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Geographical influences on the relationship between corporate philanthropy and corporate financial performance

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Geographical influences on the relationship between corporate philanthropy and corporate financial performance

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ABSTRACT

Building on stakeholder theory, the paper argues that geographical differences in stakeholders' reactions to corporate philanthropy lead to differences in the relationship between corporate philanthropy and corporate financial performance across regions. When comparing the United States and China and different regions within China, it is found that the differences in stakeholder perceptions (as reflected by sinful industry) and information availability (as indicated by advertising intensity) across regions significantly moderate the corporate philanthropy–corporate financial performance relationship. The findings show that the value of corporate philanthropy varies by region and that stakeholder perception and information availability are two important mechanisms through which corporate philanthropy influences corporate financial performance.

KEYWORDS

corporate philanthropy; corporate financial performance; geographical influences; stakeholder perception; information availability

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INTRODUCTION

Studies adopting a geographical approach to corporate philanthropy (CP) focus on the geographical determinants of philanthropy impacts. In general, this stream of the literature suggests that CP is geographically embedded and that this nature results in differential impacts of CP in different regions (Card, Hallock, & Moretti, 2010; Gautier & Pache, 2015; Marshall, Dawley, Pike, & Pollard, 2018). However, research has paid little attention to how the geographically embedded nature of CP affects firm-level performance. As CP is a strategic choice made by firms that expect an economic return on their investment (McWilliams, Siegel, & Wright, 2006), examining geographical influences on the relationship between CP and corporate financial performance (CFP) is important.

By contrast, studies with unequivocal findings on the CP–CFP relationship are abundant in the strategic management literature. Early studies on the relationship generally revealed a positive relationship between the two concepts (e.g., Galaskiewicz, 1997; Orlitzky, Schmidt, & Rynes, 2003), while more recent studies have found conflicting evidence (Choi & Jung, 2008; Wang, Choi, & Li, 2008). A comparison of the research contexts of extant studies on the CP–CFP relationship reveals that the controversy surrounding the relationship is partly due to the lack of a consideration of geographical influences (Marshall et al., 2018).

Economic geographers have long argued that the variance in firm performance can be explained by regional differences, especially when the drivers of firm performance are bounded by geographical features (MacKinnon, Cumbers, Pike, Birch, & McMaster, 2009; Maskell, 2001). For example, Beugelsdijk (2007) finds that per capita gross regional product and regional knowledge infrastructure affect firm innovation. Similarly, geography plays an important role in the knowledge creation of a firm, as demands for specialized labour and knowledge spillovers are constrained by geographical distances (Jaffe, Trajtenberg, & Henderson, 1993). Following this line of reasoning, we contend that incorporating the geographical dimension into theoretical models of the CP–CFP relationship is crucial.

Specifically, we identify two geographically bounded conditions through which CP affects CFP. As CP does

not affect firms' operations directly, its positive influence on CFP, if any, must come indirectly through increased stakeholder cooperation and support (Berman, Wicks, Kotha, & Jones, 1999). For this general mechanism to work, two specific conditions need to be met. First, stakeholders must respond favourably to philanthropic activities; their perceptions of these activities must be positive (i.e., they applaud and think highly of firms engaging in such activities). Second, stakeholders need to have information about firms' philanthropic activities in order to respond (Hamilton, 2013). Although the fundamental mechanism underlying the CP–CFP relationship is applicable across different settings, we contend that these two conditions facilitating the functioning of this fundamental mechanism are subject to national- and regional-level geographical influences.

Therefore, we examine how different geographical environments (i.e., the United States versus China) influence the likelihood that the two conditions are met and, ultimately, the extent to which they affect the benefits firms obtain from CP. First, *stakeholder perception* of CP varies across geographical regions. Stakeholders in one region may perceive CP quite differently from those in another region (Doh & Guay, 2006; Ioannou & Serafeim, 2012; Ip, 2009; Jackson & Apostolakou, 2010 ; Lo, Egri, & Ralston, 2008). Stakeholder perception of CP is influenced not only by the philanthropic act itself but also by the perceived moral character of the actors who make the charitable donations. Thus, we examine firms operating in a 'sinful' industry, which are often regarded as having poor moral character (Godfrey, Merrill, & Hansen, 2009). The extent to which a business is considered 'sinful' varies significantly across different geographical regions. For example, alcohol or tobacco firms are typically considered sinful in the United States, but not in China (Fauver & McDonald, 2014; Hao, Chen, & Su, 2005). Second, *information availability* for stakeholders is essential for a firm to benefit from CP. When external stakeholders (e.g., suppliers, customers) are not fully aware of the extent to which a firm engages in charitable activities, the firm will not benefit much from engaging in such activities. We focus on the advertising intensity of the firm, as it represents a primary channel through which to enhance visibility (Wang & Qian, 2011). While advertising intensity can help a firm benefit from its CP, its effectiveness depends on the regional infrastructure through which information disseminates. Donation information of firms operating in regions with advanced technology and extensive media coverage is more likely to be visible to outside stakeholders (Wang, Liao, & Deng, 2003) than information of firms in regions with underdeveloped information technology, media censoring and market fragmentation (Wang et al., 2003). Therefore, we examine the CP–CFP relationship and how it varies in the United States and China, two district economies in these aspects. In additional analysis, we further investigate whether subnational differences in stakeholder perception and information availability across different regions in China moderate the CP–CFP relationship.

This research makes several contributions. First, it extends the geographical view of CP by investigating how firm-performance implications of CP vary across geographical regions. While previous research reveals that different regions benefit from CP differently (Gautier & Pache, 2015; Marshall et al., 2018), economic geographers have overlooked the impact of CP on firm-level performance. Filling this research gap is important because, after all, CP is a firm strategy whose financial performance needs to be assessed (McWilliams et al., 2006).

Second, this research offers a more refined geographical view of CP by identifying two mechanisms underlying the CP–CFP relationship and investigating how their moderating effects on this relationship differ by geographical regions. Firms benefit from CP activities when their stakeholders perceive such efforts as genuine corporate social responsibility (CSR) behaviours and when information on such efforts is available to them. Prior research implicitly assumes that these two conditions are context free. In this study, we argue that these two conditions are context specific, as both are associated with the socioeconomic states of regions. Therefore, this study enriches the economic geography literature by showing that the two mechanisms (stakeholder perception and information availability) through which CP affects CFP are bounded by geographical conditions.

Third, this study advances the literature on CP (and corporate social performance in general) by highlighting the geographical conditions of the CP–CFP relationship, which could help explain the inconsistent findings in the literature. The extant literature on the CP–CFP relationship pays scant attention to geographical impacts. By integrating the view of economic geography and strategic management into CP, we partly address the controversy surrounding the CP–CFP relationship.

Finally, we contribute to stakeholder theory, which emphasizes the multidimensionality of stakeholders and their diverging influences on firm performance (Hawn & Ioannou, 2016). We identify stakeholder perception as a key step in the process toward firm performance. Specifically, we examine the moderating role of stakeholder perception in the CP–CFP relationship and unpack the variations in the effect of stakeholder perception under different geographical contingencies. With these findings, this study advances understanding of the role of stakeholder perception by demonstrating that stakeholders form perceptions of a firm's philanthropy through not only the act itself but also the character of the actors who engage in the act.

