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Corporate Philanthropic Giving, Advertising Intensity, and Industry Competition Level

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ABSTRACT. This article examines whether the likelihood and amount of firm charitable giving in response to catastrophic events are related to firm advertising intensity, and whether industry competition level moderates this relationship. Using data on Chinese firms' philanthropic response to the 2008 Sichuan earthquake, we find that firm advertising intensity is positively associated with both the probability and the amount of corporate giving. The results also indicate that this positive advertising intensity-philanthropic giving relationship is stronger in competitive industries, and firms in competitive industries are more likely to donate. This study thus provides evidence suggesting that even in the wake of catastrophic events, corporate philanthropic giving is strategic.

KEY WORDS: advertising intensity, catastrophic events, corporate philanthropy, corporate social responsibility, industry competition level

Introduction

Recent catastrophic events, such as the 9/11 New York terrorist attacks in 2001, the South Asian tsunami in December 2004, Hurricane Katrina in the southern U.S. in August 2005, the Kashmiri earthquake in October 2005, and China's Sichuan earthquake in May 2008 were all devastating and spurred philanthropic actions by individuals, corporations, nongovernmental organizations, and government agencies. In particular, many companies responded by giving donations (e.g., cash, goods, and employee voluntary efforts) as part of their corporate social responsibility (CSR). Carroll (1979) argues that CSR has four intimately related facets – economic, legal, ethical, and philanthropic – with organizations striving to achieve all the four simultaneously. On the bases of these components, a socially responsible firm "should strive to make a profit, obey the law, be ethical, and be a good corporate citizen" (Carroll, 1991, p. 43).

This research focuses on one special class of CSR – corporate philanthropic giving (CPG). Although corporate philanthropic response is not enforced as are economic and legal responsibilities, it is increasingly practiced by companies and is generally viewed as a sign of good corporate citizenship. Previous research (e.g., Chapple and Moon, 2005; Katz et al., 2001; Kolk, 2005; Muller and Whiteman, 2009; Shen, 2004; Welford, 2005) suggests that companies worldwide react and respond differently to natural disasters, and their philanthropic donations can be motivated by a variety of factors, including cultural, institutional (e.g., stakeholder configurations), organizational, economic, and geographic. The motivation for corporate giving is not inherently altruistic. Corporate giving is a reaction to seismic shifts in the environmental landscape, and it represents a reactive strategy crafted to counter pressures such as stakeholder demands, threats of government intrusion into industry's freedom, and escalating public expectations (Campbell et al., 1999; Gardberg and Fombrun, 2006; Patten, 2008).

In today's global business, CPG is becoming more strategic, as has been indicated by Brammer and Millington (2006), Saiia (2002), and Sánchez (2000). Ever-increasing global competition requires that firms establish their competitive advantage from various sources. Corporate philanthropy may help a firm establish reputation, brand recognition, and loyalty; promote itself as a "socially responsible" firm, or attract and maintain a work force (Sánchez, 2000). Dean (2003) finds that corporate donations can help

the company forge a relationship with the customer and build loyalty. From a marketing perspective, it is also common for companies to invest in advertising to achieve the common goals of building stronger relationships with customers and enhancing customer loyalty (Dick and Basu, 1994). For example, advertising influences the attitude–behavior relationship through its impact on accessibility (Berger and Mitchell, 1989). The underlying mechanism may be explained as follows: repeated advertising exposure can potentially enhance consumers' confidence by allowing them to process more information, repeating attitudinal decisions, and providing more opportunities for brand-relevant cognitive elaboration (Berger and Mitchell, 1989; Oliver, 1999). As in most cases both corporate philanthropy and advertising serve the common purpose of building customer loyalty, we predict that firms with large advertising expenses will tend to have higher likelihood of giving and to donate larger amounts.

The relationships between advertising expenses and philanthropy in different industries are not actually the same. Amato and Amato (2007) find that industry effects explain between 20 and 22% of the total variation in donation ratios of the firms. Peer pressure may create an environment that requires firms to meet or exceed competitor philanthropy to maintain customer and community goodwill. In this study, we investigated whether charitable donation amounts and the likelihood of firm response to catastrophic events relate to firm advertising intensity, and how this relationship varies with industry competition levels, a topic that has not been previously discussed in the CPG literature.[1]

The context of our study is the Sichuan earthquake in China, which took place in May 2008. Anecdotal evidence indicates that Chinese companies quickly and effectively responded to the call for donations and disaster response efforts, and that corporate donations were significant. We identified 703 Chinese listed firms that engaged in CPG through outright cash donations and/or in-kind donations with the value released by the donor firm in May and June 2008. We find that the likelihood and extent of corporate contributions are positively related to firms' advertising intensity. We also document the moderating effect of industry competition level on the relationship: the positive relationship between CPG and advertising intensity is significantly strengthened in more competitive industries. Our findings are robust when we use a different measure of competition levels or examine only firms that made donations. Besides that, the decision to engage in CPG and the amount of donations are positively associated with firm size, profitability, and cash available. Geographic location (in the earthquake province) is positively related to firm total donation amount. The decision to engage in CPG is negatively correlated with firm leverage. Results suggest that CPG decisions and the extent of donations are significantly influenced by industry type, substantially motivated by strategic consideration, and greatly constrained by economic factors in emerging markets such as China.

