136 [1.17]	0.145 [1.36]	0.131 [1.11]	0.142 [1.21]
hostile	0.408* [1.95]		0.387** [2.11]	0.469** [2.28]	0.439** [2.36]	0.462** [2.17]	0.444** [2.11]
toehold	0.085 [0.29]		0.304 [1.14]	0.151 [0.53]	0.257 [0.91]	0.136 [0.48]	0.114 [0.40]
deal value	-0.055 [-1.11]		-0.067** [-2.23]	-0.051 [-1.06]	-0.080* [-1.88]	-0.050 [-1.04]	-0.056 [-1.16]
acquirer size	0.033 [1.01]			0.028 [0.85]	0.037 [1.22]	0.029 [0.88]	0.035 [1.08]
acquirer FCF	0.794** [2.37]			0.731** [2.23]	0.663** [2.12]	0.745** [2.26]	0.741** [2.25]
target m/b	-0.017* [-1.69]			-0.016* [-1.69]	-0.017** [-2.13]	-0.020** [-2.01]	-0.020** [-2.01]
target FCF	-0.681** [-2.08]			-0.650** [-2.04]	-0.843*** [-3.21]	-0.562* [-1.73]	-0.591* [-1.83]
target leverage	-0.026 [-0.10]			-0.058 [-0.23]		0.118 [0.44]	0.091 [0.34]

target institutional	-0.735***			-0.732***		-0.809***	-0.780***
	[-2.89]			[-2.95]		[-3.21]	[-3.08]
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	No	No	No	No	No	Yes (A)	Yes (T)
Observations	379	467	467	379	430	379	379
R-squared	0.117	0.026	0.081	0.158	0.132	0.177	0.174
F-test	3.28***	3.93***	4.31***	4.32***	4.67***	3.31***	3.24***
F-test (restriction)		9.46***	8.41***	10.99***	8.78***	11.81***	11.37***

The interaction REL\*TC is negatively significant at 1% level throughout all regressions, providing strong evidence that acquirers of religious counties pay a lower premium for targets' CSR concerns. For example, the result in column 2 can be interpreted as following:

$$\frac{\partial \text{Premium}}{\partial \text{TC}} = \beta_1 + \beta_3 \text{REL} = 0 - 0.64 \text{REL} \quad (4.2)$$

For an acquirer of religious counties, the impact of CSR concerns on premium is captured by  $\beta_1 + \beta_3$ , and one-unit increase of the target's CSR concerns score is associated with 0.64-unit decrease of premium, while for an acquirer of non-religious counties, the impact of CSR concerns on premium is captured by  $\beta_1$ , and there is no association between the target's CSR concerns score and premium. The restriction test confirms that the response of acquirers of religious counties is significantly different from 0.

One thing noticeable is that REL is positively significant in all regressions, meaning that acquirers of religious counties pay additional premium regardless of the targets' CSR concerns. For example, the result of column 2 suggests that an acquirer of religious counties would pay 0.25-unit additional premium on average. The significance of REL might be caused by the correlations among REL\*TC, REL, and TC, as it is not observed in previous tables. To rule out the possibility of multicollinearity, we check through Variance Inflation Factors (VIF) of these variables but find they are acceptable: the VIF of REL\*TC is around 2.5; the VIF of REL is around 2.1; the VIF of TC is around 1.5.

In Table 4.4, TC is positively significant in column 3-7, indicating that the negative sign of CSR reported in Table 4.1 is driven by the positive sign of CSR concerns. For the positively significant result of CSR concerns, we argue that it is also caused by the effect of employee relationship and

product.<sup>11</sup> When we drop the two dimensions and repeat the test on hypothesis 2b, TC does not show any significance. Table 4.5 presents the result.

Table 4.5: Test on Hypothesis 2b by Excluding Employee Relationship and Product from TC

The table presents the result of six OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price one week before the announcement. Test variables are the following: TC, the target's total concerns score based on the four dimensions including environment, community, diversity, and human rights; REL, a dummy variable that equals to one if the religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*TC, the interaction between REL and TC. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price one week before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 5 and targets' industry (at one-digit SIC-code level) dummies for regression 6. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
TC	0.135 [1.08]	0.174 [1.41]	0.197 [1.43]	0.172 [1.32]	0.179 [1.28]	0.187 [1.34]
REL	0.256** [2.09]	0.255** [2.12]	0.220* [1.69]	0.228* [1.84]	0.240* [1.84]	0.232* [1.78]
REL*TC	-0.927*** [-3.70]	-0.909*** [-3.69]	-1.114*** [-4.19]	-0.987*** [-3.84]	-1.127*** [-4.23]	-1.132*** [-4.24]
other bidder		0.153 [0.82]	-0.009 [-0.04]	0.120 [0.61]	0.008 [0.04]	0.008 [0.04]
cash offer		0.069 [0.81]	-0.019 [-0.17]	-0.006 [-0.06]	-0.029 [-0.26]	-0.029 [-0.26]
tender offer		0.179* [1.78]	0.142 [1.23]	0.146 [1.37]	0.133 [1.13]	0.144 [1.23]
hostile		0.373** [2.05]	0.441** [2.16]	0.424** [2.28]	0.440** [2.08]	0.420** [2.01]
toehold		0.268 [1.01]	0.113 [0.40]	0.223 [0.80]	0.097 [0.34]	0.077 [0.27]
deal value		-0.065**	-0.035	-0.068	-0.035	-0.041

<sup>11</sup> Another explanation proposed by a reviewer is that targets with more CSR concerns may get undervalued by the stock market before the M&A deals. As acquirers pay for the true value of the targets, it creates a false appearance that these targets get paid with a higher premium.

			[-2.19]	[-0.74]	[-1.63]	[-0.74]	[-0.86]
acquirer size				0.020	0.033	0.023	0.029
				[0.63]	[1.08]	[0.70]	[0.89]
acquirer FCF				0.699**	0.620**	0.706**	0.706**
				[2.13]	[1.98]	[2.14]	[2.14]
target m/b				-0.019*	-0.018**	-0.022**	-0.022**
				[-1.91]	[-2.23]	[-2.22]	[-2.23]
target FCF				-0.738**	-0.875***	-0.646**	-0.679**
				[-2.32]	[-3.34]	[-2.00]	[-2.10]
target leverage				-0.010		0.176	0.153
				[-0.04]		[0.66]	[0.57]
target institutional				-0.727***		-0.809***	-0.778***
				[-2.93]		(-3.22)	(-3.07)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	No	No	No	No	Yes (A)	Yes (T)	
Observations	467	467	379	430	379	379	
R-squared	0.032	0.084	0.159	0.135	0.179	0.176	
F-test	4.84***	4.47***	4.35***	4.78***	3.34***	3.29***	
F-test (restriction)	12.74***	11.28***	15.23***	12.91***	16.22***	16.01***	

To ensure that our results are not affected by outliers, we retest the three hypotheses with winsorized data. Considering the sample size, we winsorize the continuous variables at 1% level. Table 4.6 presents the result for hypothesis 1, and Table 4.7 and 4.8 present the results for hypothesis 2a and 2b, respectively. Overall, the results from the winsorized data are similar to those of the unwinsorized data, thus provide consistent support for our arguments.

Table 4.6: Test on Hypothesis 1 with the Data Winsorized at 1% Level

The table presents the result of six OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price one week before the announcement. Test variables are the following: CSR, the target's net CSR score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; REL, a dummy variable that equals to one if the religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*CSR, the interaction between REL and CSR. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price one week before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal.