BACKGROUND

CP is a voluntary expression of firms' commitment to the common good (Gautier & Pache, 2015). The extant literature on the CP–CFP relationship has typically followed either stakeholder theory or agency theory. Following stakeholder theory, researchers argue that CP may positively affect CFP because it helps build valuable moral and reputational capital (Godfrey, 2005; Hamilton, 2013). As

positive moral and reputation capital are likely to induce greater stakeholder participation and cooperation (Mukherjee, Makarius, & Stevens, 2018), CP can positively affect firms' financial performance. By contrast, agency theory predicts that CP is an agency cost for firms and therefore that there is a negative relationship between CP and CFP (Su & Sauerwald, 2018). This is because the managerial intent behind CP is difficult to evaluate; some managers may personally benefit from CP at the expense of firms' financial resources without much penalty.

As with different theoretical perspectives, the empirical evidence on the CP–CFP relationship is mixed. Studies report a positive (Orlitzky et al., 2003), negative (Wright & Ferris, 1997), curvilinear (Brammer & Millington, 2008; Wang et al., 2008) or no relationship (Choi & Jung, 2008). As one step to address the inconsistent findings, we examined the empirical settings of various studies and found that studies conducted in a US setting largely showed support for a positive relationship between the two, while studies in non-US settings, especially emerging market settings, reported a negative, curvilinear or no relationship.

Furthermore, our examination of prior studies on the CP–CFP relationship reveals that the variation in previous findings may be due to geographical differences. A review of the economic geography literature confirms the geographical influence on the impact of CP. First, philanthropy is generally embedded in geographical conditions. Card et al. (2010) show that local-giving has a geographical pattern, such that the number of large corporate headquarters positively relates to the number of local charities. Similarly, Muller and Whiteman (2009) discover that firms are more likely to donate to natural disasters in regions in which they operate. These findings indicate that the expected returns from firms' CP activities are associated with their geographical locations. However, empirical studies have not confirmed how geographical conditions affect firm performance in the context of CP (Gautier & Pache, 2015).

Second, research following the geographical approach examines the geographical determinants of the philanthropy impact. The general conclusion in this literature is that CP has different impacts in different regions, depending on their socioeconomic conditions. For example, Marshall et al. (2018) reveal that CP continuously benefits regions with good economic infrastructures but encounters difficulties in sustaining the benefits in regions with fragile economic conditions. They explicitly call for research to consider geographical features (e.g., local institutions) when investigating the differing impacts of CP.

These insights from the economic geography literature imply that the inconsistencies of the CP–CFP relationship in different contexts may be due to studies ignoring the role of geography in the relationship. Firms are embedded in a broad set of social, economic, political and cultural institutions that are geographically bounded. As corporate philanthropic activities are framed in relation to the social context, they are thus influenced by geographical determinants in such contexts (Marshall et al., 2018). What is missing, however, is a direct, theory-based, systematic comparison of this relationship across different geographical settings.

HYPOTHESES

As CP represents a pure corporate expenditure, it may seem to have a negative effect at first glance on firms' bottom lines (Friedman, 1970). Any positive effect of CP on CFP, therefore, must derive from some indirect mechanism. As discussed previously, CP may affect CFP indirectly through its influence on stakeholder relations (Barnett, 2007; Wang et al., 2008). Therefore, a positive response from stakeholders to corporate philanthropic activities is a key mechanism through which firms can gain financial returns from corporate donations.

For stakeholders to respond to CP positively, two conditions must be met. First, stakeholders must perceive CP as a positive corporate action (Barnett, 2007; Godfrey, 2005). Prior studies have shown that CP can help firms attain positive perceptions from stakeholders, including suppliers, employees, customers, investors, governments and communities (Saiia, Carroll, & Buchholtz, 2003), and eventually elicit cooperation and support from these stakeholders (Berman et al., 1999). For example, customers often respond to CP by increasing their demand for a firm's products or services or by paying premium prices (Bhattacharya & Sen, 2003). In addition, studies have shown that CP can help form better governmental relations (Wang & Qian, 2011) and ease access to credit (Neiheisel, 1993). Moreover, investors, especially managers of socially responsible funds, are more willing to invest in firms known for their CP (Graves & Waddock, 1994; Johnson & Greening, 1999).

Second, for corporate donations to induce stakeholder support and have a positive effect on CFP, stakeholders must be aware of charitable activities; thus, information about CP needs to be made available to them (McWilliams & Siegel, 2001; Wang et al., 2008; Wang & Qian, 2011). The effectiveness of information flow depends on the availability of information channels and the freedom of information transfer. In economies with more advanced information technology, more media exposure and fewer restrictions in information flow, firms can more easily disseminate company information, including information about CP, to their stakeholders (Wang et al., 2003). Thus, it is likely that stakeholders of firms in such institutional settings will be aware of the firms' charitable contributions promptly and accurately (Wang & Qian, 2011). Subsequently, these stakeholders will be in a good position to react to the charitable behaviour by providing greater cooperation and support, leading to improved firm performance.

We contend that both conditions, stakeholder perception and information availability, vary across geographical settings. As a result, firms embedded in different geographical regions may gain significantly different returns from their donation behaviours. While it is difficult to find direct measures of stakeholder perception and

information availability, we can still tease out these effects by examining factors that influence stakeholder perception or information availability. We identify two such factors. The first is whether or not a firm operates in a sinful industry, which has an influence on stakeholder perception. The second is a firm's advertising intensity, which is associated with information availability. We discuss in turn how these two factors influence the CP–CFP relationship and how their influences vary across two major but vastly different economies: the United States and China.

Sinful industry and stakeholder perception

Stakeholder perception of CP is influenced not only by the philanthropic action itself but also by the character of the actors (i.e., firms) making the charitable donations. Many individuals and communities view certain firms, such as alcohol, tobacco and gambling, as sinful, given the addictive nature and undesirable social consequences of their products when consumed excessively (Hong & Kacperczyk, 2009). Sinful industries represent the stocks of companies that deal in tobacco, alcohol or other products deemed harmful (Fauver & McDonald, 2014; Lindgreen, Maon, Reast, & Yani-De-Soriano, 2012). In general, stakeholders are likely to view actions conducted by firms operating in these industries with greater scrutiny and scepticism (Wilson & West, 1981). That is, the motives behind these firms' corporate donations may be perceived as attempts to attenuate the public's negative perception of their products and, thus, as less sincere (Hong & Kacperczyk, 2009).

As a result, CP of firms operating in these industries may be less likely to generate positive moral capital among their stakeholders (Godfrey, 2005). To ensure the value of their CSR activities, firms in sinful industries expend a great deal of effort to enhance the credibility of their CSR commitments through various communication tactics (Du & Vieira, 2012). Therefore, we expect the benefits of corporate-giving by firms operating in sinful industries to be discounted compared with benefits of firms in other industries.

Hypothesis 1: The positive relationship between corporate philanthropy and corporate financial performance is weaker when firms operate in sinful industries.

However, the view of 'sin' varies across different geographical settings with different cultural backgrounds (Wilson & West, 1981). Although the specific contingencies that determine the performance implications of CSR activities in sinful industries vary (Lindgreen et al., 2012), the perception of firms' true intent behind CSR activities matters. We argue that the general perception of these firms in relation to their 'sinfulness' sets the base for the performance implications of CP. To the extent that this general perception of 'sinfulness' differs between geographical regions, the moderating role of the moral character of the firm on the CP–CFP relationship will vary.