This study contributes to the literature in several ways. First, using a unique research setting provided by the Sichuan earthquake, we investigate the link between CPG and advertising intensity. To the best of our knowledge, this is the first empirical study explicitly addressing such an association. Second, we provide evidence of positive association between advertising intensity and CPG. We also find a mediating effect of industry competition on this relationship. These findings are consistent with previous research in that CSR activities are driven by strategic motivation and constrained by economic considerations. Our results add to our understanding of the motivations behind CPG and carry important implications for practice. Third, we contribute to the literature on sustainability, performance, and CSR by investigating the association between corporate philanthropy (donations) and firm characteristics. Finally, while the issue of CPG has attracted growing research interest in recent years, most empirical results are based on U.S. data, and this article is one of the few empirical studies in emerging markets using a large research sample. This article adds to a growing number of non-U.S. studies by investigating the link between firm advertising and CPG in China, the largest developing economy in the world.

The remainder of this article is organized as follows: the ''Background and hypotheses development'' section provides institutional background, the literature review, and research questions. The ''Sample and descriptive analysis'' section discusses data collection and methods. The ''Empirical results'' section presents the results, and the ''Discussion and conclusion'' section concludes, suggesting implications of the study.

Background and hypotheses development

Background

The 2008 Sichuan earthquake, which registered 8.0 on the Richter scale, occurred on the afternoon of May 12, 2008.[2] As of September 11, 2008, official figures stated that 69,226 people were confirmed dead and 374,643 injured; 17,923 were still listed as missing (Xinhua Net, 2008a). Approximately 45.5 million people lived in the affected area (Xinhua Net, 2008b). The earthquake left about 4.8 million people homeless, though the number could be as high as 11 million (Hooker, 2008). It was both the strongest and the deadliest earthquake to hit China since the 1976 Tangshan earthquake, which claimed the lives of at least 240,000 (Spignesi, 2005). The direct economic loss is estimated as high as 123 billion U.S. dollars (Shanghai Daily, 2008).

Research indicates that climate-related natural disasters such as hurricanes will likely increase (Emanuel, 2005; Webster et al., 2005), and the aggregate social and economic costs of such events have been rising steadily since the 1960s (Muller and Whiteman, 2009). This increasing propensity to natural disasters calls for more financial and social disaster relief efforts by the government, individuals, and corporations in the future. As Muller and Whiteman (2009) suggest, such corporate activities include donations in cash and in kind, as well as employee volunteer jobs. In recent years, with the economic development of emerging markets, listed firms in those markets have been more and more involved in corporate social activities. After the 5/12 Sichuan earthquake, almost half of the firms listed on the Chinese stock market made relief efforts.[3] According to the Deputy Secretary-General of the China Charity Foundation (CCF), both the number of companies participating and the size of the gifts were extraordinary (Wang, 2008).

Motivations for CPG

The motivations for CPG have been documented extensively in the literature (Brammer and Millington, 2005, 2006; Campbell et al., 2002; Saiia et al., 2003; Seifert et al., 2003). Campbell et al. (2002) and Seifert et al. (2003) provide comprehensive outlines of empirical research studies, critiques, and reviews that have examined motivations for CPG. Speaking in general, the literature suggests four possible motivations for CPG: strategic, political, altruistic, and managerial utility.

Strategic motivations

Saiia et al. (2003, p. 170) define strategic philanthropy as the practice of "giving of corporate resources to address non-business community issues that also benefit the firm's strategic position and, ultimately, its bottom line." According to this definition, firms "do good in order to do well," and corporate philanthropy appears to be consistent with the concept of the profit-maximizing model of a business. Hess et al. (2002), Smith and Stodghill (1994), and Vidaver-Cohen and Altman (2000) argue that firm philanthropic activities are a good market-entry strategy for global expansion. Governments typically encourage donations by individuals and corporations for public goods through tax incentives, and companies often incorporate such incentives into their strategic decision to engage in CPG.

Political motivations

As Sánchez (2000) states, the political perspective is also strategically motivated. This view posits that firms engage in philanthropy to maximize benefits, but not in the form of an economic return on investment (ROI). Rather, philanthropy is used to maximize a firm's political ROI. Corporate philanthropy builds image and furthers corporate political interests "for the purpose of securing rewards and reducing penalties from significant external publics" (Neiheisel, 1994, p. 42). Community recognition for CSR is important to corporations with local community roots, particularly for non-state-owned corporations to build political ties.