We control for year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 5 and targets' industry (at one-digit SIC-code level) dummies for regression 6. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
CSR	-0.130 [-1.46]	-0.111 [-1.27]	-0.201** [-2.12]	-0.136 [-1.48]	-0.210** [-2.20]	-0.214** [-2.23]
REL	0.081 [0.80]	0.091 [0.92]	0.020 [0.19]	0.039 [0.38]	0.041 [0.39]	0.033 [0.31]
REL*CSR	0.420** [2.49]	0.433*** [2.61]	0.626*** [3.55]	0.480*** [2.83]	0.653*** [3.68]	0.656*** [3.70]
other bidder		0.155 [0.84]	-0.011 [-0.05]	0.129 [0.67]	0.014 [0.07]	0.008 [0.04]
cash offer		0.082 [0.97]	0.011 [0.11]	0.005 [0.05]	-0.002 [-0.01]	-0.001 [-0.01]
tender offer		0.180* [1.82]	0.160 [1.41]	0.157 [1.50]	0.159 [1.37]	0.167 [1.45]
hostile		0.365** [2.03]	0.436** [2.17]	0.412** [2.25]	0.427** [2.06]	0.410** [1.99]
toehold		0.270 [1.03]	0.138 [0.50]	0.238 [0.86]	0.126 [0.45]	0.108 [0.38]
deal value		-0.062** [-2.08]	-0.026 [-0.55]	-0.057 [-1.35]	-0.026 [-0.56]	-0.031 [-0.68]
acquirer size			0.027 [0.85]	0.036 [1.18]	0.030 [0.93]	0.037 [1.13]
acquirer FCF			0.615 [1.24]	0.641 [1.36]	0.632 [1.26]	0.622 [1.24]
target m/b			-0.032** [-2.29]	-0.027** [-2.18]	-0.036*** [-2.60]	-0.037*** [-2.66]
target FCF			-0.627** [-2.02]	-0.864*** [-3.02]	-0.529* [-1.67]	-0.554* [-1.76]
target leverage			0.048 [0.19]		0.229 [0.86]	0.219 [0.82]
target institutional			-0.728*** [-3.02]		-0.803*** [-3.28]	-0.778*** [-3.16]
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	No	No	No	No	Yes (A)	Yes (T)
Observations	467	467	379	430	379	379
R-squared	0.014	0.069	0.142	0.112	0.162	0.161
F-test	2.15*	3.60***	3.80***	3.84***	2.97***	2.95***
F-test (restriction)	3.98**	5.08**	7.96***	5.68**	8.55***	8.54***



Table 4.7: Test on Hypothesis 2a with the Data Winsorized at 1% Level

The table presents the result of six OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price one week before the announcement. Test variables are the following: TS, the target's total strengths score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; REL, a dummy variable that equals to one if the religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*TS, the interaction between REL and TS. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price one week before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 5 and targets' industry (at one-digit SIC-code level) dummies for regression 6. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
TS	-0.077 [-0.54]	0.086 [0.57]	-0.028 [-0.17]	0.060 [0.38]	-0.075 [-0.45]	-0.072 [-0.43]
REL	-0.024 [-0.24]	-0.019 [-0.19]	-0.165 [-1.49]	-0.093 [-0.90]	-0.160 [-1.43]	-0.174 [-1.55]
REL*TS	-0.104 [-0.37]	-0.073 [-0.26]	0.069 [0.24]	-0.025 [-0.09]	0.110 [0.37]	0.135 [0.46]
other bidder		0.193 [1.04]	0.059 [0.28]	0.160 [0.82]	0.077 [0.36]	0.076 [0.36]
cash offer		0.080 [0.94]	-0.004 [-0.04]	-0.005 [-0.05]	-0.014 [-0.12]	-0.013 [-0.12]
tender offer		0.179* [1.80]	0.137 [1.19]	0.150 [1.41]	0.135 [1.14]	0.144 [1.23]
hostile		0.336* [1.86]	0.398* [1.95]	0.395** [2.14]	0.393* [1.86]	0.372* [1.78]
toehold		0.253 [0.96]	0.089 [0.31]	0.201 [0.72]	0.071 [0.25]	0.055 [0.19]
deal value		-0.072** [-2.20]	-0.032 [-0.63]	-0.070 [-1.56]	-0.028 [-0.55]	-0.034 [-0.67]
acquirer size			0.033 [1.02]	0.040 [1.32]	0.036 [1.08]	0.042 [1.26]
acquirer FCF			0.775 [1.54]	0.777 [1.63]	0.814 [1.58]	0.804 [1.57]
target m/b			-0.029** [-2.07]	-0.025** [-2.03]	-0.034** [-2.37]	-0.035** [-2.43]

target FCF			-0.638**	-0.879***	-0.547*	-0.571*
			[-2.02]	[-3.04]	[-1.70]	[-1.78]
target leverage			-0.005		0.168	0.161
			[-0.02]		[0.62]	[0.59]
target institutional			-0.741***		-0.829***	-0.805***
			[-2.98]		[-3.27]	[-3.16]
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	No	No	No	No	Yes (A)	Yes (T)
Observations	467	467	379	430	379	379
R-squared	0.002	0.055	0.111	0.094	0.129	0.127
F-test	0.32	2.84***	2.86***	3.18***	2.27***	2.24***
F-test (restriction)	0.51	0.00	0.02	0.02	0.02	0.05

Table 4.8: Test on Hypothesis 2b with the Data Winsorized at 1% Level

The table presents the result of six OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price one week before the announcement. Test variables are the following: TC, the target's total concerns score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; REL, a dummy variable that equals to one if the religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*TC, the interaction between REL and TC. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price one week before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 5 and targets' industry (at one-digit SIC-code level) dummies for regression 6. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
TC	0.139	0.189*	0.271**	0.219**	0.263**	0.268**
	[1.34]	[1.84]	[2.34]	[1.99]	[2.24]	[2.29]
REL	0.229*	0.245**	0.221*	0.207	0.237*	0.226*
	[1.83]	[1.99]	[1.67]	[1.64]	[1.78]	[1.70]
REL*TC	-0.576***	-0.597***	-0.790***	-0.658***	-0.804***	-0.798***
	[-3.04]	[-3.21]	[-3.94]	[-3.40]	[-4.00]	[-3.96]
other bidder		0.153	0.012	0.135	0.038	0.034
		[0.83]	[0.06]	[0.70]	[0.18]	[0.17]
cash offer		0.076	-0.010	-0.002	-0.024	-0.023
		[0.90]	[-0.09]	[-0.02]	[-0.22]	[-0.21]

tender offer		0.180*	0.154	0.157	0.156	0.165
		[1.84]	[1.36]	[1.50]	[1.35]	[1.43]
hostile		0.369**	0.433**	0.414**	0.422**	0.405**
		[2.06]	[2.16]	[2.27]	[2.03]	[1.97]
toehold		0.297	0.176	0.267	0.160	0.140
		[1.14]	[0.63]	[0.97]	[0.57]	[0.50]
deal value		-0.063**	-0.036	-0.062	-0.034	-0.040
		[-2.10]	[-0.74]	[-1.45]	[-0.71]	[-0.83]
acquirer size			0.028	0.035	0.030	0.036
			[0.88]	[1.15]	[0.92]	[1.11]
acquirer FCF			0.682	0.692	0.725	0.712
			[1.39]	[1.49]	[1.45]	[1.43]
target m/b			-0.028**	-0.025**	-0.033**	-0.034**
			[-2.04]	[-2.09]	[-2.38]	[-2.40]
target FCF			-0.592*	-0.852***	-0.500	-0.527*
			[-1.91]	[-2.99]	[-1.58]	[-1.67]
target leverage			-0.021		0.149	0.125
			[-0.08]		[0.56]	[0.47]
target institutional			-0.703***		-0.779***	-0.750***
			[-2.91]		[-3.17]	[-3.04]
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	No	No	No	No	Yes (A)	Yes (T)
Observations	467	467	379	430	379	379
R-squared	0.021	0.076	0.149	0.119	0.168	0.166
F-test	3.18**	4.01***	4.03***	4.15***	3.09***	3.05***
F-test (restriction)	7.32***	6.45**	9.13***	7.03***	9.81***	9.41***

## 4.2 Robustness Check

We conduct eight robustness tests: first, we test M&A premium calculated by targets' stock price four weeks prior to the announcement; second, we control for the acquirer's CSR rating; third, we control for whether the acquirer and the target are in the same industry; fourth, we control for the acquirer's state fixed effect; fifth, we drop some states with high religiosity; sixth, we test only 100-percent deals; seventh, we drop repeated acquirers; last, we construct three sub-samples by dropping the first, second, and third quartile of the sample based on religiosity, and test these sub-samples. All these tests are conducted with unwinsorized data.