More specifically, the alcohol, tobacco and gambling industries are generally perceived as sin stocks in the United States and many Western countries. Hong and Kacperczyk (2009) show that US institutional investors subject to societal norms exclude sin stocks from their investment portfolios, even though sin stocks generally have higher expected returns than their counterparts. However, the widely accepted sinfulness of these industries in the United States is not necessarily so in many Asian countries. That is, these industries are not considered 'sinful' in China. Using data from the World Value Survey (WVS), Fauver and McDonald (2014) create a social sin measure that classifies different countries' perception of tobacco, alcohol and gambling as sinful depending on their social norms. According to their findings, there were 97 total sin stocks in the United States but zero sin stocks in China between 1995 and 2009. The striking difference in the number of sin stocks when applying the same standard highlights the different societal norms regarding sin stocks in these countries. Indeed, tobacco producers are hardly considered sinful in China; after all, there were 350 million smokers in China in 2010, and exchanging cigarettes forms the currency of male networking and friendship in China (Kohrman, 2007). China Tobacco, a state-owned cigarette-maker that accounts for more than 90% of the domestic cigarette sales in China, is also the largest state tax contributor, paying roughly ¥3 billion of tax per day in 2017. The significant tax contribution further discounts the sinfulness view of the tobacco producer. A similar situation holds for alcohol. Alcohol is an important aspect of the Chinese culture. Drinking is socially acceptable, and alcohol plays an integral role in Chinese people's social lives. Corporate leaders may even propagate a 'sin' culture in Chinese society to benefit certain managerial activities, such as earnings management, by reducing the litigation cost of manipulating information (Li, Massa, Xu, & Zhang, 2016).

In summary, tobacco and alcohol companies[1] in the Chinese context are usually not regarded as sinful as they are in the US context. Consequently, the benefits associated with positive perceptions of corporate-giving by sin stocks are likely to be discounted in the United States but not in China. Thus:

Hypothesis 2. The negative moderating effect of sinful industries on the corporate philanthropy–corporate financial performance relationship is stronger in the United States than in China.

Advertising intensity and information availability

As mentioned previously, stakeholders need to be exposed to the information about a firm and its charitable activities to have a meaningful response (McWilliams & Siegel, 2001). Thus, information availability for stakeholders is essential for a firm to obtain potential benefits from CP. However, external stakeholders such as suppliers and customers may not be fully aware of the extent to which a firm engages in charitable activities because they are usually not the direct beneficiaries of such activities (Wang & Qian, 2011). In the case of information opacity and low stakeholder awareness, a firm will not benefit much from engaging in philanthropic activities.

In general, firm advertising has a positive effect on firm visibility, which further attracts more attention from external stakeholders (Stevens & Makarius, 2015; Stevens, Makarius, & Mukherjee, 2015), especially current and prospective customers and potential employees (Brammer & Millington, 2005). Advertising not only increases the public knowledge of a firm and its products but also heightens public awareness of the firm's social activities (Fombrun & Shanley, 1990). For example, McWilliams and Siegel (2001) argue that advertising increases public awareness of firms' socially responsible attributes and helps firms create a reputation of being reliable and honest. Similarly, we expect that as a result of intense advertising, a firm is more likely to be noticed by various stakeholders, and its charitable contributions are more likely to be recognized. In summary, frequent advertising is likely to generate greater stakeholder awareness of the firm and its corporate social behaviours (Adams & Hardwick, 1998). It then follows that firms with more intense advertising will benefit more from CP. Thus:

Hypothesis 3. The positive relationship between corporate philanthropy and corporate financial performance is stronger when a firm's advertising intensity increases.

However, the impact of advertising intensity on the CP–CFP relationship is likely to differ in the United States and China. Information flow is more efficient under advanced information technology and when there are abundant media channels to facilitate the dissemination of information. China lags the United States in information technology and the availability of media channels. Furthermore, information through Chinese media is subject to censorship, restricting the flow of information. Moreover, information flow is more efficient in a unified market than across fragmented markets. Although China is more of a unitary state in constitution, it functions more like a federalist state in many ways. This is because of the historical tradition of provincial autonomy and the decentralization of China's central government since its open-door policy (Walder, 1995). As a result, China is more of a collection of fragmented markets, and policies regulating business environment are often set at the subnational or provincial level. The fragmentation of the Chinese market obstructs the flow of information, causing information to travel more slowly through various communication channels. It also limits the reach of information, with business-related news more often regional than national. As such, with the same advertising efforts, Chinese firms tend to generate slower market response and reach fewer audiences than US firms.

We thus expect that advertising intensity provides more value to US than to Chinese firms in terms of enhancing firm visibility and awareness of corporate philanthropic activities. Subsequently, high advertising intensity enables US firms to gain more benefits from charitable donations than Chinese firms. Thus:

Hypothesis 4. The positive moderating effect of advertising intensity on the corporate philanthropy–corporate financial performance relationship is stronger in the United States than in China.

METHODS

Data and sample

We used the Chinese Stock Market and Accounting Research (CSMAR) database to collect information on Chinese companies. The CSMAR is one of the largest databases on Chinese listed firms and serves as the primary source of information on Chinese stock markets and the financial statements of China's listed firms. We collected information on firms' philanthropic activities from 2003 to 2010, which is the longest possible period we could obtain from the CSMAR. As we were unable to determine whether firms with missing information on philanthropy did not make donations or made donations that were not reported, we limited the sample to firms with data available on donations. After we merged data on philanthropic activities with financial and other firm-level data and removed observations with missing explanatory variables, the final unbalanced sample contained 1674 companies and 6231 firm–year observations.

For the US sample, the two main data sources used were Taft Corporate Giving Directories and the COMPUSTAT database. The Corporate Giving Directories provide information on specific-giving in US dollars, corporate direct gifts, non-monetary gifts and matching gifts in the United States. To ensure valid comparisons between donation data for firms in the United States and China, we also collected the US data starting in 2003 and then continuously for the same eight-year period up to 2010. We then merged this corporate-giving information with the COMPUSTAT database to obtain financial information and other firm-level variables. After we merged the data, the final sample consisted of 524 companies and 3175 firm–year observations over the sample period.[2]

Measures

- *CFP*: because of irregularities in China's stock markets, market-based measures of financial performance, such as Tobin's *q*, market-to-book value, etc,, are generally not considered valid measures of firm performance (Allen, Qian, & Qian, 2005). Thus, studies on Chinese firms often resort to accounting measures, which are considered more reliable. Following prior studies, we adopted one typical accounting measure of firm performance: return on assets (ROA). ROA is calculated as net income over total assets. Because there is often a lag between corporate-giving and its impact on CFP, we evaluated the effect of corporate-giving on ROA following the year in which charitable contributions were made.
- *Corporate-giving*: we assessed corporate-giving as the amount of a firm's charitable contributions in a given year. We converted Chinese yuan into US dollars for

comparison purposes, using the year-end exchange rate. As this variable was highly skewed, we applied log-transformation to the total-giving amounts.