Altruistic motivations

Some scholars view corporate philanthropy as a practice of good citizenship, an obligation to maximize public welfare, and giving with nothing expected in return; thus, they interpret corporate philanthropy as altruism (Campbell et al., 1999; Cowton, 1987; Shaw and Post, 1993).

Managerial utility motivations

This view uses agency theory (deeply rooted in economic literature and developed in finance literature) to explain motivations for CPG. From an agency theory perspective, scholars argue that corporate philanthropy is likely to enhance the CEO's self-interests, but unlikely to maximize shareholder wealth (e.g., Atkinson and Galaskiewicz, 1988). Corporate philanthropy is viewed as an attempt by executives to enhance their social standing in the community, self-image, or personal prestige at the expense of the company (Galaskiewicz, 1997; Haley, 1991).

One notable trend of CPG is that corporate charity giving is becoming more strategic, as indicated by Brammer and Millington (2006), Saiia (2002), and Sánchez (2000). In recent years, increased global competition has required that firms establish their competitive advantage from various sources. Corporate philanthropy may help a firm establish brand recognition and loyalty, promote itself as a "socially responsible" firm, or attract and maintain a work force (Sánchez, 2000). As Brammer and Millington (2006) suggest, strategy plays a significant role in determining how firms manage their philanthropy. Our study thus focuses on the strategic motives for giving and its relationship with firm advertising intensity, while taking into account industry competition level.

CPG and firm characteristics

Numerous studies have documented firm characteristics that affect donation decisions, i.e., whether or not to donate, and the amount of donations (Brammer and Millington, 2004, 2005; Campbell and Slack, 2006; Coffey and Wang, 1998; Wang and Coffey, 1992). Speaking in general, firm size, profitability, cash resources available, geography, leverage, and industry have been found to be correlated with firm CPG decision and amount.

Firm size, reflecting and embodying a diverse range of firm attributes, has been documented to be positively correlated to CPG decision and donation amount (Amato and Amato, 2007; Brammer and Millington, 2006; Muller and Whiteman, 2009). Economic causes for this correlation might include large firms' greater absolute levels of resources, possible economies of scale in CSR activities, and the fact that larger firms are likely to be more mature and, therefore, are unlikely to face a significant number of attractive alternative investments (Orlitzky, 2001).

Profitability and cash resources available have also been found to be positively related to CPG (Adams and Hardwick, 1998; Crampton and Patten, 2008; Galaskiewicz, 1997; Useem, 1988). Useem (1988, p.78) argues that "the single most important market factor underlying corporate giving is the traditional measure of company success, its net income." Crampton and Patten (2008) find that differences in the extent of corporate giving following the 9/11 terrorist attacks in 2001 were positively and significantly associated with differences in firm profitability. The other measure of firm resources is cash available. Seifert et al. (2003) show a positive relationship between a firm's available cash resources and cash donations.

Geography could be another factor that affects firms' CPG decisions and variations in donation amounts. Muller and Whiteman (2009) find a "home region effect" and a "local presence effect" in CPG: firms are more attentive to disasters that are closer to home or in areas where they have a local presence.

Previous studies have found that leverage is negatively related to CPG, as firm donation is restricted by resources available and firms with more debt have more pressure to pay off their debt, which reduces available resources. Adams and Hardwick (1998) find that the decision to contribute is negatively related to leverage, and Brammer and Millington (2005) show that among givers, the rate of giving is related negatively to firm indebtedness.

CPG, advertising intensity, and industry competition level: hypothesis development

According to Nelson's (1970, 1974) view, advertising provides consumers with information to distinguish among different kinds of products. In order to successfully differentiate from their counterparts, firms may invest more in advertising. McWilliams and Siegel (2001) suggest that companies can also adopt CSR as a differentiation strategy because CSR helps a firm to build its reputation as being reliable and honest. Indeed, studies show that consumers

assume the products of a reliable and honest firm will be of high quality (Brammer and Millington, 2005; Fisman et al., 2006). A survey of 463 U.S. companies found that companies taking a more businesslike approach to charity reported a better image, increased employee loyalty, and improved customer ties (Schwartz and Smart, 1995). Another survey by Walker Information Inc., a research and consulting company that tracks customer satisfaction and business ethics, found that 47 percent of consumers would be more likely to buy from a ''good'' company that was socially responsible (Sato, 1998).

Prior literature has documented the relationship between advertising and provision of CSR. Navarro (1988) concludes that firms that spend more on advertising tend to give more to charity. McWilliams and Siegel (2000) find that advertising is an element of a differentiation strategy, and it is positively correlated with corporate social performance. Fisman et al. (2006) find that CSR is more prevalent in advertising-intensive (consumer-oriented) industries. Brown et al. (2006) support the theory that charitable giving enhances shareholder value, and within an industry, advertising intensity is positively related to companies' giving.

