Too Little or Too Much? Untangling the Relationship Between Corporate Philanthropy and Firm Financial Performance

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What is the relationship between corporate philanthropy and corporate financial performance? Some scholars argue that corporate philanthropy facilitates stakeholder cooperation and helps secure access to critical resources controlled by those stakeholders, suggesting that corporate philanthropy should be positively associated with corporate financial performance. In contrast, other scholars take a negative stance, suggesting that corporate philanthropy diverts valuable corporate resources and tends to inhibit corporate financial performance. Existing empirical studies have not found conclusive evidence on the corporate philanthropy–financial performance relationship. Integrating and extending existing perspectives, this study develops the argument that the relationship between corporate philanthropy and financial performance is best captured by an inverse U-shape. In addition, it posits that the inverse U-shaped relationship varies with the level of dynamism in firms' operational environment. Using a panel data set of 817 firms listed in the Taft *Corporate Giving Directory* from 1987 to 1999, we find strong support for these arguments.

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In recent years, business corporations have devoted substantial resources to promoting social welfare and improving stakeholder relationships. Meanwhile, there is an important debate among academics about the relationship between corporate philanthropy and corporate financial performance. Some scholars argue that corporate philanthropic contributions help to build a favorable company image in the eyes of stakeholders (File and Prince 1998, Fry et al. 1982, Haley 1991, Navarro 1988, Saiia et al. 2003). A positive social image induces stakeholder support and provides insurance-like protection for the firm's relational assets (Fombrun et al. 2000, Godfrey 2005, Griffin 2004, Strong 1999), enabling the firm to secure critical resources controlled by stakeholders (Fombrun et al. 2000, Frooman 1999, Levy and Shatto 1978). Thus, this line of argument suggests that corporate philanthropy should have a positive effect on corporate financial performance.

Conversely, other scholars argue for a negative relationship between corporate philanthropy and corporate financial performance (Friedman 1970). According to this argument, managers lack the expertise necessary for efficient investment in social betterment. As a result, philanthropic causes should be championed by charitable not-for-profit organizations or individuals, whereas private firms should make better use of their valuable resources to improve their operational efficiency. This argument thus suggests that corporate involvement in

philanthropy generally does not benefit a firm or its shareholders, but may only enhance top managers' personal reputations in their social circles or enable them to further their political and career agendas (Barnett 2007, Friedman 1970, Galaskiewicz 1991, Haley 1991, Werbel and Carter 2002).

Other arguments suggest that the financial consequences of corporate philanthropy may not be definitive, because companies may also engage in corporate philanthropy for reasons without apparent financial implications (Galaskiewicz 1991, Galaskiewicz and Burt 1991, Marquis et al. 2007). For example, a firm may involve itself in philanthropic causes because its top managers actively participate in the social and civic networks of the philanthropic elite or associations of firms that are active in corporate philanthropy (Galaskiewicz 1991, Marquis et al. 2007). Furthermore, a firm may engage in philanthropic giving simply because its peers in the same industry do (Galaskiewicz and Burt 1991). In these cases, institutional pressures at the industry or community level shape corporate charitable action, and the reasoning often extends beyond a firm's immediate profit-maximization goals.

The empirical evidence on the corporate philanthropy–financial performance relationship can also be characterized as inconclusive. Some authors have examined corporate philanthropy as a component of the larger domain of corporate social responsibility. For example,

a meta-analysis by Orlitzky et al. (2003) found that corporate philanthropy had a positive relationship with corporate financial performance. In contrast, Griffin and Mahon (1997) and Berman et al. (1999) did not find a significant relationship between the two. Similarly, Berman et al. (1999) found that corporate involvement in community relations, which includes philanthropic activities, had little influence on corporate financial performance. A similar pattern of mixed results has been found in studies purely on corporate philanthropy. For example, Wokutch and Spencer (1987) found hints of a positive relationship between corporate philanthropy and financial performance. On the other hand, Seifert et al. (2004) did not find a significant philanthropy-performance relationship.