- *US versus Chinese firms*: we used a dummy variable to represent this variable. In particular, we coded Chinese firms as 1 and US firms as 0.
- *Sinful industry*: following Hong and Kacperczyk (2009), we identified this variable as whether or not a firm operated in one of the industries collectively known as the 'Triumvirate of Sin' – namely, alcohol, tobacco and gambling. Both the US Securities and Exchange Commission (SEC) and the China Securities Regulatory Commission (CSRC) use the same standard to define alcohol and tobacco industries (gambling firms are forbidden in mainland China). In particular, the variable takes the value of 1 if a firm operates in one of these three industries, and 0 otherwise.
- *Advertising intensity*: following previous studies (e.g., McWilliams & Siegel, 2001), we calculated a firm's advertising intensity as the ratio of selling, general and administrative to sales. This measure captures a firm's willingness to spend on marketing and selling-related activities in an effort to disseminate information to stakeholders.
- *Control variables*: firm age, size, debt ratio, slack resources and lagged CFP served as controls in all models. We measured *firm age* as years since a firm's initial public offering. Previous research has established that *firm size* is an important factor in the relationship between CSR and CFP (Orlitzky & Benjamin, 2001). Given the evident positive skewness in firm size, the natural logarithm of total assets served as a proxy for firm size. We measured *debt ratio* as the ratio of long-term debt to total assets. Previous studies have also included *slack resource* in the CSR–financial performance relationship (Waddock & Graves, 1997). Following Bourgeois (1981) and Wang et al. (2008), we measured slack as current assets divided by current liabilities. To reduce the serial correlation of errors often present in pooled time-series cross-sectional panel data, we followed prior research and included *lagged financial performance* in the model. Moreover, to control for potential differences in philanthropic activities among industries, we included industry dummies in all models of both samples.

Modelling procedures

We used random-effects generalized least squares (GLS) regression analysis for hypotheses testing. Firm fixed-effects models are not appropriate in this context for two reasons. First, the key explanatory variable 'sinful firms' does not have within-firm variations across time. This makes firm fixed-effects estimations infeasible. Second, fixed-effects models typically produce biased estimates when the period is relatively short (Heckman, 1979). While our sample period covers eight years (2003–10), many firms have fewer than eight observations.

Furthermore, as our sample was confined to firms that engaged in charitable-giving, sample selection might be a concern. It is possible that factors that affect whether firms give donations are correlated with financial performance. In such a case, the independent variable (corporate-giving) would be correlated with the error term, and ordinary least squares (OLS) or GLS estimates of those coefficients would be biased. To correct such bias, we conducted a two-stage Heckman selection model. In the first stage, we applied a probit model to the entire sample of firms, including firms with and without donation information. We then calculated the inverse Mills ratio on the basis of the probit model. In the second stage, we estimated the dependent variable with the inverse Mills ratio included (Heckman, 1979). This use of the two-stage Heckman models is comparable with previous research in this area (e.g., Brammer & Millington, 2008; Wang et al., 2008; Wang & Qian, 2011).

RESULTS

Tables 1 and 2 present descriptive statistics and correlation matrices for the main variables used in the study. Year and industry dummies are used but not reported in the tables for brevity. The means and standard deviations (SD) of the variable *corporate-giving* are comparable between the Chinses and US samples. Significant intercorrelations occurred among some variables; therefore, we further estimated the potential multicollinearity problem by computing variance inflation factors (VIFs). Specifically, in the Chinses sample, the maximum VIF obtained in any of the models was 1.47 (firm size), and the mean VIF was around 1.14. In the US sample, the maximum VIF was 1.59 (firm size), and the mean VIF was around 1.28. All these are substantially below the rule-of-thumb cut-off of 10 for regression models (Kleinbaum, Kupper, & Muller, 1988). Therefore, multicollinearity was not a serious issue in our results.

First-stage corporate-giving choice estimates

Table 3 presents the results of the first-stage Heckman selection model, which is a probit regression of corporate-giving choice and factors that may affect whether a firm decides to make donations. The dependent variable is the dummy variable *corporate-giving choice*, which equals 1 if the firm engaged in corporate-giving, and 0 otherwise. Model 1 for both the Chinese and US samples is the baseline model, including an intercept term and measures of firm-level variables. Model 2 includes industry-level-giving and industry dummies as additional factors anticipated to affect charitable-giving choice. As Table 3 shows, the coefficients on firm size are positive for both the Chinese and US samples, consistent with our prediction that larger firms are more likely to engage in charitable-giving. The coefficients on slack resources and debt ratio show similar impacts on the probability of giving for both samples. However, we find different signs for advertising intensity across the two samples. In the Chinese sample, advertising intensity has a negative and significant impact on corporate-giving choice, while the opposite is true for the US sample. One reason for this difference might be that,

Table 1. Descriptive statistics and correlation for the Chinese sample.

	Mean	SD	1	2	3	4	5	6	7	8
Dependent variable at t + *1*										
1. ROA	0.04	0.13								
Independent variables at t										
2. ROA	0.04	0.09	0.08*							
3. Age	11.68	4.38	−0.01	−0.05*						
4. Firm size	19.82	1.12	0.01	0.07*	0.15*					
5. Debt ratio	0.06	0.10	−0.03*	−0.05*	0.11*	0.34*				
6. Slack resources	0.96	0.87	−0.00	−0.20*	0.13*	0.12*	0.16*			
7. Sinful industry	0.02	0.12	0.01	0.01	0.01	0.00	−0.04*	−0.03*		
8. Advertising intensity	0.06	0.08	0.02	0.01	−0.03*	−0.16*	−0.16*	−0.02	0.07*	
9. Corporate-giving	10.60	1.89	0.08*	0.15*	0.06*	0.47*	0.10*	0.00	0.00	−0.01

Notes: $N = 6231$.
ROA, return on assets.
*Significant at $p < 0.05$.

given their relatively early stage of development, Chinese listed firms face greater financial constraints. As a result, Chinese firms may defer corporate-giving as advertising expenses increase.

Second-stage financial performance estimates

Hypothesis 1 predicts that the relationship between CP and CFP is weaker if firms operate in sinful industries. In Table 4, model 1 (the baseline model) includes corporate-giving and other firm-level variables. Model 2 adds an interaction between corporate-giving and a sinful industry. As model 2 shows, the coefficient for the interaction effect of corporate-giving and a sinful industry on ROA is negative and marginally significant ($p < 0.10$), lending partial support to Hypothesis 1.

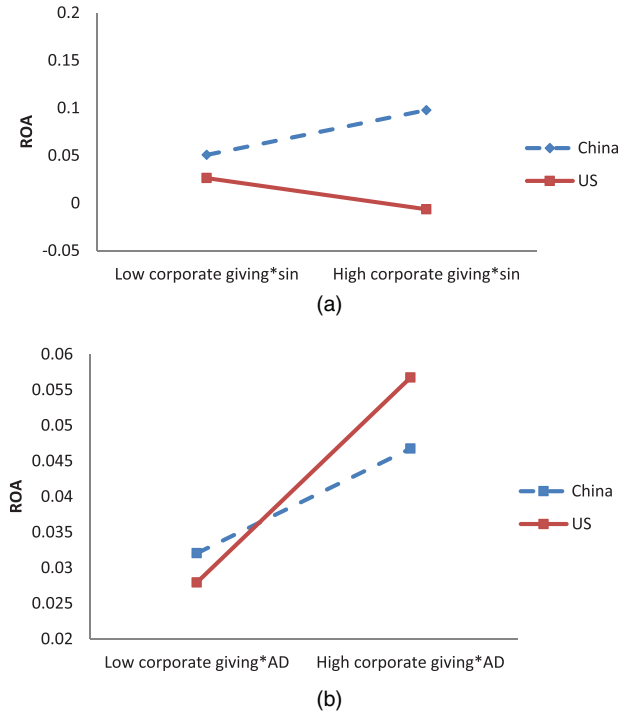

Figure 1. (a) Interaction effect of corporate-giving, sinful industry and country on return on assets (ROA); and (b) interaction effect of corporate-giving, advertising intensity and country on ROA.