As a special class of CSR, CPG is also similar to other classes of CSR. For example, Crampton and Patten (2008) find that CPG is constrained by similar economic concerns. We posit that firms view CPG strategically, and firms with more market investments are more likely to give and give more in response to the Sichuan earthquake. Accordingly, we hypothesize that

H1: There is a positive relation between CPG and the extent of advertising intensity.

Previous research also indicates that industry competition influences CSR. For example, Fernandez-Kranz and Santalo (2004) provide evidence that product market competition is positively associated with widely used CSR measures. Their estimates suggest that if all else were constant, doubling the level of competition in the marketplace would increase the CSR ratings of an average company by almost 2–8 times. Fisman et al. (2006) find that CSR expenditures are more positively correlated with profits in more competitive industries, owing to the greater signal value of such expenditures in competitive environments. Neville et al. (2005) show that the positive relationship between corporate reputation and a firm's financial performance strengthens as competitive intensity increases. Thus, a firm in a highly competitive industry should have more incentives to use CSR to differentiate itself from its competitors. Accordingly, we propose the following hypothesis:

H2: The positive relation between CPG and advertising intensity is stronger for more competitive industries.

Sample and descriptive analysis

In order to explore the potential relationship between CPG and advertising intensity, and the moderating effects of industry competition level, we collected data on donation amounts and donation characteristics for all companies listed on the Chinese stock market. In accordance with previous research (e.g., Muller and Whiteman, 2009), our investigation is based on firm self-reporting and draws from information disseminated through the official information disclosure website appointed by the China Securities Regulatory Commission (CSRC), corporate websites and press releases, and information located by search queries via Lexis Nexis China and Google China News.[4] We conducted our search in the period of May–June 2008, as the requirement for a dated press release increases the likelihood that the contributing firm is seeking strategic value for its giving (Patten, 2008).

In total, we identified 703 companies, about 47% of the total number of firms listed in the Chinese stock market, with an earthquake relief-oriented press release issued within the time frame of interest. We measured corporate contributions as (1) outright cash donations and/or (2) in-kind donations with the value released by the donation firm. The announced contributions for the 703 firms ranged from 8,000 Yuan to 60,210,000 Yuan with a mean (median) of 3,086,688 (1,001,000) Yuan. Similar to Tian and Estrin (2008), we obtained our firm financial data from the Peking University CCER *Sinofin* database. Eighteen firms had missing financial data, which reduced our giver sample size to 685

firms. Those firms are distributed in almost all kinds of industries, and are mixed B2C (Business to Customer), B2B (Business to Business), and B2G (Business to Government). According to Tian and Estrin (2008) Table II, only 5.1% of firms listed in China are owned by foreign investors; the rest are Chinese firms, owned by family, other domestic industry, financial companies, or the Chinese government.

Descriptive statistics and variable correlations

Table I provides the descriptive statistics of the financial, advertising, and industry competition characteristics for 1,479 listed firms in the sample (including 685 givers and 794 nongivers) and also the comparison of those characteristics for firms in highly competitive industries versus firms in less competitive industries. We use the Herfindahl–Hirschman Index (HHI) as a measure for industry competition. HHI is a well-accepted measurement of industry competition in economics, calculated by squaring the market share of each firm competing in the industry and then summing the resulting numbers. A high HHI represents low competition. Industry is based on the classification provided by the CSRC. We divide the whole sample into two subsamples: firms in industries with HHI ≥ 0.1 (or HHID [the HHI dummy variable] = 0) are classified in the low competition group, and firms in industries with HHI < 0.1 (or HHID = 1) are deemed to be in highly competitive industries. We use *t*-tests to

TABLE I

Descriptive statistics

	Mean	SD	HHID = 1	HHID = 0	*t*-test for the difference between observations in the HHID = 1 and the HHID = 0 groups
1. Donation	144.12	398.62	141.87	157.96	−0.51
2. Donation dummy	0.463	0.499	0.467	0.440	0.93
3. Advert	0.036	0.055	0.037	0.030	1.99**
4. HHI	0.060	0.103	0.030	0.249	−18.39***
5. Size	21.43	1.225	21.45	21.35	0.92
6. ROA	0.042	0.115	0.046	0.068	−1.74*
7. Sichuan dummy	0.058	0.237	0.059	0.058	0.10
8. Cash available	785.59	3488.56	635.69	1706.7	−4.12***
9. Leverage	0.559	0.498	0.541	0.673	−3.55***
Number of firms			1,272	207	

Variable Definitions

Donation: total amount of cash and in-kind donation of firms.

Donation dummy: a dummy variable that takes the value of 1 if the firm contributes to earthquake relief and 0 otherwise.

Advert: the measure of firms' advertising intensity: it equals firms' selling expense divided by beginning of the year total assets.