To ensure that our results do not hinge upon the dependent variable that we use, we repeat the tests with a premium calculated by targets' stock price four weeks before the announcement.

Accordingly, we recalculate target market-to-book with the four-week lagged stock price. Table 4.9 presents the result for hypothesis 1.

Table 4.9: Test on Hypothesis 1 with Four-Week Premium

The table presents the result of six OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price four weeks before the announcement. Test variables are the following: CSR, the target's net CSR score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; REL, a dummy variable that equals to one if the religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*CSR, the interaction between REL and CSR. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price four weeks before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 5 and targets' industry (at one-digit SIC-code level) dummies for regression 6. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
CSR	-0.171*	-0.155*	-0.170*	-0.124	-0.175*	-0.177*
	[-1.90]	[-1.75]	[-1.72]	[-1.33]	[-1.75]	[-1.79]
REL	0.185*	0.198*	0.108	0.123	0.132	0.124
	[1.77]	[1.91]	[0.97]	[1.17]	[1.17]	[1.10]
REL*CSR	0.412**	0.412**	0.449**	0.353**	0.459**	0.456**
	[2.40]	[2.43]	[2.44]	[2.04]	[2.48]	[2.49]
other bidder		0.145	-0.008	0.093	0.027	-0.005
		[0.75]	[-0.04]	[0.46]	[0.12]	[-0.02]
cash offer		0.183**	0.041	0.051	0.044	0.048
		[2.06]	[0.35]	[0.51]	[0.38]	[0.42]
tender offer		0.136	0.035	0.058	0.016	-0.001
		[1.31]	[0.29]	[0.53]	[0.13]	[-0.00]
hostile		0.157	0.269	0.261	0.248	0.267
		[0.83]	[1.26]	[1.36]	[1.11]	[1.22]
toehold		0.307	0.093	0.215	0.100	0.121
		[1.12]	[0.31]	[0.74]	[0.33]	[0.41]
deal value		-0.063**	-0.088*	-0.109**	-0.089*	-0.088*
		[-2.09]	[-1.81]	[-2.55]	[-1.84]	[-1.83]
acquirer size			0.081**	0.087***	0.083**	0.088***
			[2.40]	[2.81]	[2.39]	[2.59]
acquirer FCF			0.736**	0.627*	0.758**	0.749**

			[2.14]	[1.94]	[2.18]	[2.18]
target m/b			-0.014	-0.010	-0.016	-0.016
			[-1.32]	[-1.11]	[-1.42]	[-1.47]
target FCF			-0.732**	-0.719***	-0.676**	-0.622*
			[-2.19]	[-2.66]	[-1.99]	[-1.85]
target leverage			0.141		0.256	0.375
			[0.52]		[0.90]	[1.33]
target institutional			-0.642**		-0.695***	-0.757***
			[-2.49]		[-2.65]	[-2.90]
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	No	No	No	No	Yes (A)	Yes (T)
Observations	467	467	379	430	379	379
R-squared	0.015	0.059	0.117	0.097	0.131	0.146
F-test	2.31*	3.07***	3.05***	3.30***	2.31***	2.63***
F-test (restriction)	2.65	3.08*	3.16*	2.41	3.22*	3.16*

Hypothesis 1 is supported by the regressions on the four-week premium. In column 1, we repeat the simple regression, and REL\*CSR is positively significant at 5% level. As we add more controls, the interaction term stays significant at 5% level in column 2-6. The results of the restriction tests are less persuasive as we can only reject the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$  at 10% level for the regressions in column 2, 3, 5, and 6; however, this might be caused by the disturbance from CSR strengths since we can still reject the null hypothesis at 5% level in all restriction tests for hypothesis 2b. Table 4.10 and Table 4.11 present the results of the tests on hypothesis 2a and 2b, respectively. The results are similar to those of the previous tests.

Table 4.10: Test on Hypothesis 2a with Four-Week Premium

The table presents the result of six OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price four weeks before the announcement. Test variables are the following: TS, the target's total strengths score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; REL, a dummy variable that equals to one if the religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*TS, the interaction between REL and TS. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price four weeks before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the

deal. We control for year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 5 and targets' industry (at one-digit SIC-code level) dummies for regression 6. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
TS	-0.187 [-1.29]	-0.046 [-0.30]	-0.063 [-0.37]	0.000 [0.00]	-0.096 [-0.56]	-0.106 [-0.63]
REL	0.101 [0.95]	0.111 [1.06]	0.016 [0.13]	0.061 [0.56]	0.031 [0.26]	0.012 [0.10]
REL*TS	-0.221 [-0.77]	-0.182 [-0.64]	-0.146 [-0.49]	-0.201 [-0.70]	-0.118 [-0.39]	-0.052 [-0.17]
other bidder		0.176 [0.90]	0.038 [0.17]	0.112 [0.55]	0.064 [0.28]	0.034 [0.15]
cash offer		0.179** [2.00]	0.030 [0.26]	0.045 [0.44]	0.037 [0.32]	0.042 [0.36]
tender offer		0.132 [1.26]	0.016 [0.13]	0.050 [0.46]	-0.004 [-0.04]	-0.018 [-0.15]
hostile		0.128 [0.68]	0.241 [1.12]	0.245 [1.28]	0.226 [1.01]	0.242 [1.10]
toehold		0.290 [1.05]	0.059 [0.20]	0.194 [0.67]	0.061 [0.20]	0.083 [0.28]
deal value		-0.059* [-1.79]	-0.079 [-1.52]	-0.109** [-2.41]	-0.078 [-1.47]	-0.077 [-1.47]
acquiror size			0.082** [2.40]	0.088*** [2.81]	0.084** [2.38]	0.088** [2.57]
acquiror FCF			0.844** [2.43]	0.717** [2.20]	0.871** [2.48]	0.854** [2.46]
target m/b			-0.013 [-1.19]	-0.009 [-0.98]	-0.014 [-1.28]	-0.015 [-1.35]
target FCF			-0.761** [-2.27]	-0.743*** [-2.74]	-0.711** [-2.08]	-0.659* [-1.95]
target leverage			0.095 [0.35]		0.205 [0.72]	0.328 [1.14]
target institutional			-0.684*** [-2.60]		-0.746*** [-2.78]	-0.806*** [-3.02]
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	No	No	No	No	Yes (A)	Yes (T)
Observations	467	467	379	430	379	379
R-squared	0.010	0.048	0.103	0.089	0.116	0.131
F-test	1.49	2.44**	2.64***	2.99***	2.02***	2.32***
F-test (restriction)	2.52	0.75	0.58	0.58	0.59	0.33

Table 4.11: Test on Hypothesis 2b with Four-Week Premium

The table presents the result of six OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price four weeks before the announcement. Test variables are the following: TC, the target's total concerns score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; REL, a dummy variable that equals to one if the religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*TC, the interaction between REL and TC. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price four weeks before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 5 and targets' industry (at one-digit SIC-code level) dummies for regression 6. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
TC	0.141 [1.33]	0.201* [1.89]	0.224* [1.83]	0.184 [1.62]	0.216* [1.73]	0.210* [1.70]
REL	0.357*** [2.75]	0.370*** [2.89]	0.304** [2.16]	0.291** [2.21]	0.322** [2.26]	0.298** [2.11]
REL*TC	-0.618*** [-3.16]	-0.619*** [-3.21]	-0.675*** [-3.18]	-0.575*** [-2.87]	-0.671*** [-3.14]	-0.634*** [-2.99]
other bidder		0.141 [0.73]	0.001 [0.00]	0.094 [0.47]	0.037 [0.16]	0.008 [0.04]
cash offer		0.176** [2.00]	0.028 [0.25]	0.048 [0.47]	0.031 [0.27]	0.036 [0.31]
tender offer		0.136 [1.32]	0.034 [0.28]	0.059 [0.54]	0.017 [0.14]	0.000 [0.00]
hostile		0.168 [0.90]	0.275 [1.29]	0.267 [1.40]	0.251 [1.13]	0.269 [1.24]
toehold		0.337 [1.23]	0.132 [0.44]	0.246 [0.86]	0.136 [0.45]	0.152 [0.51]
deal value		-0.066** [-2.15]	-0.093* [-1.85]	-0.111** [-2.55]	-0.093* [-1.85]	-0.093* [-1.85]
acquiror size			0.080** [2.36]	0.085*** [2.74]	0.082** [2.34]	0.086** [2.53]
acquiror FCF			0.762** [2.24]	0.649** [2.02]	0.791** [2.30]	0.784** [2.30]
target m/b			-0.013 [-1.20]	-0.009 [-1.06]	-0.014 [-1.31]	-0.015 [-1.34]
target FCF			-0.717**	-0.719***	-0.665*	-0.617*