To resolve this empirical inconclusiveness and certain conceptual confusion found in the literature, we have undertaken this study to integrate and extend these arguments, and by doing so to provide a more complete picture of the corporate philanthropy–financial performance relationship. Based on resource dependence theory, and considering the managerial network and agency perspectives, we argue that within certain limits, corporate philanthropy helps firms to secure the critical resources controlled by various stakeholders and provides insurance-like protections that reduce the firms' exposure to the risk of losing critical resources. As corporate philanthropic contributions increase beyond a certain level, however, this positive effect will level off due to constraints on stakeholder support, and it will be further offset by increased direct costs and agency costs. Thus, the corporate philanthropy–financial performance relationship might best be described as an inverse U-shape, i.e., an increase in corporate philanthropy to a certain level is beneficial for financial performance, but after that level financial performance should level off and eventually decline.

Moreover, we argue that the benefits of corporate philanthropy will vary with the level of dynamism in a firm's operating environment. In a highly dynamic environment, the firm is likely to be more dependent on stakeholders for critical resources (Berman et al. 1999, 2005; Frooman 1999). In addition, corporate philanthropy functions as a more salient and reliable signal of a positive firm image and reputation among stakeholders, which in such situations facilitates corporate control of critical resources. As a result, environmental dynamism may complicate the hypothesized philanthropy-performance relationship. In a dynamic environment, the inverse U-shaped corporate philanthropy–financial performance relationship may change such that the same level of corporate philanthropy corresponds to a higher level of financial performance than it would in a less dynamic environment.

Theory and Hypotheses

Corporate philanthropy is generally considered a component of the larger domain of corporate social responsibility. It is, by definition, gifts given by corporations to social and charitable causes, such as support for education, culture, or the arts; minorities or health care; or for relief funds for victims of natural disasters (Godfrey 2005, Seifert et al. 2004). Corporate philanthropy often extends beyond areas that are directly associated with a corporation's economic activities or legal requirements. Among the four levels of corporate social responsibility identified by Carroll (1979)—economic, legal, ethical, and discretionary—corporate philanthropy fits within the discretionary category. Therefore, while there are growing social expectations that firms be more active in charitable causes, philanthropic contributions are generally described as purely voluntary (Hemingway and Maclagan 2004), and decisions concerning corporate philanthropy are often at management's discretion (Buchholtz et al. 1999, Carroll 1979).

Increasing stakeholder expectations for corporate philanthropy suggest that whether and to what extent a firm engages in charitable causes will have an impact on how stakeholders relate to the firm, which may in turn have effects on firm financial outcomes. Furthermore, to the extent that endorsing philanthropic causes is at the discretion of managers, the role of these managers should be taken into consideration foster to a more comprehensive understanding of the relationship between corporate philanthropy and corporate financial performance. In the remainder of this section, we shall integrate these perspectives and develop the argument that the philanthropy–financial performance relationship can best be captured as an inverse U-shape.

The Benefits of Corporate Philanthropy

To the extent that corporate philanthropy is prompted by the demands of socially conscious individuals, at least some of whom are stakeholders of concern to the firm, the relationship between corporate philanthropy and financial performance should be placed in the context of interaction between the firm (or the firm's top managers) and its stakeholders. Resource dependence theory is helpful in this regard because it emphasizes the impact of actors external to the firm on organizational decision making and its consequences (Pfeffer and Salancik 1978). The theory suggests that because the allocation and use of the resources necessary for a firm's continued survival are often not fully controlled by the firm, but rather by some key stakeholders, the firm faces uncertainty in securing those resources (Frooman 1999, Pfeffer and Salancik 1978). A firm thus should be concerned with addressing the concerns of its stakeholders to reduce the uncertainty associated with obtaining critical resources (Frooman 1999, Oliver 1991, Pfeffer and Salancik 1978). This view largely agrees with more

recent developments in discussions of stakeholder management, which suggest that a firm may take an instrumental approach to stakeholders to manage their impact, on the overall objectives of the firm (Berman et al. 1999, Freeman 1984, Jones 1995). Furthermore, to the extent that philanthropic activities are at the discretion of managers, top managers play an important role in facilitating the benefits a firm obtains from corporate philanthropy.