HHI: the Herfindahl–Hirschman Index for each industry. Industry is based on the classification used by the CSRC. $HHI = \sum_{i=1}^{n}(X_i/X)^2$, where X_i is the sales revenue of firm i in the industry, X is the total sales revenue for all firms in the industry, and n is the number of firms. Lower value of HHI indicates higher competition.

HHID: a dummy variable that takes the value of 1 if the firm is in an industry with HHI < 0.1, and 0 otherwise. Thus, firms in the HHID = 1 group are in relatively high-competition industries and firms in the HHID = 0 group are in relatively low-competition industries.

Size: log form of total assets in the 2007 annual report.

ROA: net income divided by total assets at the beginning of the year.

Sichuan dummy = a dummy variable that takes the value of 1 if firm i is in Sichuan province and 0 otherwise.

Cash available: cash and cash equivalents in the 2007 annual report.

Leverage: total debt divided by total assets at the beginning of the year.

*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

examine the differences across the two subsamples.[5] The mean of the advertising expense for the low HHI subsample (0.037), or firms in more competitive industries, is significantly higher than that for the high HHI subsample (0.030), or firms in less competitive industries ($p < .05$). This shows that firms in more competitive industries spend more on advertising than firms in less competitive industries. The average HHI for the HHID = 1 group of firms is 0.030, versus 0.249 for the HHID = 0 group of firms. Firms in more and less competitive industries do not differ in size. In less competitive industries, firms enjoy higher ROA (return on assets) and more cash available, which is consistent with the economic theory that firms in more competitive industries are less profitable. Almost 5.8% of firms in our sample are located in Sichuan province, and the composition in terms of Sichuan firms and non-Sichuan firms does not differ for high and low HHI groups. The average leverage ratio, defined as total debt divided by total assets at the beginning of the year, is 0.559, and firms in less competitive industries seem to have relatively more debt than firms in more competitive industries. The significant differences in advertising expense, ROA, cash resources available, and leverage emphasize the importance of controlling for these variables when modeling the relationship between firm advertising intensity, industry competition level, and CPG.[6]

Table II presents Pearson correlations between dependent and various independent variables in our model. The variable donation, which includes both cash and in-kind donations, is positively related with firm size, ROA, and cash available. This is consistent with the literature and our conjecture that larger, more profitable firms and firms with more cash resources available donate more than other firms. The donation dummy is positively related to firm advertising intensity, size, ROA, and cash available, and negatively related to HHI and leverage. On the one hand, this is consistent with our main expectation that firms spend more on advertising and firms in competitive industries are more likely to donate. On the other hand, this also indicates that larger, more profitable firms, as well as firms with more cash resources, are more likely to be involved in CPG activities, and firms with more debt are less likely to donate after the catastrophic event. Firm advertising intensity is negatively related to HHI, which is consistent with our previous finding that firms in more competitive industries spend more on advertising. HHI is positively related to ROA and cash available, which indicates that firms in less competitive industries are more profitable.

Empirical results

Advertising intensity, industry competition level, and donation likelihood

Although preliminary evidence suggests that firms with high advertising intensity and firms in highly

TABLE II

Variable correlations

	1	2	3	4	5	6	7	8
1. Donation	1.000							
2. Donation dummy	0.389★	1.000						
3. Advert	0.078★	0.152★	1.000					
4. HHI	0.067★	−0.021	−0.111★	1.000				
5. Size	0.396★	0.209★	−0.085★	0.165★	1.000			
6. ROA	0.087★	0.064★	0.006	0.059★	0.056★	1.000		
7. Sichuan dummy	0.018	−0.021	−0.004	−0.013	−0.075★	0.002	1.000	
8. Cash available	0.364★	0.120★	−0.051★	0.237★	0.425	0.053★	−0.028	1.000
9. Leverage	−0.034	−0.090★	−0.033	0.029	−0.123★	−0.131★	0.039	−0.020

Variable Definitions

Please refer to Table I for variable definitions.

★$p < 0.01$.

competitive industries are more likely to donate, other factors also have important effects on the decision about CPG, such as firm size (Adams and Hardwick, 1998; Waddock and Graves, 1997), profitability (McGuire et al., 1988; Seifert et al., 2003; Waddock and Graves, 1997), cash resources available (Seifert et al., 2003), geographic location (Muller and Whiteman, 2009), leverage ratio (Adams and Hardwick, 1998; Brammer and Millington, 2005), and industry (Amato and Amato, 2007; Seifert et al., 2003; Useem, 1988). Thus, in order to formally investigate our research questions, we employ the logistic regression model in equation (1) to test the relation between CPG decisions and firm advertising intensity, and the moderating effects of industry competition level.