Hypothesis 2 predicts that the negative moderating effect of a sinful industry is stronger for US firms than Chinese firms. To test Hypothesis 2, model 3 in Table 4 adds a three-way interaction among corporate-giving, sinful industry and country (China). As the model shows, the coefficient for the three-way interaction effect of corporate-giving, sinful industry and country on ROA is significantly positive ($p < 0.01$), in strong support of Hypothesis 2. Furthermore, we conducted split-sample analyses for the Chinese and US sample, respectively. As model 4 in Table 5 shows, in the US sample, the coefficient of the interaction effect of corporate-giving and sinful industry on ROA is negative and significant ($p < 0.01$), while it is non-significant for the Chinese sample (model 4). We conducted a Chow test to examine whether the coefficients of the interaction terms between corporate-giving and sinful industry for the two subgroups were significantly different. The test shows that the moderating effects of sinful industry on the relationship between corporate-giving and ROA are significantly different for the Chinese and US samples (ROA: Prob > F = 0.6990). Thus, Hypothesis 2 is supported.

Hypothesis 3 predicts that advertising intensity will positively moderate the relationship between CP and CFP. The positive and significant coefficient of the interaction between corporate-giving and advertising intensity in model 4 in Table 4 is consistent with our prediction. In the split-sample analyses, the coefficients of the interaction between corporate-giving and advertising intensity in model 5 in Table 5 are both positive and significant for the Chinese and US samples. Thus, Hypothesis 3 is strongly supported.

Hypothesis 4 predicts that the positive moderating effect of advertising intensity on the CP–CFP relationship

Table 2. Descriptive statistics and correlation for the US sample.

	Mean	SD	1	2	3	4	5	6	7	8
Dependent variable at t + *1*										
1. ROA	0.04	0.08								
Independent variables at t										
2. ROA	0.04	0.08	0.33*							
3. Age	38.30	17.52	0.05*	0.05*						
4. Firm size	8.92	1.93	−0.05*	−0.04*	0.07*					
5. Debt ratio	0.20	0.14	−0.09*	−0.14*	0.17*	0.04*				
6. Slack resources	0.62	0.51	0.03	0.02	0.18*	−0.06*	0.29*			
7. Sinful industry	0.01	0.08	0.03	0.03	−0.01	0.05*	0.14*	0.00		
8. Advertising intensity	0.17	0.15	0.09*	0.11*	−0.04*	−0.07*	−0.18*	−0.11*	−0.02	
9. Corporate-giving	14.04	1.80	0.13*	0.13*	0.14*	0.47*	−0.03	0.06*	0.01	0.04*

Notes: $N = 3{,}175$.
ROA, return on assets.
*Significant at $p < 0.05$.

is stronger in the United States than in China. The split-sample regressions show that the coefficient in the US sample is larger than that in the Chinese sample (model 5 in Table 5). These results suggest that Chinese firms with high advertising intensity do not benefit as much from CP as their US counterparts. Thus, Hypothesis 4 is supported. We again conducted a Chow test to examine whether the coefficients of the interactions for the two subgroups are significantly different. The test shows that the moderating effects of advertising intensity on the CP–

Table 3. Probit estimates for the Heckman first-stage sample selection model: regression of corporate-giving choice at *t* on firm and industry predictors at $t - 1$.

	Combined data set		China		United States	
Variables	**M1**	**M2**	**M1**	**M2**	**M1**	**M2**
Intercept	−0.99***	−1.86***	−3.22***	−3.36***	−0.55***	−0.24*
	(0.07)	(0.15)	(0.27)	(0.32)	(0.104)	(0.12)
ROA	0.01***	0.01	−0.00	−0.00	−0.16	−0.30
	(0.00)	(0.00)	(0.00)	(0.00)	(0.09)	(0.19)
Firm age	0.03***	0.03***	−0.01***	−0.03***	0.04***	0.04***
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Firm size	0.05***	0.08***	0.20***	0.20***	0.02*	0.05***
	(0.00)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)
Debt ratio	−0.45***	−0.50***	−0.25*	−0.14	−0.64***	−0.64***
	(0.10)	(0.10)	(0.13)	(0.13)	(0.13)	(0.13)
Slack resources	−0.02***	−0.02***	−0.02***	−0.02***	−0.09***	−0.14***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.04)
Advertising intensity	−0.01**	−0.01**	−0.02**	−0.01*	0.12*	0.33**
	(0.01)	(0.00)	(0.00)	(0.01)	(0.07)	(0.11)
Industry-level-giving		0.03***		0.23***		0.07*
		(0.00)		(0.01)		(0.04)
Industry dummies		Included		Included		Included
Observations	14,642	14,642	10,435	10,435	4207	4207
Log-likelihood (LL)	−9273.3	−8393.2	−6265.8	−5500.5	−2810.1	−2450.4
$\Delta\chi^2$		880.1		765.3		359.7

Notes: Standard errors are shown in parentheses.
ROA, return on assets.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table 4. Random-effects generalized least squares (GLS) regression results on a combined data set: regression of corporate ROA at $t + 1$ on firm and industry predictors at t.

Variables	M1	M2	M3	M4	M5
Intercept	0.03*	0.03*	0.02*	0.04**	0.03*
	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)
Lagged ROA	0.09***	0.10***	0.06***	0.10***	0.09***
	(0.06)	(0.01)	(0.01)	(0.01)	(0.06)
Firm age	−0.00***	−0.00*	−0.00*	−0.00*	−0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Firm size	−0.00	−0.01	0.00	−0.01	−0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Debt ratio	−0.05***	−0.05***	−0.04***	−0.04**	−0.05**
	(0.02)	(0.01)	(0.02)	(0.01)	(0.01)
Slack resources	0.01	0.01*	0.01	0.01*	0.01
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Inverse Mills ratio	−0.01	−0.01	0.02	−0.01	−0.01
	(0.02)	(0.01)	(0.03)	(0.01)	(0.02)
Sinful industry	0.02**	−0.03	0.01	0.02	0.18***
	(0.01)	(0.04)	(0.01)	(0.00)	(0.06)
Advertising intensity	0.03***	0.02**	−0.07**	−0.00**	0.03***
	(0.01)	(0.01)	(0.03)	(0.00)	(0.01)
China	0.06***	0.07*	−0.00	−0.07	0.09***
	(0.01)	(0.01)	(0.04)	(0.05)	(0.03)
Corporate-giving	0.01***	0.01***	0.00***	0.01***	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Corporate-giving × Sinful		−0.01*	−0.01**		
		(0.00)	(0.00)		
Corporate-giving × China			0.00		−0.00
			(0.00)		(0.00)
China × Sinful			−0.32***		
			(0.08)		
Corporate-giving × Sinful × China			0.02***		
			(0.01)		
Corporate-giving × Advertising intensity				0.02***	0.04***
				(0.00)	(0.01)
China × Advertising intensity					0.10**
					(0.04)
Corporate-giving × Advertising intensity × China					−0.02*
					(0.01)
Observations	9406	9406	9406	9406	9406
Firms	2198	2198	2198	2198	2198
F-value	11.57***	11.862***	14.17***	11.902***	12.30***
R^2	0.02	0.02	0.03	0.03	0.02
ΔR^2		0.00	0.01	0.00	0.00

Notes: Standard errors are shown in parentheses. All models include industry and year dummies, not reported.
ROA, return on assets.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

CFP relationship are significantly different for the Chinese and US samples (ROA: Prob > $F = 0.3906$).