			[-2.16]	[-2.67]	[-1.96]	[-1.84]
target leverage			0.099		0.206	0.314
			[0.37]		[0.73]	[1.12]
target institutional			-0.626**		-0.679***	-0.739***
			[-2.42]		[-2.58]	[-2.82]
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	No	No	No	No	Yes (A)	Yes (T)
Observations	467	467	379	430	379	379
R-squared	0.023	0.068	0.127	0.106	0.139	0.152
F-test	3.56**	3.55***	3.34***	3.64***	2.48***	2.75***
F-test (restriction)	8.14***	6.28**	6.15**	5.19**	6.16**	5.42**

Malik (2014) shows that the positive association between target CSR and premium is affected by the acquirer's CSR. Specifically, high CSR acquirers value target CSR more and are more likely to pay a higher premium to high CSR targets. Since McGuire et al. (2012) show that firms headquartered in highly religious counties tend to have lower CSR ratings, the acquirers of religious counties should not be those high CSR acquirers, and our finding should not be caused by the acquirer's CSR. To confirm this conjecture, we control for the acquirer's net CSR score (ACSR) as well as its interactions with the target's net CSR score, and test the following model for hypothesis 1:

$$Premium = \alpha + \beta_1 CSR + \beta_2 REL + \beta_3 REL * CSR + \beta_4 ACSR + \beta_5 ACSR * CSR + Controls \quad (4.3)$$

We calculate ACSR with all six dimensions. Because some acquirers' data is not available on MSCI, after adding ACSR, we lose 70 observations. With all missing control variable dropped, the sample size reduces to 325, including 81 observations (24.92%) defined as REL = 1. Table 4.12 reports the result.

Table 4.12: Test on Hypothesis 1 with the Control for Acquirer CSR

The table presents the result of six OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price one week before the announcement. Test variables are the following: CSR, the target's net CSR score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; REL, a dummy variable that equals to one if the religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*CSR, the interaction between REL and CSR; ACSR, the acquirer's net CSR score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; ACSR\*CSR, the interaction between ACSR and CSR. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one



if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price one week before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 5 and targets' industry (at one-digit SIC-code level) dummies for regression 6. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
CSR	-0.171*	-0.115	-0.127	-0.110	-0.112	-0.125
	[-1.70]	[-1.16]	[-1.15]	[-1.05]	[-1.01]	[-1.11]
REL	0.096	0.095	0.048	0.061	0.046	0.042
	[0.83]	[0.84]	[0.40]	[0.53]	[0.37]	[0.35]
REL*CSR	0.509***	0.477**	0.561***	0.521***	0.553***	0.558***
	[2.62]	[2.50]	[2.74]	[2.64]	[2.68]	[2.69]
ACSR	0.085	0.094	0.010	0.024	-0.024	-0.010
	[1.44]	[1.59]	[0.15]	[0.38]	[-0.34]	[-0.14]
ACSR*CSR	0.111	0.222**	0.160	0.143	0.114	0.142
	[1.11]	[2.21]	[1.42]	[1.33]	[0.99]	[1.25]
other bidder		0.002	-0.110	-0.057	-0.104	-0.087
		[0.01]	[-0.47]	[-0.26]	[-0.43]	[-0.37]
cash offer		0.069	0.064	-0.003	0.042	0.053
		[0.72]	[0.53]	[-0.03]	[0.34]	[0.43]
tender offer		0.215**	0.196	0.206*	0.184	0.188
		[1.98]	[1.55]	[1.79]	[1.41]	[1.46]
hostile		0.448**	0.591**	0.521**	0.599**	0.582**
		[2.20]	[2.59]	[2.47]	[2.53]	[2.48]
toehold		0.223	0.050	0.188	0.022	0.026
		[0.78]	[0.16]	[0.62]	[0.07]	[0.08]
deal value		-0.103***	-0.032	-0.087*	-0.036	-0.042
		[-2.96]	[-0.61]	[-1.88]	[-0.68]	[-0.78]
acquirer size			0.018	0.035	0.027	0.028
			[0.49]	[1.05]	[0.71]	[0.75]
acquirer FCF			0.645	0.660	0.728	0.746
			[1.28]	[1.39]	[1.38]	[1.43]
target m/b			-0.019	-0.019*	-0.022	-0.023
			[-1.36]	[-1.92]	[-1.56]	[-1.63]
target FCF			-0.736**	-0.837***	-0.626*	-0.651*
			[-2.09]	[-2.97]	[-1.75]	[-1.83]
target leverage			-0.011		0.160	0.144
			[-0.04]		[0.54]	[0.48]

target institutional			-0.932***		-1.008***	-0.997***
			[-3.33]		[-3.55]	[-3.49]
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	No	No	No	No	Yes (A)	Yes (T)
Observations	397	397	325	367	325	325
R-squared	0.024	0.093	0.167	0.135	0.182	0.183
F-test	1.82	3.40***	3.40***	3.46***	2.60***	2.63***
F-test (restriction)	3.95**	4.72**	6.19**	5.91**	6.29**	6.09**

In all regressions, REL\*CSR is significant at 5% or 1% level, indicating that our previous results are not affected by acquirers' CSR ratings. Also, ACSR is not significant in any regressions but ACSR\*CSR is positively significant in column 2, consistent with the finding of Malik (2014) that high CSR acquirers pay more for target CSR. We also test hypothesis 2a and 2b by controlling for ACSR and its interactions with TS and TC and obtain unchanged results.

Considering the finding that targets receive a higher premium when selling to acquirers from the same industry (Balajrishnan & Koza, 1993; Montgomery & Hariharan, 1991), in the third test, we control for acquirers and targets' industry relatedness. We construct a dummy variable "horizontal," which equals to one if the acquirer and the target belong to the same industry (at two-digit SIC-code level). The summary statistics shows that 66% of the sample deals are made within the same industry. Table 4.13 presents the result for hypothesis 1.