$$\begin{aligned}\text{Donation dummy}_i &= \lambda_0 + \lambda_1\ \text{Advert}_i \\ &+ \lambda_2\ \text{HHI (HHID)}_i + \lambda_3\ \text{Advert} \cdot \text{HHI (HHID)}_i \\ &+ \lambda_4\ \text{Size}_i + \lambda_5\ \text{ROA}_i + \lambda_6\ \text{Sichuan dummy}_i \\ &+ \lambda_7\ \text{Cash available}_i + \lambda_8\ \text{Leverage} + \delta_i \qquad (1)\end{aligned}$$

Table III shows the results of the logistic regression models. We use two industry competition variables, the original HHI and HHID, the HHI dummy variable, to capture the effect of industry competition level on firm CPG behavior. The Cox & Snell and Nagelkerke pseudo R^2 values, developed to approximate OLS-type R-square functions, show that both models capture a good proportion of the variance in the data. In both regressions, the coefficients of advertising intensity are significantly positive ($p < .01$). These results are consistent with our expectations that firms with higher advertising expenses are more likely to donate in response to the Sichuan earthquake. The coefficient of HHI is negative and significant, which indicates that firms in more competitive industries are more likely to donate.

Firm size is positively related to firm donation dummies, showing that large firms are more likely to donate after catastrophic events. This is consistent with Brammer and Millington's assertion that large firms are more visible to the public and they may have greater incentives to donate to increase firm reputation. Firm cash resources available are also positively related to firm donation decisions, in line with the finding in the literature that firms with higher cash resources are more likely to be involved in CPG activities (Crampton and Patten, 2008; Seifert et al., 2003). The coefficient of ROA is positive but not significant; this is not consistent with our expectation that more profitable firms are more likely to donate (Useem, 1988). Leverage is found to be negatively correlated to firm CPG decisions, and this demonstrates, once again, what Adams and Hardwick (1998) found, that the decision to contribute is negatively related to leverage, as heavily indebted firms may face more pressure to pay off debts and thus may have fewer resources to donate.

Advertising intensity, industry competition level, and donation amount

While equation (1) tests the likelihood of firms donating, in this section, we are interested in seeing whether the same independent variables influence the donation amount. Specifically, we examine the relationships of firm advertising intensity, industry competition level, and CPG amount in a more comprehensive view by considering other factors that may affect firm donation amount. Our regression model is illustrated in equation (2).

$$\begin{aligned}\text{Donation}_i &= \beta_0 + \beta_1\ \text{Advert}_i + \beta_2\ \text{HHI (HHID)}_i \\ &+ \beta_3\ \text{Advert} \cdot \text{HHI (HHID)}_i + \beta_4\ \text{Size}_i \\ &+ \beta_5\ \text{ROA}_i + \beta_6\ \text{Sichuan dummy}_i \\ &+ \beta_7\ \text{Cash available}_i + \beta_8\ \text{Leverage} + \varepsilon_i \qquad (2)\end{aligned}$$

Table IV presents the results of the multiple regression analysis of equation (2), where the corporate giving measure is the total value of donations, including both cash and in-kind donations. As noted in the table, both models are highly significant (based on the model F-statistics) with adjusted R^2s of 0.223 and 0.224. The coefficient on *Advert* in Reg1 is positive and significant, which indicates that the advertising intensity is positively associated with donation amount in response to the Sichuan earthquake. The result confirms our hypothesis 1. The interaction "Advert · HHI" is negatively associated with differences in the extent of charitable giving in response to the Sichuan earthquake ($p < .05$). This result is consistent with our expectation that the

TABLE III

Logistic regression for the likelihood of firm donation

$$\text{Donation dummy}_i = \lambda_0 + \lambda_1\ \text{Advert}_i + \lambda_2\ \text{HHI (HHID)}_i + \lambda_3\ \text{Advert} \cdot \text{HHI (HHID)}_i + \lambda_4\ \text{Size}_i + \lambda_5\ \text{ROA}_i + \lambda_6\ \text{Sichuan dummy}_i + \lambda_7\ \text{Cash available}_i + \lambda_8\ \text{Leverage} + \delta_i \quad (1)$$

	Reg1		Reg2	
Model explanatory power				
Number of observations	1,479		1,479	
−2 Log likelihood	1891.88		1895.98	
Cox & Snell R^2	0.093		0.090	
Nagelkerke R^2	0.124		0.121	
Variables	Parameter estimate	Wald	Parameter estimate	Wald
Intercept	−5.433***	14.63	−5.448***	14.84
Advert	7.598***	32.93	7.836***	34.96
HHI	−1.19**	4.31		
Advert*HHI	−24.29	1.52		
HHID			−0.028	0.018
Advert*HHID			3.78	0.87
Size	0.238***	12.28	0.238***	12.37
ROA	0.685	1.57	0.631	1.34
Sichuan dummy	−0.013	0.003	−0.013	0.003
Cash available	0.0003**	9.54	0.0003**	8.39
Leverage	−0.554***	6.50	−0.565***	6.76

Please refer to Table I for variable definitions.
*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

positive relationship between advertising intensity and philanthropic giving is stronger in highly competitive industries. We also use HHID to replace HHI, and get similar results. The interaction "Advert · HHID" is significantly positive, which supports hypothesis 2.