To gain additional insights, we have further drawn the interaction plots for the models with significant results, which again show a pattern consistent with our predictions (Figure 1). Figure 1(a) showed that the relationship between corporate-giving and financial performance becomes negative when the firm operates in a 'sinful'

Table 5. Estimates for Heckman second-stage financial performance models: regression of corporate return on assets (ROA) at $t + 1$ on firm and industry predictors at t.

	Chinese sample					US sample				
Variables	**M1**	**M2**	**M3**	**M4**	**M5**	**M1**	**M2**	**M3**	**M4**	**M5**
Lagged ROA	0.14***	0.14***	0.14***	0.14***	0.14***	0.30***	0.29***	0.27***	0.26***	0.28***
	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.02)	(0.02)	(0.10)	(0.10)	(0.10)
Firm age	0.00	0.00	0.00	0.00	0.00	0.00***	0.00***	0.00*	0.00	0.00*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Firm size	0.00	0.00	0.00	0.00	0.00	0.00**	0.00**	0.01***	0.01***	0.01***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Debt ratio	−0.06***	−0.06***	−0.05***	−0.05***	−0.05***	−0.07***	−0.07***	−0.06**	−0.06**	−0.06**
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)
Slack resources	0.01	0.01	0.01	0.02	0.01	0.00	0.00	(0.00)	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)
Inverse Mills ratio	−0.06*	−0.06*	−0.06*	−0.06*	−0.06*	0.06**	0.07***	0.06	0.03	0.05
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)
Sinful industry		0.01	0.01	0.01	−0.05		0.04*	0.03***	0.04***	0.18***
		(0.01)	(0.01)	(0.01)	(0.05)		(0.02)	(0.01)	(0.01)	(0.05)
Advertising intensity		0.04	0.03	0.05***	0.03		0.03***	0.03**	0.02	0.03**
		(0.03)	(0.03)	(0.02)	(0.03)		(0.01)	(0.01)	(0.01)	(0.01)
Corporate-giving			0.00***	0.00***	0.00***			0.01***	0.01***	0.01***
			(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)
Corporate-giving × Sinful industry				0.01					−0.01***	
				(0.01)					(0.00)	
Corporate-giving × Advertising intensity					0.02*					0.04***
					(0.01)					(0.01)
Intercept	0.08	0.07	0.10	0.09	0.10	−0.03	−0.04	−0.09**	−0.05	−0.08**
	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)
Observations	6231	6231	6231	6231	6231	3175	3175	3175	3175	3175
Firms	1674	1674	1674	1674	1674	524	524	524	524	524
R^2	0.01	0.01	0.01	0.02	0.01	0.54	0.55	0.56	0.56	0.56
ΔR^2		0.00	0.00	0.01	0.00		0.01	0.01	0.00	0.00

Notes: Standard errors are shown in parentheses. All models include industry and year dummies, not reported.
ROA, return on assets.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

industry for the US sample, but that relationship turns positive when the firm operates in a 'sinful' industry for the Chinese sample. Figure 1(b) shows that while advertising intensity positively moderates the relationship between CP and financial performance for both the Chinese and US samples, the moderating effect of advertising intensity is more positive for the US sample than the Chinese sample.

Subnational analyses

The results from the cross-national analyses confirm Hypotheses 2 and 4. We demonstrate that the two mechanisms (stakeholder perception and information availability) through which CP affects CFP vary in the two countries. We argue that these mechanisms similarly affect the CP–CFP relationship at the subnational level, particularly in countries with heterogeneous regions. As noted, China has highly unbalanced developments and fragmented markets (Li, Song, & Wu, 2015). Therefore, we applied the subnational analyses to the Chinese context. The highest level of administrative division in China is the province, which represents typically regional divisions in terms of regulations, economies, and cultures; thus, the subnational analysis is at the provincial level.

Moderating role of sinful industry

We argued previously that stakeholder acceptance of sinful industries is positively related to the consumption of these 'sinful' products in regions. Therefore, we collected provincial-level data on tobacco and alcohol consumption in China. The data on provincial tobacco consumption came from China Tobacco. We calculated tobacco consumption as China Tobacco's yearly total cigarette sales to a province. We split the sample into two groups according to whether the province in which the firm was located had national cigarette sales above or below the median. We then applied the same analyses as in the main analyses (Table 5) to these two subsamples. Table 6 summarizes the regression results. Models 3 and 6 in Table 6 show that the coefficient of the moderation between corporate-giving and sinful industry is positive and significant in the sample with *above-median* tobacco consumption but non-significant in the sample with *below-median* tobacco consumption.

The other measure of stakeholder perception of sinful industry at the provincial level is alcohol consumption. We obtained the data from the China Statistical Yearbook. We calculated the alcohol consumption by the average household purchases of alcohol in a year in the province. We similarly split the sample into two groups according to whether the country-level alcohol consumption in the province in which the firm was located was above or below the median. We applied the same analyses as in the main analyses (Table 5) to these two subsamples. Table 7 contains the regression results. Model 3 shows that the coefficient of the moderation between corporate-giving and sinful industry is positive and marginally significant in the sample with *above-median* alcohol consumption but non-significant in the sample with *below-median* alcohol consumption.

Hypothesis 2 states that the negative moderating effect of a sinful industry on the CP–CFP relationship is stronger in the United States than in China because tobacco and alcohol are normally not considered sinful in China. Applying the same logic to the subnational context, we argue that stakeholders in regions with high consumption levels of tobacco and alcohol tend to perceive sinful industries as less 'sinful', and therefore the negative moderating role of sinful industry on the CP–CFP relationship will be weaker (or have a stronger positive moderating role). The results of the subnational analyses in Tables 6 and 7 suggest that when making corporate donations, sinful firms in provinces with greater tobacco and alcohol consumption are perceived as more 'sincere' than their counterparts in provinces with lesser tobacco and alcohol consumption. Thus, the discounted benefits of corporate-giving by firms in a sinful industry are lesser in regions with strong stakeholder perceptions of a sinful industry. These results provide further support for Hypothesis 2.

Moderating role of advertising intensity

We argue that firm advertising intensity positively moderates the CP–CFP relationship and that this moderating effect is stronger in regions with high levels of information technology. This is because awareness of information in firm advertising depends on the local information technology or infrastructure. Information on firms' corporate-giving is more likely to be available to stakeholders in regions with high levels of information technology.

We collected provincial information technology levels from the China Statistical Yearbook, which publishes the most comprehensive data of provincial developments in information infrastructure over the years. We selected five components relevant to the information available to stakeholders: the total number of landline telephone users, the total number of mobile phone users, the total number of radio channels, the total number of television channels and the total number of internet users. We then standardized and summed the five variables to create a composite measure of provincial information technology. We split the sample into two groups according to whether the country-level information technology in the province in which the firm was located was above or below the median. We then applied the same analyses as in the main analyses (Table 5) to these two subsamples. Table 8 contains the regression results.