Table 4.13: Test on Hypothesis 1 with the Control for Horizontal

The table presents the result of six OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price one week before the announcement. Test variables are the following: CSR, the target's net CSR score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; REL, a dummy variable that equals to one if the religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*CSR, the interaction between REL and CSR; horizontal, a dummy variable that equals to one if the acquirer and the target belong to the same industry (at two-digit SIC code level) and zero otherwise. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price one week before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 5 and targets' industry (at one-digit SIC-code level)

dummies for regression 6. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
CSR	-0.128 [-1.45]	-0.108 [-1.24]	-0.187* [-1.96]	-0.132 [-1.45]	-0.195** [-2.03]	-0.198** [-2.06]
REL	0.079 [0.76]	0.088 [0.87]	0.021 [0.19]	0.043 [0.42]	0.047 [0.43]	0.037 [0.34]
REL*CSR	0.450*** [2.66]	0.461*** [2.77]	0.620*** [3.50]	0.495*** [2.92]	0.652*** [3.67]	0.653*** [3.68]
horizontal	0.032 [0.39]	0.029 [0.35]	0.026 [0.28]	0.007 [0.09]	0.066 [0.71]	0.043 [0.45]
other bidder		0.161 [0.85]	-0.018 [-0.08]	0.125 [0.63]	0.000 [0.00]	-0.002 [-0.01]
cash offer		0.081 [0.92]	-0.016 [-0.14]	-0.009 [-0.09]	-0.026 [-0.23]	-0.026 [-0.23]
tender offer		0.179* [1.77]	0.139 [1.19]	0.146 [1.36]	0.131 [1.10]	0.143 [1.21]
hostile		0.378** [2.05]	0.470** [2.27]	0.437** [2.33]	0.465** [2.18]	0.445** [2.10]
toehold		0.264 [0.98]	0.096 [0.33]	0.218 [0.76]	0.070 [0.24]	0.060 [0.21]
deal value		-0.067** [-2.26]	-0.046 [-0.99]	-0.077* [-1.83]	-0.050 [-1.07]	-0.054 [-1.15]
acquirer size			0.030 [0.91]	0.039 [1.27]	0.035 [1.05]	0.040 [1.21]
acquirer FCF			0.680** [2.05]	0.619* [1.95]	0.678** [2.03]	0.675** [2.02]
target m/b			-0.019* [-1.90]	-0.018** [-2.23]	-0.022** [-2.23]	-0.022** [-2.24]
target FCF			-0.666** [-2.07]	-0.840*** [-3.16]	-0.557* [-1.70]	-0.586* [-1.79]
target leverage			-0.006 [-0.02]		0.173 [0.64]	0.169 [0.62]
target institutional			-0.745*** [-2.99]		-0.816*** [-3.24]	-0.798*** [-3.15]
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	No	No	No	No	Yes (A)	Yes (T)
Observations	467	467	379	430	379	379
R-squared	0.017	0.072	0.146	0.121	0.168	0.165
F-test	1.89	3.39***	3.68***	3.91***	2.96***	2.90***
F-test (restriction)	4.86**	6.07**	8.20***	6.30**	9.06***	8.98***

The result shows that our finding does not vary with the control for industry relatedness. Despite not significant, horizontal presents a positive sign, being aligned with the literature. We conduct the same test for hypothesis 2a and 2b, and the results are unchanged.

In the fourth test, we control for the state where the acquirer firm is headquartered. It is possible that in our sample the acquirers of religious counties are clustered in a few highly religious states, and therefore, the previous results might be caused by state-level characteristics such as culture and legal systems. Controlling for state fixed effect allows us to examine whether there is within-variation in the same state. Also, we control for year fixed effect and industry fixed effect for all regressions. Table 4.14 presents the result for hypothesis 1.

Table 4.14: Test on Hypothesis 1 with the Control for Acquirers' State Fixed Effect

The table presents the result of six OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price one week before the announcement. Test variables are the following: CSR, the target's net CSR score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; REL, a dummy variable that equals to one if the religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*CSR, the interaction between REL and CSR. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price one week before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for acquires' state fixed effect and year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 1 – 4 and targets' industry (at one-digit SIC-code level) dummies for regression 5 – 8. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CSR	-0.166*	-0.129	-0.216**	-0.168*	-0.177*	-0.140	-0.212**	-0.173*
	[-1.77]	[-1.39]	[-2.11]	[-1.71]	[-1.90]	[-1.52]	[-2.07]	[-1.77]
REL	0.042	0.059	0.043	0.047	0.050	0.070	0.026	0.061
	[0.32]	[0.45]	[0.29]	[0.35]	[0.37]	[0.53]	[0.18]	[0.46]
REL*CSR	0.490***	0.475***	0.666***	0.547***	0.508***	0.497***	0.658***	0.565***
	[2.75]	[2.69]	[3.48]	[3.00]	[2.85]	[2.81]	[3.46]	[3.10]
other bidder		0.186	-0.107	0.097		0.206	-0.093	0.125
		[0.89]	[-0.44]	[0.44]		[0.99]	[-0.38]	[0.57]
cash offer		0.044	-0.006	-0.037		0.064	-0.011	-0.029

		[0.47]	[-0.05]	[-0.35]		[0.69]	[-0.09]	[-0.27]
tender offer		0.189*	0.115	0.160		0.207*	0.128	0.174
		[1.74]	[0.91]	[1.38]		[1.92]	[1.01]	[1.52]
hostile		0.264	0.432*	0.352*		0.219	0.395*	0.309
		[1.32]	[1.87]	[1.72]		[1.10]	[1.70]	[1.51]
toehold		0.274	0.080	0.214		0.269	0.078	0.183
		[0.97]	[0.27]	[0.73]		[0.95]	[0.26]	[0.62]
deal value		-0.064**	-0.040	-0.070		-0.063**	-0.049	-0.076*
		[-2.03]	[-0.80]	[-1.60]		[-1.99]	[-0.99]	[-1.74]
acquirer size			0.024	0.031			0.033	0.043
			[0.67]	[0.92]			[0.93]	[1.30]
acquirer FCF			0.817**	0.721**			0.820**	0.740**
			[2.28]	[2.13]			[2.29]	[2.19]
target m/b			-0.022**	-0.018**			-0.022**	-0.018**
			[-2.17]	[-2.04]			[-2.14]	[-2.07]
target FCF			-0.675*	-0.837***			-0.684*	-0.866***
			[-1.90]	[-2.92]			[-1.92]	[-3.03]
target leverage			0.268				0.279	
			[0.88]				[0.90]	
target institutional			-0.822***				-0.792***	
			[-3.10]				[-2.95]	
State Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	Yes (A)	Yes (A)	Yes (A)	Yes (A)	Yes (T)	Yes (T)	Yes (T)	Yes (T)
Observations	467	467	379	430	467	467	379	430
R-squared	0.114	0.152	0.238	0.204	0.109	0.149	0.237	0.204
F-test	1.10	1.34*	1.63***	1.60***	1.05	1.30*	1.59***	1.59***
F-test (restriction)	4.48**	5.19**	7.61***	6.00**	4.61**	5.49**	7.53***	6.39**

In Table 4.14, REL\*CSR is significant at 1% level in all regressions, showing that our finding is not a spurious outcome caused by state characteristics. The result suggests that, even in the same state, the acquirers of religious counties evaluate targets' CSR differently from the acquirers of non-religious counties. The tests on hypothesis 2a and 2b also show that our finding is not caused by state characteristics.

In the fifth test, we drop the states that have relatively high religiosity. By doing this, we want to rule out the possibility that the acquirers of religious counties are concentrated in a few highly religious states and the results are caused by the state-level religiosity. A survey conducted by

Gallup International in 2014 provides a rank by religiosity for the U.S. states.<sup>12</sup> We pick the top ten most religious states and drop them from our sample. As South Dakota and West Virginia are not presented in the sample, we drop the other eight states including Alabama (2 obs.), Louisiana (2 obs.), Mississippi (1 obs.), Tennessee (11 obs.), Arkansas (6 obs.), Georgia (9 obs.), Oklahoma (5 obs.), and Texas (55 obs.). The sample is left with 376 observations, with 76 (20.21%) defined as REL = 1. With all missing control variables dropped, the sample is left with 297 observations, with 64 (21.55%) defined as REL = 1. Table 4.15 presents the result for hypothesis 1.