In accordance with previous findings in the literature, firm size is positively correlated with the total amount of giving. Firm profitability and cash resources available are positively related to firm donation amount, suggesting that even in times of heightened social pressure following catastrophic events, corporate philanthropy is constrained by economic concerns (Crampton and Patten, 2008). The Sichuan dummy is positively related to firm total donation, indicating that, as Muller and Whiteman (2009) suggest, there are home-, region-, and local-presence effects on CPG activities. Firms in Sichuan province donate more in total than firms located in other provinces after other factors that affect donation amount are controlled. Leverage is not significant in either of the two models, even though previous studies show that the extent of giving is negatively associated with firm leverage (Brammer and Millington, 2005).

Further analysis – givers only

Crampton and Patten (2008) suggest that including zero-Yuan givers may cause potential bias. In order to verify the robustness of our results, we repeated our regression analyses of equation (2) using sample firms with actual philanthropic giving in response to the Sichuan earthquake, following Crampton and Patten's (2008) procedure. Thus, we separate the choice of how much to donate from the choice of whether to make a contribution.

TABLE IV

Multiple regression results for tests of the relation between the amount of charitable contribution, advertising intensity, and industry competition level (All firms)

$$\text{Donation}_i = \beta_0 + \beta_1\ \text{Advert}_i + \beta_2\ \text{HHI (HHID)}_i + \beta_3\ \text{Advert} \cdot \text{HHI (HHID)}_i + \beta_4\ \text{Size}_i + \beta_5\ \text{ROA}_i + \beta_6\ \text{Sichuan dummy}_i + \beta_7\ \text{Cash available}_i + \beta_8\ \text{Leverage} + \varepsilon_i \quad (2)$$

	Reg1		Reg2	
Model explanatory power				
Number of observations	1,479		1,479	
Adjusted R^2	0.223		0.224	
F-statistic	27.37		27.60	
Significance of *F*-statistic	0.000		0.000	
Variables	Parameter estimate	*t*-statistic	Parameter estimate	*t*-statistic
Intercept	−2279.25***	−11.48	−2192.95***	−10.46
Advert	990.62***	5.01	−901.77	−1.42
HHI	266.08	0.51		
Advert*HHI	−6778.96**	−2.16		
HHID			−70.80	−0.68
Advert*HHID			1825.04***	2.76
Size	117.13***	12.26	107.08***	12.25
ROA	199.58**	2.47	192.46**	2.39
Sichuan dummy	83.61**	2.15	81.82**	2.11
Cash available	0.025***	8.31	0.026***	8.85
Leverage	15.61	0.83	14.32	0.76

Please refer to Table I for variable definitions.
*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Table V presents the results with actual firm donors only, and the results are quite similar to those in Table IV. *Advert* is significantly positive in Regression 1 (Reg1), in accord with our hypothesis 1. The interaction terms "Advert · HHI" and "Advert· HHID" are significant, with a *t*-statistic of −1.77 and 2.39, respectively, in accordance with hypothesis 2. Other economic factors also have coefficients similar to those in previous tables. These additional tests further confirm our hypotheses.

Discussion and conclusion

This study investigates the relationship between CPG and advertising intensity across different industries. Using data on Chinese firms' philanthropic response to the 2008 Sichuan earthquake, we find that the probability and amount of charitable giving are positively associated with firms' advertising intensity. The findings are consistent with the strategic view of CPG, in that managers use philanthropic giving as part of the firm's strategy. Firms are not purely altruistic when making philanthropic donations. Instead firms utilize CPG as a marketing strategy to differentiate themselves from their competitors with the intent to establish firm reputation and create economic value for shareholders. As a result, firms with higher advertising intensity are more likely to donate and donate more. More interestingly, we find that the positive relationship between CPG and advertising intensity is stronger in competitive industries. This suggests that firms in more competitive industries work harder at differentiating themselves from their competitors.

This study also finds that firm size, profitability, geography, cash resources, and leverage are significantly associated with the CPG decision. These

TABLE V

Multiple regression results for tests of the relation between the amount of charitable contribution, advertising intensity, and industry competition level (givers only)

$$\text{Donation}_i = \beta_0 + \beta_1\ \text{Advert}_i + \beta_2\ \text{HHI (HHID)}_i + \beta_3\ \text{Advert} \cdot \text{HHI (HHID)}_i + \beta_4\ \text{Size}_i + \beta_5\ \text{ROA}_i + \beta_6\ \text{Sichuan dummy}_i + \beta_7\ \text{Cash available}_i + \beta_8\ \text{Leverage} + \varepsilon_i \quad (2)$$