Hypothesis 4 argues that the moderating role of advertising intensity on the CP–CFP relationship is stronger in the United States than in China because advanced information technology and freedom-of-information transfer help firms' advertising campaigns reach more audiences and, in turn, enhance firm visibility and public awareness of corporate philanthropic activities. Applying the same rationale to the subnational context, we contend that firms' advertising efforts in regions with advanced information technology are more effective in enhancing firm visibility and public awareness of their corporate-giving, thus increasing the moderating effect of advertising intensity on the CP–CFP relationship. Models 3 and 6 in Table

Table 6. Subnational analysis: the moderating role of sinful industry in Chinese provinces with high and low levels of tobacco consumption.[a]

	In provinces with below-median tobacco consumptions			In provinces with above-median tobacco consumptions		
Variables	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**
Lagged ROA	0.02	0.01	0.01	0.00	0.00	0.00
	(0.04)	(0.04)	(0.04)	(0.00)	(0.00)	(0.00)
Firm age	−0.00	−0.00	−0.00	−0.00*	−0.00*	−0.00*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Firm size	0.00	−0.00	−0.00	0.00	−0.00	−0.00
	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)
Debt ratio	−0.05	−0.04	−0.04	−0.07**	−0.07**	−0.07**
	(0.04)	(0.04)	(0.04)	(0.02)	(0.02)	(0.02)
Slack resources	−0.03***	−0.03***	−0.03***	−0.06***	−0.01***	−0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Sinful industry	0.04	0.04	0.03	0.00	0.00	−0.06*
	(0.03)	(0.03)	(0.11)	(0.02)	(0.01)	(0.03)
Advertising intensity	0.040					
	(0.04)	0.04				
	(0.04)	0.04	−0.20***	−0.21***	−0.22***	
		(0.04)	(0.03)	(0.03)	(0.03)	
Provincial population	0.00	0.00	0.00	0.00*	0.00*	0.00*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Inverse Mills ratio	0.03	0.03	0.03	0.02	0.02	0.02
	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)
Corporate-giving		0.01*	0.01*		0.01***	0.01***
		(0.00)	(0.00)		(0.00)	(0.00)
Corporate-giving × Sinful			0.00			0.01*
			(0.01)			(0.00)
Intercept	−0.00	0.03	0.03	0.08	0.09	0.09
	(0.14)	(0.14)	(0.14)	(0.07)	(0.07)	(0.07)
Observations	3117	3117	3117	3114	3114	3114
Firms	837	837	837	837	837	837
R^2	0.03	0.04	0.04	0.06	0.09	0.09
ΔR^2		0.01	0.00		0.03	0.00

Notes: [a]Significance at ***$p < 0.01$, **$p < 0.05$ and *$p < 0.1$; standard errors are shown in parentheses.
All models included industry and year dummies, not reported.
ROA, return on assets.

8 show that the coefficient of the moderation between corporate-giving and advertising intensity is negative and significant in the sample with *below-median* information technology but positive and significant in the sample with *above-median* information technology. These results suggest that the positive moderating effect of advertising intensity on the CP–CFP relationship is only valid in regions with advanced information technology or infrastructure, lending support to the mechanism suggested in Hypothesis 4.

DISCUSSION

This study examines geographical influences on the relationship between CP and CFP by comparing the differences between two countries (the United States and China) with very different institutional environments and different regions within China. We identify two channels, stakeholder perception and information availability, through which CP influences CFP. We then theorize the regional differences in these two mechanisms and how such influences affect the CP–CFP relationship. We find that the CP–CFP relationship is weak for US firms but not for Chinese firms operating in 'sinful' industries. By contrast, advertising intensity has a stronger positive moderating effect on the CP–CFP relationship for US firms than for Chinese firms. Our analysis of subnational regions in China provides further evidence that these geographically bounded mechanisms moderate the CP–CFP relationship.

Table 7. Subnational analysis: the moderating role of sinful industry in Chinese provinces with high and low levels of alcohol consumption.[a]

	In provinces with below-median alcohol consumptions			In provinces with above-median alcohol consumptions		
Variables	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**
Lagged ROA	0.00	0.00	0.00	0.10***	0.10***	0.10***
	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)
Firm age	−0.00	−0.00	−0.00	−0.00*	−0.00*	−0.00*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Firm size	0.00	−0.00	−0.00	0.01*	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Debt ratio	−0.08*	−0.07*	−0.07*	−0.02	−0.02	−0.02
	(0.04)	(0.04)	(0.04)	(0.02)	(0.02)	(0.02)
Slack resources	−0.02***	−0.02***	−0.02***	−0.01***	−0.01***	−0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Sinful industry	0.01	0.01	−0.01	0.06***	0.06***	−0.01
	(0.02)	(0.02)	(0.07)	(0.02)	(0.02)	(0.04)
Advertising intensity	−0.01	−0.04	−0.04	0.01	0.01	0.01
	(0.04)	(0.04)	(0.04)	(0.02)	(0.02)	(0.02)
Provincial population	−0.00	−0.00	−0.00	0.00*	0.00*	0.00*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Inverse Mills ratio	−0.01	−0.01	−0.01	0.04*	0.04*	0.04*
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Corporate-giving		0.01***	0.01***		0.00***	0.00***
		(0.00)	(0.00)		(0.00)	(0.00)
Corporate-giving × Sinful			0.00			0.01*
			(0.01)			(0.00)
Intercept	0.08	0.12	0.12	−0.09	−0.07	−0.07
	(0.09)	(0.10)	(0.10)	(0.08)	(0.08)	(0.08)
Observations	3090	3090	3090	3141	3141	3141
Firms	837	837	837	837	837	837
R^2	0.03	0.03	0.04	0.12	0.13	0.13
ΔR^2		0.00	0.01		0.01	0.00

Notes: [a]Significance at ***$p < 0.01$, **$p < 0.05$ and *$p < 0.1$; standard errors are shown in parentheses.
All models included industry and year dummies, not reported.
ROA, return on assets.

Theoretical implications

The conceptual model and empirical findings from this study have important implications for the literature on economic geography. Economic geographers emphasize the geographically embedded nature of CP and the differential impacts of CP in different geographical regions (Gautier & Pache, 2015; Marshall et al., 2018). However, scant research has explored how the geographically embedded nature of CP affects firm-level performance. This gap is worthy of academic efforts because firms often become involved in philanthropic activities to gain benefits. While regional differences in CP remain (Card et al., 2010; Muller & Whiteman, 2009), little is known about how these geographical disparities affect the performance implications of CP. To fill this research gap, we identify two geographically bounded mechanisms that are responsible for the different effects of CP on CFP: stakeholder perception and information availability. In doing so, we provide comprehensive understanding on the CP–CFP relationship by theorizing the mechanisms through which CP influences CFP and how variations in different levels of institutions affect the functioning of these mechanisms. The identification of stakeholder perception and information availability as two mechanisms underlying this relationship echoes Lagendijk's (2007) idea that regions are constructed both discursively and materially through a variety of processes and thereby advances theory-building in the economic geography literature.