Table 4.15: Test on Hypothesis 1 by Excluding States with High Religiosity

The table presents the result of six OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price one week before the announcement. Test variables are the following: CSR, the target's net CSR score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; REL, a dummy variable that equals to one if the religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*CSR, the interaction between REL and CSR. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price one week before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 5 and targets' industry (at one-digit SIC-code level) dummies for regression 6. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
CSR	-0.106 [-1.08]	-0.051 [-0.53]	-0.158 [-1.44]	-0.088 [-0.85]	-0.150 [-1.37]	-0.155 [-1.41]
REL	0.104 [0.87]	0.108 [0.93]	0.085 [0.67]	0.073 [0.61]	0.090 [0.71]	0.086 [0.69]
REL*CSR	0.458** [2.30]	0.429** [2.20]	0.604*** [2.83]	0.445** [2.20]	0.613*** [2.87]	0.614*** [2.88]
other bidder		0.203 [1.00]	0.009 [0.04]	0.154 [0.71]	0.036 [0.15]	0.025 [0.11]
cash offer		0.111 [1.16]	0.036 [0.29]	0.017 [0.15]	0.028 [0.23]	0.035 [0.28]
tender offer		0.287*** [2.67]	0.277** [2.16]	0.247** [2.12]	0.279** [2.15]	0.288** [2.24]

<sup>12</sup> [https://en.wikipedia.org/wiki/List\\_of\\_U.S.\\_states\\_and\\_territories\\_by\\_religiosity](https://en.wikipedia.org/wiki/List_of_U.S._states_and_territories_by_religiosity)

hostile	0.279	0.265	0.328	0.231	0.222
	[1.38]	[1.16]	[1.58]	[0.96]	[0.95]
toehold	0.386	0.250	0.348	0.323	0.320
	[1.37]	[0.82]	[1.16]	[1.05]	[1.04]
deal value	-0.075**	-0.054	-0.089*	-0.064	-0.070
	[-2.24]	[-1.03]	[-1.93]	[-1.21]	[-1.32]
acquirer size		0.029	0.043	0.034	0.037
		[0.81]	[1.28]	[0.94]	[1.06]
acquirer FCF		0.641*	0.502	0.539	0.574
		[1.83]	[1.51]	[1.51]	[1.63]
target m/b		-0.018*	-0.018**	-0.020**	-0.020**
		[-1.80]	[-2.15]	[-2.00]	[-2.01]
target FCF		-0.473	-0.704**	-0.365	-0.381
		[-1.37]	[-2.52]	[-1.06]	[-1.11]
target leverage		0.140		0.356	0.402
		[0.47]		[1.14]	[1.29]
target institutional		-0.823***		-0.851***	-0.855***
		[-2.93]		[-3.01]	[-3.01]
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	No	No	No	No	Yes (A)
Observations	376	376	297	344	297
R-squared	0.015	0.087	0.163	0.131	0.195
F-test	1.76	3.70***	3.43***	3.62***	2.83***
F-test (restriction)	4.05**	4.91**	5.99**	4.25**	6.45**

The interaction REL\*CSR is significant at 5% level in column 1, 2, and 4 and 1% level in column 3, 5, and 6. Consistent with our previous result, it indicates that our finding is not merely extant for a few highly religious states but rather universal. The results of the tests on hypothesis 2a and 2b also stay the same.

Because not all of our sample are 100-percent deals (i.e., the acquirer purchases 100-percent of the target's share at a time), in the sixth test, we construct a more homogeneous sample by dropping those deals of which the transacted ownership is less than 100-percent. With this restriction, we drop 20 observations. Table 4.16 presents the result for hypothesis 1.

Table 4.16: Test on Hypothesis 1 with 100-Percent Deals Only

The table presents the result of six OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price one week before the announcement. Test variables are the following: CSR, the target's net CSR score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; REL, a dummy variable that equals to one if the

religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*CSR, the interaction between REL and CSR. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price one week before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 5 and targets' industry (at one-digit SIC-code level) dummies for regression 6. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
CSR	-0.125 [-1.40]	-0.109 [-1.25]	-0.177* [-1.85]	-0.123 [-1.34]	-0.183* [-1.90]	-0.186* [-1.93]
REL	0.105 [1.00]	0.111 [1.08]	0.043 [0.40]	0.060 [0.58]	0.070 [0.63]	0.062 [0.56]
REL*CSR	0.423** [2.47]	0.423** [2.52]	0.575*** [3.21]	0.451*** [2.63]	0.598*** [3.32]	0.602*** [3.35]
other bidder		0.130 [0.66]	-0.074 [-0.34]	0.091 [0.44]	-0.058 [-0.26]	-0.056 [-0.25]
cash offer		0.071 [0.81]	-0.014 [-0.12]	-0.013 [-0.13]	-0.026 [-0.23]	-0.025 [-0.22]
tender offer		0.214** [2.02]	0.147 [1.20]	0.150 [1.35]	0.128 [1.03]	0.146 [1.18]
hostile		0.413** [2.10]	0.512** [2.30]	0.471** [2.36]	0.504** [2.18]	0.481** [2.10]
deal value		-0.073** [-2.39]	-0.061 [-1.27]	-0.092** [-2.17]	-0.061 [-1.27]	-0.067 [-1.40]
acquirer size			0.038 [1.14]	0.050 [1.59]	0.041 [1.18]	0.047 [1.40]
acquirer FCF			0.662* [1.96]	0.589* [1.83]	0.680** [2.00]	0.672** [1.98]
target m/b			-0.018* [-1.87]	-0.017** [-2.15]	-0.021** [-2.15]	-0.022** [-2.18]
target FCF			-0.688** [-2.09]	-0.831*** [-3.08]	-0.600* [-1.79]	-0.622* [-1.86]
target leverage			0.048 [0.18]		0.203 [0.74]	0.205 [0.74]
target institutional			-0.766*** [-2.99]		-0.851*** [-3.27]	-0.828*** [-3.16]
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	No	No	No	No	Yes (A)	Yes (T)



Observations	447	447	362	413	362	362
R-squared	0.014	0.067	0.138	0.115	0.158	0.157
F-test	2.05	3.76***	3.77***	4.12***	2.87***	2.86***
F-test (restriction)	4.05**	4.68**	6.74***	5.03**	7.24***	7.30***

Since in this sample all acquirers do not hold any targets' ownership before the deals, we exclude toehold from the controls. In column 1-2, REL\*CSR is significant at 5% level, and in column 3-6, it is significant at 1% level. As such, the result shows that our finding is not affected by the percentage of shares acquired. The results of the tests on hypothesis 2a and 2b give the same evidence.

In the seventh test, we drop those deals with repeated acquirers. As mentioned in the data section, our sample consists 467 deals made by 348 acquirers, which means that some deals are made by the same acquirer. Thus, it is likely that our finding is caused by the firm-level fixed effect of a few acquirers. To address this concern, we use only the first deal made by each acquirer to construct a sub-sample that has no repeated acquirers. The sub-sample consists 84 acquirers of religious counties (24.14%). With all missing control variables dropped, it includes 74 acquirers of religious counties (25.34%). Table 4.17 presents the result for hypothesis 1.

Table 4.17: Test on Hypothesis 1 by Excluding Repeated Acquirers

The table presents the result of six OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price one week before the announcement. Test variables are the following: CSR, the target's net CSR score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; REL, a dummy variable that equals to one if the religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*CSR, the interaction between REL and CSR. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price one week before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for year fixed effect for all regressions and include acquirers' industry (at one-digit SIC-code level) dummies for regression 5 and targets' industry (at one-digit SIC-code level) dummies for regression 6. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
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CSR	-0.160	-0.158	-0.299***	-0.210**	-0.289**	-0.311***
	[-1.53]	[-1.55]	[-2.65]	[-1.97]	[-2.55]	[-2.75]
REL	0.109	0.116	0.047	0.062	0.062	0.046
	[0.94]	[1.01]	[0.39]	[0.54]	[0.51]	[0.38]
REL*CSR	0.504***	0.515***	0.738***	0.582***	0.761***	0.780***
	[2.73]	[2.85]	[3.81]	[3.18]	[3.90]	[3.99]
other bidder		0.375*	0.105	0.349	0.098	0.096
		[1.72]	[0.41]	[1.51]	[0.38]	[0.38]
cash offer		0.051	-0.064	-0.033	-0.088	-0.085
		[0.50]	[-0.51]	[-0.30]	[-0.69]	[-0.67]
tender offer		0.105	0.065	0.064	0.063	0.074
		[0.86]	[0.46]	[0.51]	[0.44]	[0.51]
hostile		0.309	0.511**	0.374*	0.529**	0.515**
		[1.49]	[2.19]	[1.78]	[2.17]	[2.15]
toehold		0.491	0.106	0.221	0.063	0.040
		[1.32]	[0.28]	[0.60]	[0.17]	[0.11]
deal value		-0.070**	-0.094	-0.111**	-0.092	-0.104*
		[-2.05]	[-1.64]	[-2.18]	[-1.60]	[-1.81]
acquirer size			0.068	0.076*	0.073*	0.082*
			[1.60]	[1.96]	[1.68]	[1.92]
acquirer FCF			0.627*	0.644*	0.615*	0.587
			[1.75]	[1.96]	[1.70]	[1.64]
target m/b			-0.008	-0.012	-0.013	-0.012
			[-0.77]	[-1.45]	[-1.21]	[-1.16]
target FCF			-0.826*	-1.068***	-0.707	-0.731
			[-1.82]	[-3.28]	[-1.52]	[-1.58]
target leverage			0.033		0.157	0.174
			[0.10]		[0.50]	[0.54]
target institutional			-0.558*		-0.623**	-0.576**
			[-1.95]		[-2.15]	[-1.97]
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	No	No	No	No	Yes (A)	Yes (T)
Observations	348	348	281	323	281	281
R-squared	0.023	0.078	0.163	0.142	0.191	0.193
F-test	2.52*	3.01***	3.20***	3.69***	2.57***	2.61***
F-test (restriction)	4.99**	5.58**	7.59***	6.09**	8.61***	8.53***