	Reg1		Reg2	
Model explanatory power				
Number of observations	685		685	
Adjusted R^2	0.268		0.268	
F-statistic	16.60		16.60	
Significance of *F*-statistic	0.000		0.000	
Variables	Parameter estimate	*t*-statistic	Parameter estimate	*t*-statistic
Intercept	−3808.83***	−9.75	−3615.43***	−8.04
Advert	1050.98***	3.19	−2154.37	−1.55
HHI	278.62	0.21		
Advert*HHI	−10371*	−1.77		
HHID			−171.16	−0.61
Advert*HHID			3092.37***	2.39
Size	184.41***	10.78	184.14***	10.82
ROA	421.33*	1.65	418.29*	1.64
Sichuan dummy	162.31**	2.06	158.84**	2.02
Cash available	0.014***	3.12	0.015***	3.60
Leverage	−43.85	−0.57	−43.78	−0.58

Please refer to Table I for variable definitions.
*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

results are consistent with major findings in the literature related to other natural disasters such as the South Asian tsunami, Hurricane Katrina, and the Kashmiri earthquake (Crampton and Patten, 2008; Muller and Whiteman, 2009).

Our findings offer useful implications for future research. Although the strategy literature (e.g., Fry et al., 1982) suggests that advertising and charitable contributions are complementary inputs in developing the firm's reputation, this perspective has not been tested previously in an emerging country. As there are important differences in cultural, institutional, legal, economic, and ethical backgrounds between developed and developing countries (Ge and Thomas, 2007; Lam and Shi, 2008; Whitcomb et al., 1998), our finding that firms in an emerging market use CPG as a marketing strategy is an important contribution to the CPG literature. Moreover, our finding that industry characteristics significantly affect the relationship between CPG and advertising intensity suggests that CPG cannot be viewed in isolation from other corporate behavior or the economic environment. It is appropriate in future research to consider CPG as part of both the economic and the cultural environments.

Our study also has implications for managers and governors. In view of rising natural catastrophes in recent years, corporate philanthropic disaster response is playing a growing role in helping societies recover from the disasters. Although governments and other non-profit organizations are major relief sources, corporate giving plays a major complementary role. Our results indicate that firms may not be purely altruistic when making donations, which is understandable because corporations have the objective to make profits for shareholders. Therefore, the government and its regulatory bodies should consider designing mechanisms that motivate firms to make

more donations and create a win–win situation for all related parties.

Although this study sheds new light on CPG, it has several limitations that may be addressed in future research. First, our research focuses only on the CPG behavior of listed firms in China. While China is an important emerging market, which provides a worthwhile research environment, our results may not generalize to other countries because institutional structure and national culture can affect firms' CSR behavior (Furrer et al., 2004). Future research could compare the strategic use of CPG in different markets to better understand the roles of institutional structure and national culture. Second, data availability limited our sample to listed firms, while nonlisted firms may also donate. Examining the CPG behavior of nonlisted firms is promising, as listed firms' donation decisions may be affected by investor sentiment in the stock market. Finally, although we show robust evidence that firms strategically use CPG, we did not investigate the decision process and the determinants of the strategic decision. It would be a fruitful area to investigate how firms plan their CPG strategies and their antecedent factors.

Notes

[1] Although several articles have discussed the relationship between advertising and provision of CSR (Brown et al., 2006; Fisman et al., 2006; McWilliams and Siegel, 2000; Navarro, 1988), none of those articles document whether charitable donation amounts and the likelihood of firm response to catastrophic events relate to firm advertising intensity, and how this relationship varies with industry competition levels.

[2] It was also known as the Wenchuan earthquake, after the location of the earthquake's epicenter, Wenchuan County in Sichuan province.

[3] Just 2 days after the 5/12 Sichuan earthquake, the Shanghai Stock Exchange issued the "Notice of Improving Listed Companies' Social Responsibilities" and the "SSE Guideline on Environmental Information Disclosure by Listed Companies," which aim to guide the listed companies to actively fulfill social responsibilities. The Shenzhen Stock Exchange, the other stock exchange in China, issued a similar notice in 2006. These official guidelines also encourage listed firms' CPG.

[4] The official disclosure website for Chinese listed firms is www.cninfo.com.cn.

[5] All financial information for sample companies is from the most recent annual report preceding the Sichuan earthquake.

[6] Our advertising expense data are from the *Sinofin* database. In China, firms report selling expense in their income statements and *Sinofin* provides firms' financial data for Chinese listed firms as *Compustat* does in the U.S. Selling expense mainly includes advertising expenditures, salesperson salaries, and commissions. All these fees are related to activities aimed at promoting sales of merchandise. For example, if a firm uses a TV advertisement to promote its products, then the fee will be recognized as advertising expenditures. If a firm uses doorstep selling to promote its products, then the fee will be recognized as sales salaries. Thus, selling expense is an appropriate measure of firms' advertising intensity.

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