Moreover, in the area of economic geography, few studies have compared a developed economy and an emerging economy. By closely assessing variations in stakeholder perceptions and information availability across the United States and China, we show how geographical

Table 8. Subnational analysis: the moderating role of advertising intensity in Chinese provinces with developed and underdeveloped information technology.[a]

	In provinces with below-median information technology			In provinces with above-median information technology		
Variables	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**
Lagged ROA	0.08**	0.07**	0.07**	0.00	0.00	0.00
	(0.03)	(0.03)	(0.03)	(0.00)	(0.00)	(0.00)
Firm age	−0.00	−0.00	−0.00	−0.00**	−0.00**	−0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Firm size	0.00	−0.00	−0.00	0.01***	0.01*	0.01*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Debt ratio	−0.05	−0.04	−0.05	−0.06*	−0.06*	−0.06*
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Slack resources	−0.02***	−0.02***	−0.02***	−0.01**	−0.01***	−0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Sinful industry	−0.00	−0.00	0.00	0.02	0.02	0.02
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Advertising intensity	0.02	0.01	0.34**	−0.07	−0.09*	−0.33***
	(0.03)	(0.03)	(0.12)	(0.04)	(0.04)	(0.09)
Provincial population	0.00	0.00	0.00	0.00*	0.00*	0.00*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Inverse Mills ratio	0.04*	0.04	0.04	0.03	0.03	0.03
	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)
Corporate-giving		0.01***	0.01***		0.01***	0.00***
		(0.00)	(0.00)		(0.00)	(0.00)
Corporate-giving × Advertising intensity			−0.04**			0.03**
			(0.01)			(0.01)
Intercept	−0.01	0.03	0.02	−0.19*	−0.17*	−0.16*
	(0.10)	(0.10)	(0.10)	(0.09)	(0.09)	(0.09)
Observations	2951	2951	2951	2895	2895	2895
Firms	793	793	793	777	777	777
R^2	0.04	0.05	0.05	0.06	0.06	0.07
ΔR^2		0.01	0.00		0.00	0.01

Notes: [a]Significance at ***$p < 0.01$, **$p < 0.05$ and *$p < 0.1$; standard errors are shown in parentheses.
All models included industry and year dummies, not reported.
ROA, return on assets.

settings affect the functioning of the underlying mechanisms. In particular, we argue that stakeholder perceptions of charitable activities are based not only on the charitable act itself but also on the character of the actors. One factor that defines the moral character of a firm is whether it operates in a sinful industry. Stakeholder perceptions of 'sinful' firms in the United States are different from those in China, and thus whether or not a US or a Chinese firm operates in a sinful industry has different impacts on the CP–CFP relationship. Consistent with our predictions, we found that a sinful industry has a negative moderating effect on the CP–CFP relationship in the US sample but not in the Chinese sample. In addition, we argue that information availability is an essential condition for CP to have an impact on CFP. Consistent with expectations, we found that advertising intensity has a more positive moderating effect on the CP–CFP relationship for US firms than for Chinese firms. Therefore, this study highlights the role of regional differences by systematically theorizing and testing the differences in stakeholder perceptions and information availability across different settings. The variances in stakeholder perceptions and information availability due to geographical disparity lead to differences in returns to CP.

With regards to the CP literature, this study responds to Brammer, Jackson, and Matten's (2012) and Campbell's (2007) calls for more rigorous research on the role of institutional environments in the CP–CFP relationship. Institutional theory has long established that organizations are embedded within broader social structures, comprising different types of institutions that exert significant influences on corporate decision-making and organizational outcomes (Campbell, 2007). Accordingly, corporate philanthropic activities are framed around national contexts and thus are influenced by the prevailing institutions in

such contexts (Chang, 2009; Ioannou & Serafeim, 2012; Stevens & Makarius, 2015). Indeed, how the public and stakeholders respond to charitable donations depends on the institutions in which firms operate (Mukherjee et al., 2018).

Managerial implications

The findings from this study also have important implications for policy-makers and managers. First, policy-makers who aim to encourage CP should act as a coordinator between the firm and its key stakeholders. As regulators, policy-makers typically exert pressures on the firm or incentivize the firm to donate. Our findings imply that policy-makers should also facilitate information exchanges between the key stakeholders and the firm, such that the firm is well informed about the stakeholders' perception toward their activities. Once the firm understands how well their philanthropic activities are received by the stakeholders and the potential performance gain from the stakeholders' responses, it will have greater commitments in CP. The key implication here for the policy-makers is that emphasizing the positive CP–CFP link is not sufficient when encouraging a firm to donate. A more fruitful way is to help the firm understand the stakeholders' perception of their philanthropic activities.

Second, from the perspective of managers, the results suggest that to maximize benefits from their philanthropic activities, managers should try to understand better the geographical environment and be sensitive to stakeholders' perceptions of philanthropic actions. For example, managers should be more careful in deciding to which regions the firms donate their money. How to allocate the limited resources and maximize the financial benefits from donations is a key question for managers. Our findings suggest two ways to increase the returns to their donations. First, firms should make efforts to propagate their philanthropic activities. This can be done through advertising, communication with analysts and media, etc. Second, managers should take into consideration of local technological infrastructure when they decide whether or how much they donate to the region. The key implication here is that firms should donate to the regions where information flow is efficient and there are abundant media channels to facilitate the dissemination of information.

Limitations

Interpretation of the findings should be considered in light of the study's limitations. First, we focused on only one dimension of corporate social activity (i.e., CP) and its relationship to CFP. Future research might examine other dimensions of social responsibility such as the environment, products and other community activities. We believe that our arguments related to the mechanism of information availability will generalize across different social dimensions. Similarly, we posit that stakeholder perceptions of other social activities should play an important role; therefore, research should explore whether and how the impact of other socially responsible activities on CFP might vary across institutions.

Second, we used aggregate information on firm advertising intensity to measure information availability as we did not have direct measures of a firm's efforts to disseminate CP activities. We were also not able to differentiate the impact of information on different stakeholder groups. Such crude measure may lead to biased results. We hope that future studies can address this issue by constructing more direct measures of information availability on CP activities.

Last, our sample was limited to publicly listed companies in both the US and Chinese context. Despite their large total market capitalization, publicly listed companies are only a subset of all enterprises, especially the sample of firms in China, where only a limited number of firms are listed. As a reasonably good financial performance is presumably a prerequisite for stock market listing, the results should be taken with caution. Their applicability may be limited to the unique cultural and social environment surrounding Chinese and US listed companies. Future research could attempt to confirm these results with broader samples, including private firms.

CONCLUSIONS

This study identified stakeholder perception and information availability as two mechanisms through which CP affects CFP. We argue that the CP–CFP relationship varies by regions because of the geographical variation in these two mechanisms. Specifically, whether a firm operates in a sinful industry and how intensively it advertises should have differential moderating effects on the CP–CFP relationship for firms operating in different geographical regions. These predictions largely received support in both country- and subnational-level analyses. Our findings highlight the importance of considering geographical influences on the linkage between CP and CFP and the value of bridging insights between economic geography and strategic management.

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NOTES

1. Gambling organizations are prohibited in mainland China.

2. Although the number of companies and total observations is larger for the Chinese sample, the average amount of donations is much larger (about eight times) for the US companies, because corporate philanthropy is a relatively new phenomenon in China.

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