The result provides strong evidence that our previous finding is not caused by firm-level fixed effect, as REL\*CSR is significant at 1% level in all regressions. The results for hypothesis 2a and 2b also remain unchanged.

In the last test, we drop the first, second, and third quartile of the sample based on religiosity to check if our result still holds for the three sub-samples. Since we define REL = 1 for the fourth quartile, we expect our result to hold for all sub-samples.

For the first sub-sample, we exclude deals if the religiosity is below or equal to 0.4671541, thus the non-religious group includes 237 observations, and its sample average religiosity increases to 0.58. Table 4.18 presents the result for hypothesis 1. Due to the reduced sample size, we control for year fixed effect but not industry fixed effect. The result is consistent with previous tests, as REL\*CSR is positively significant at 1% level in all regressions. In the tests on hypothesis 2a and 2b, we obtain similar results.

Table 4.18: Test on Hypothesis 1 by Excluding the First Quartile of Religiosity

The table presents the result of four OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price one week before the announcement. Test variables are the following: CSR, the target's net CSR score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; REL, a dummy variable that equals to one if the religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*CSR, the interaction between REL and CSR. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price one week before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for year fixed effect for all regressions. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)
CSR	-0.167 [-1.51]	-0.149 [-1.36]	-0.191 [-1.60]	-0.159 [-1.39]
REL	0.113 [1.00]	0.116 [1.03]	0.030 [0.25]	0.079 [0.68]
REL*CSR	0.500*** [2.69]	0.500*** [2.71]	0.624*** [3.09]	0.531*** [2.80]
other bidder		0.280 [1.17]	0.000 [0.00]	0.262 [1.05]
cash offer		0.035 [0.32]	-0.060 [-0.42]	-0.027 [-0.22]
tender offer		0.092	0.089	0.118

		[0.74]	[0.60]	[0.89]
hostile		0.242	0.459*	0.299
		[1.04]	[1.77]	[1.26]
toehold		0.243	0.112	0.292
		[0.79]	[0.33]	[0.89]
deal value		-0.090**	-0.031	-0.068
		[-2.40]	[-0.51]	[-1.28]
acquirer size			0.005	0.000
			[0.12]	[0.01]
acquirer FCF			0.828**	0.779**
			[2.14]	[2.14]
target m/b			-0.026*	-0.021**
			[-1.72]	[-1.97]
target FCF			-0.602	-0.707**
			[-1.51]	[-2.28]
target leverage			-0.125	
			[-0.39]	
target institutional			-0.698**	
			[-2.10]	
Year Fixed Effect	Yes	Yes	Yes	Yes
Observations	349	349	288	324
R-squared	0.022	0.064	0.123	0.107
F-test	2.43*	2.43**	2.37***	2.68***
F-test (restriction)	4.76**	5.35**	6.87***	5.84**

The second sub-sample excludes observations with religiosity that falls between 0.4671541 and 0.5826157, and thus, it consists 239 acquirers of non-religious counties, of which the sample average religiosity is 0.53. We repeat the tests and obtain unchanged results. Table 4.19 presents the result for hypothesis 1.

Table 4.19: Test on Hypothesis 1 by Excluding the Second Quartile of Religiosity

The table presents the result of four OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target's stock price one week before the announcement. Test variables are the following: CSR, the target's net CSR score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; REL, a dummy variable that equals to one if the religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*CSR, the interaction between REL and CSR. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target's ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer's total

assets in millions; acquirer FCF, the acquirer's free cash flow calculated by EBITDA divided by total assets; target m/b, the target's market to book ratio based on the target's stock price one week before the announcement; target FCF, the target's free cash flow calculated by EBITDA divided by total assets; target leverage, the target's total long-term debt divided by total assets; target institutional, the target's ownership held by institutional investors before the deal. We control for year fixed effect for all regressions. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)
CSR	-0.202*	-0.177	-0.285**	-0.210*
	[-1.77]	[-1.58]	[-2.31]	[-1.75]
REL	0.105	0.118	0.074	0.067
	[0.91]	[1.04]	[0.61]	[0.57]
REL*CSR	0.488**	0.487***	0.658***	0.511***
	[2.58]	[2.62]	[3.28]	[2.66]
other bidder		0.288	0.100	0.234
		[1.19]	[0.38]	[0.95]
cash offer		0.086	0.001	0.011
		[0.83]	[0.01]	[0.09]
tender offer		0.243*	0.147	0.134
		[1.96]	[1.03]	[1.00]
hostile		0.326	0.368	0.397*
		[1.43]	[1.43]	[1.72]
toehold		0.133	-0.028	0.084
		[0.41]	[-0.08]	[0.24]
deal value		-0.091**	-0.046	-0.105**
		[-2.52]	[-0.83]	[-2.09]
acquirer size			0.022	0.044
			[0.57]	[1.24]
acquirer FCF			0.965**	0.842**
			[2.50]	[2.31]
target m/b			-0.013	-0.010
			[-1.20]	[-0.94]
target FCF			-0.954**	-1.166***
			[-2.25]	[-3.59]
target leverage			-0.061	
			[-0.19]	
target institutional			-1.009***	
			[-3.40]	
Year Fixed Effect	Yes	Yes	Yes	Yes
Observations	351	351	283	320
R-squared	0.021	0.087	0.194	0.147
F-test	2.30*	3.44***	3.99***	3.82***
F-test (restriction)	3.45*	4.25**	5.59**	3.94**

We form the third sub-sample by excluding the observations with religiosity from 0.5826157 to 0.671272, so the non-religious group includes 234 observations with an average religiosity of 0.48. Dropping the third quartile increases the difference of average religiosity between the religious and the non-religious groups, and also makes our assumption more reasonable: it does not make sense to assume a county with a religiosity of 0.68 to be “religious” while another county with a religiosity of 0.66 to be “non-religious.” Table 4.20 presents the result for hypothesis 1.