Resource Dependence and Corporate Philanthropy. Viewed from a resource dependence perspective, corporate philanthropy can be regarded as a means by which a firm can reduce the risks associated with resource acquisition (Berman et al. 1999, 2005; Haley 1991). As corporate philanthropy enhances a firm's public image, the firm's key stakeholders, including current and prospective employees, customers, suppliers, shareholders, and the community are likely to feel more positively about being associated with such a firm and thus more willing to cooperate by providing resources (Backhaus et al. 2002, Dutton et al. 1994, Frooman 1999). For example, it has been demonstrated that employees show greater commitment to a firm that has a good public image in supplying human capital (Dutton et al. 1994). Moreover, such firms are often perceived as an attractive employer by job seekers (Backhaus et al. 2002, Greening and Turban 2000, Turban and Greening 1996). Customers may respond to corporate philanthropy by increasing their demand for the firm's products or services, or by paying premium prices (Bhattacharya and Sen 2003). Furthermore, some investors, particularly certain institutional ones, are more willing to invest in firms known for pursuing corporate philanthropy (Barnett and Salomon 2006, Graves and Waddock 1994, Johnson and Greening 1999). This is evidenced by the steady demand for mutual funds that specialize in firms that meet certain social criteria, including philanthropic contributions. In addition, local communities may provide a philanthropic firm with tax breaks or favorable terms for using local infrastructure. Therefore, we propose that corporate philanthropy can function as a means for firms to secure the acquisition of critical resources controlled by stakeholders.

In addition to helping a firm secure the acquisition of new resources, corporate philanthropy may help a firm to reduce the risk of losing resources it already controls (Barnett and Salomon 2006; Brammer and Millington 2004a, b, 2005; Godfrey 2005). For example, a firm sometimes cannot avoid incidents that may create negative consequences for some of its stakeholders (Griffin 2004). A firm's product may be discovered to contain materials that endanger consumer health; the closure of a plant may lead to the layoff of employees; or the termination of a joint project with a supplier may directly reduce the supplier's expected returns. When such incidents occur, the firm risks losing the resource commitments and other support of its stakeholders (Godfrey 2005). However, a firm's prior investments in philanthropy can help to maintain valuable goodwill that offsets or ameliorates negative publicity (Barnett and Salomon 2006). Therefore, a reputation for corporate philanthropy can help protect a firm's relationships with its stakeholders, and thus reduce the firm's risk of losing critical resources (Fombrun et al. 2000, Godfrey 2005, Strong 1999).

The Role of Top Managers. Top managers make their strategic choices partly in response to external pressures and expectations (Hambrick and Finkelstein 1987, Pfeffer and Salancik 1978). In particular, managers use their discretion to structure an organization's relationships with its stakeholders to mitigate the pressures created by resource dependency (Oliver 1991, Pfeffer and Salancik 1978). With respect to corporate philanthropy, in addition to their direct involvement in decision making on philanthropic contributions (Werbel and Carter 2002), top managers serve as a vehicle to enhance the image or reputation building and signaling effects of corporate philanthropy.

These arguments are built on the assumption that the stakeholders have information about the firm's philanthropic contributions. However, because the stakeholders are not necessarily themselves the direct beneficiaries of corporate philanthropy, many of them may not be fully aware of the extent to which a firm engages in charitable giving. We argue that managers may be able to play an important role in publicizing their firms' active commitment to a social agenda (Galaskiewicz 1991). For example, they can seek public recognition of their firms' involvement in philanthropic causes by actively joining the social and civic networks of the philanthropic elite or participating in associations of firms that are active in corporate philanthropy (Galaskiewicz 1991). Furthermore, top managers may promote the professional management of corporate philanthropic activities by creating a specialized department (Brammer and Millington 2003) and hiring professional managers (Saiia et al. 2003). Professional managers or a specialized department exclusively devoted to corporate philanthropy may contribute to a higher regard for the firm's philanthropy among the community and other key stakeholders.

Corporate philanthropy can thus be considered an active attempt by a firm and its managers' to exercise influence over the allocation and control of critical resources. The enhanced reputation resulting from corporate philanthropy is likely to contribute to a firm's financial performance by enabling the firm to secure high-quality resources necessary for its survival and to take full advantage of those resources (Oliver 1991). Furthermore, top managers may be able to amplify the benefits by increasing the visibility of the firm's philanthropic activities to its stakeholders.