Table 4.20: Test on Hypothesis 1 by Excluding the Third Quartile of Religiosity

The table presents the result of four OLS regressions. The dependent variable is the natural logarithm of M&A premium in percentage, which is calculated by the target’s stock price one week before the announcement. Test variables are the following: CSR, the target’s net CSR score based on the six dimensions including environment, community, diversity, product, employee relationship, and human rights; REL, a dummy variable that equals to one if the religiosity of the county where the acquirer is headquartered is in the fourth quartile of the sample and zero otherwise; REL\*CSR, the interaction between REL and CSR. Controls for deal characteristics are the following: other bidder, a dummy variable that equals to one if there was more than one bidder and zero otherwise; cash offer, a dummy variable that equals to one if the deal is paid entirely in cash and zero otherwise; tender offer, a dummy variable that equals to one if the deal is tender offer and zero otherwise; hostile bid, a dummy variable that equals to one if the deal is unsolicited and zero otherwise; toehold, a dummy variable that equals to one if the acquirer held more than 5% of the target’s ownership before the deal and zero otherwise; deal value, the natural logarithm of the transaction value in millions. Controls for firm characteristics are the following: acquirer size, the natural logarithm of the acquirer’s total assets in millions; acquirer FCF, the acquirer’s free cash flow calculated by EBITDA divided by total assets; target m/b, the target’s market to book ratio based on the target’s stock price one week before the announcement; target FCF, the target’s free cash flow calculated by EBITDA divided by total assets; target leverage, the target’s total long-term debt divided by total assets; target institutional, the target’s ownership held by institutional investors before the deal. We control for year fixed effect for all regressions. F-test is for the joint test on all regressors. F-test (restriction) is for the linear restriction test on the null hypothesis  $H_0: \beta_1 + \beta_3 = 0$ . \*\*\*, \*\*, \* indicate significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)
CSR	-0.032 [-0.30]	-0.002 [-0.02]	-0.052 [-0.43]	-0.033 [-0.30]
REL	0.011 [0.10]	0.016 [0.15]	-0.055 [-0.50]	-0.026 [-0.25]
REL*CSR	0.361** [2.05]	0.390** [2.27]	0.528*** [2.86]	0.410** [2.32]
other bidder		-0.051 [-0.25]	-0.243 [-1.04]	-0.124 [-0.57]
cash offer		0.006 [0.06]	-0.089 [-0.73]	-0.097 [-0.87]
tender offer		0.149 [1.33]	0.111 [0.86]	0.119 [1.00]
hostile		0.629*** [3.22]	0.743*** [3.34]	0.693*** [3.47]
toehold		0.509 [1.41]	0.280 [0.76]	0.380 [1.04]

deal value	-0.056*	-0.076	-0.094**
	[-1.68]	[-1.49]	[-2.03]
acquirer size		0.041	0.053
		[1.12]	[1.53]
acquirer FCF		0.770**	0.663**
		[2.22]	[2.00]
target m/b		-0.015	-0.016*
		[-1.37]	[-1.91]
target FCF		-0.609*	-0.686**
		[-1.73]	[-2.04]
target leverage		0.229	
		[0.77]	
target institutional		-0.677**	
		[-2.53]	
Year Fixed Effect	Yes	Yes	Yes
Observations	346	346	283
R-squared	0.020	0.091	0.179
F-test	2.18*	3.54***	3.63***
F-test (restriction)	5.40**	7.90***	10.31***
			7.20**

The result is consistent with those of previous tests. REL\*CSR is significant at 5% level in column 1-4 and significant at 1% level in column 3, and neither CSR nor REL is significant. Thus, it confirms our finding for hypothesis 1. The tests on hypothesis 2a and 2b provide further support.

## Chapter 5: Conclusion

A large literature has examined the impact of managers' religiosity on firm decisions, and we extend this line of research to the M&A area. Using a sample of domestic deals in the U.S. announced between 1996 and 2014, we find that the positive association between target CSR and M&A premium is stronger for acquirers headquartered in highly religious counties. While religious managers do not pay a higher premium for targets' CSR strengths, they pay a lower premium for targets' CSR concerns. The result supports our argument that religious managers, due to their more risk-averse personality, are more conscious with targets' potential risks.

One important policy implication is that religion may play a corporate governance role in M&A events. Literature has documented that managers' over-confidence and empire-building tendency can be used to explain value-destroying M&A, while our finding suggests that religious managers are less likely to overpay risky targets, thus reducing the likelihood of a negative return for acquirers' shareholders. This argument is also supported by the finding that firms located in more religious areas are less likely to receive a negative market reaction during their M&A announcement (Chintrakarn et al., 2016). Nevertheless, whether religion reduces agency problem is still unclear, as it is possible that religious managers may pass up risky targets that could create better synergy. Although this is beyond the scope of our study, future studies should look into the effect of managers' religiosity on the choice of targets, and it would provide more insightful understandings on the role of religion in agency theory.

As is the case with other studies, our study has several limitations. First, the sample size is small, and it may lead to a low explaining power of the regression models that we use. Second, due to the unavailability of an alternative CSR data set, we only use the MSCI data, so the result lacks robustness in terms of the measure of targets' CSR performance. Third, our study does not consider the different effects associated with different CSR dimensions. However, we choose not to test individual CSR dimensions because the strength/concern score for a CSR dimension is based on various indicators, and as we cannot differentiate these indicators, the result of such tests would be difficult to interpret. Fourth, the proxy for managers' religiosity is not a precise measure. Despite all the arguments we present, a person's religiosity can still be irrelevant to the environment where he or she lives. Moreover, whether the ratio of total adherents over total population is an appropriate measure for county-level religiosity remains in doubt since it is based



on survey results, which might not be reliable. Therefore, due to these limitations, the result of this study must be interpreted with caution.

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## Appendix A: The Year Distribution and the Industry Distributions

Year	Freq.	Percent	Cum
1996	7	1.50	1.50
1997	6	1.28	2.78
1998	19	4.07	6.85
1999	19	4.07	10.92
2000	10	2.14	13.06
2001	2	0.43	13.49
2002	6	1.28	14.78
2003	5	1.07	15.85
2004	42	8.99	24.84
2005	59	12.63	37.47
2006	50	10.71	48.18
2007	56	11.99	60.17
2008	25	5.35	65.52
2009	39	8.35	73.88
2010	34	7.28	81.16
2011	22	4.71	85.87
2012	31	6.64	92.51
2013	29	6.21	98.72
2014	6	1.28	100.00
Total	467	100.00	

Acquirer Industry	Freq.	Percent	Cum.
Agriculture, Forestry and Fishing	1	0.21	0.21
Mining	32	6.85	7.07
Construction	3	0.64	7.71
Manufacturing	249	53.32	61.03
Transportation and Communications	48	10.28	71.31
Wholesale Trade	11	2.36	73.66
Retail Trade	32	6.85	80.51
Services	91	19.49	100.00
Total	467	100.00	

Target Industry	Freq.	Percent	Cum.
Agriculture, Forestry and Fishing	2	0.43	0.43
Mining	31	6.64	7.07
Construction	3	0.64	7.71
Manufacturing	233	49.89	57.60
Transportation and Communications	45	9.64	67.24
Wholesale Trade	8	1.71	68.95
Retail Trade	25	5.35	74.30
Services	120	25.70	100.00
Total	467	100.00	



## Appendix B: Variables Definitions

Variables	Description
M&A premium	The natural logarithm of purchase price to target stock price premium one week prior to the announcement
CSR	The target's net CSR score calculated by total strengths minus total concerns
TS	The target's total strengths score of the six CSR dimensions including environment, community, diversity, product, employee relationship, and human rights
TC	The target's total concerns score of the six CSR dimensions including environment, community, diversity, product, employee relationship, and human rights
Religiosity	The religiosity of the county where the acquirer is headquartered
REL	Dummy variable "1" indicates that the religiosity is in the fourth quartile of the sample
REL*CSR	The interaction of REL and CSR
REL*TS	The interaction of REL and TS
REL*TC	The interaction of REL and TC
other bidder	Dummy variable "1" indicates that there was more than one bidder
cash offer	Dummy variable "1" indicates that the deal is entirely in cash
tender offer	Dummy variable "1" indicates that the deal is tender offer
hostile bid	Dummy variable "1" indicates that the deal is unsolicited
toehold	Dummy variable "1" indicates that the acquirer held more than 5% of the target's ownership before the deal
deal value	The natural logarithm of the transaction value in millions
acquirer size	The natural logarithm of the acquirer's total assets in millions
acquirer FCF	The acquirer's free cash flow calculated by EBITDA in millions divided by total assets in millions
target m/b	The target's market to book ratio
target FCF	The target's free cash flow calculated by EBITDA in millions divided by total assets in millions
target leverage	The target's total long-term debt in millions divided by total assets in millions
target institutional	The target's ownership held by institutional investors before the deal