The Costs of Corporate Philanthropy

Corporate philanthropy, by definition, imposes a direct cost on the firm (Barnett and Salomon 2006, Ullmann 1985). These costs often include the diversion of valuable corporate resources such as cash, products, and facilities. In addition, corporate philanthropy may increase human resource costs. For example, as the level of corporate philanthropy increases, many firms find the need to establish independent departments devoted to corporate charitable programs (Brammer and Millington 2003, McWilliams and Siegel 2001, Saiia et al. 2003). Many corporate philanthropy programs also involve time and effort on the part of employees. Such practices are likely to increase the firms' overall human resource and administrative costs. These additional costs directly detract from the bottom line, and so can place firms active in corporate philanthropy at a competitive disadvantage relative to those who do not engage in such practices (Friedman 1970, Jensen 2002).

The costs of corporate philanthropy, however, may not be limited to such expenditures. According to the key argument of agency theory, managers may act in their own best interests, but at the expense of the firm's owners and other stakeholders (Jensen and Meckling 1976).[1] As a result, the various costs involved in agency relationships may often be very high, and the economic well-being of parties involved in the relationship may be damaged unless managerial misbehavior can be effectively constrained (Eisenhardt 1989, Jensen 1986, Jones 1995). In the case of corporate philanthropy, the potential for a conflict of goals between managers and stakeholders is likely to be salient. Although managerial discretion in corporate philanthropy may enable managers to act so as to enhance the benefits, it is equally reasonable to suspect that managerial discretion enables some top managers to use corporate philanthropy to enhance personal reputations within social circles or to further political or career agendas at the expense of the firm and its other stakeholders (Friedman 1970). In addition, to the extent that stakeholders believe that managers are not properly attending to their interests, they may respond by withholding resources and support, or by applying more strict control mechanisms such as stringent contracts and monitoring devices, which could constitute another form of agency cost.

An active involvement in corporate philanthropy may also send a signal to stakeholders that a firm has a large pool of slack resources (Preston and O'Bannon 1997, Seifert et al. 2004). Stakeholders are likely to realize that in such a situation managers may engage in opportunistic decision making not confined to corporate philanthropy (e.g., empire building through diversification). A key argument of the agency theory suggests that cash-rich businesses are more prone to agency hazards (Jensen and Meckling 1976). Although managers' potential misconduct in other areas is not a direct cost of corporate philanthropy, to the extent that investors and other stakeholders associate philanthropic contributions with excessive corporate resources and thus a higher possibility of managerial misbehavior, they will again be less willing to cooperate with the firm and more likely to withhold critical resources.

The Curvilinear Relationship Between Corporate Philanthropy and Financial Performance

So far the discussion suggests that the actual relationship between corporate philanthropy and financial performance is more complex than the simple positive, negative, or neutral one that many previous studies have assumed. Analyzing the likely trends of the specific benefits and costs and integrating these opposing effects yields a new vantage point from which an inverse U-shaped relationship between corporate philanthropy and corporate financial performance emerges.

The benefits of corporate philanthropy are expected to increase, at first due to positive stakeholder responses as well as the effect of organizational learning in the administration of philanthropic activities. However, increases in benefits (i.e., the slope of the curve for the total benefits of corporate philanthropy) would be expected to gradually level off for several reasons. First, despite stakeholders' willingness to support corporate charitable causes, there are limits to the amount and type of resources that these socially conscious stakeholders are able to control and thus potentially provide to the firm. These limitations put a natural constraint on the amount of benefit a firm can obtain from corporate philanthropy. Second, even if we were to assume that stakeholders are able to provide unlimited resources, a linear increase in the benefits remains very unlikely. When a firm invests excessively in corporate philanthropy, it may inevitably transfer some portion of these expenditures to its stakeholders in the forms of, for example, higher product prices, lower wages, or lower returns from their financial investments (McWilliams and Siegel 2001). Although socially conscious stakeholders are willing to sacrifice part of their financial wealth to support charitable firms, they nevertheless expect reasonable returns from their financial or human capital investments. With successive increases in corporate philanthropy, these stakeholders must, at some point, become unwilling to accept terms that continue to lower their financial returns, and thus start to withdraw from investing their resources in the firm.

The marginal benefit of corporate philanthropy should, therefore, eventually decrease as the amount of philanthropic contributions increases. As shown by curve A in Figure 1, the total benefits of corporate philanthropy will rise more slowly with each increase in philanthropic contributions.

The direct cost of corporate philanthropy, approximated as curve B, should increase at least dollar by

Figure 1   The Hypothesized Curvilinear Relationship Between Corporate Philanthropy and Corporate Financial Performance
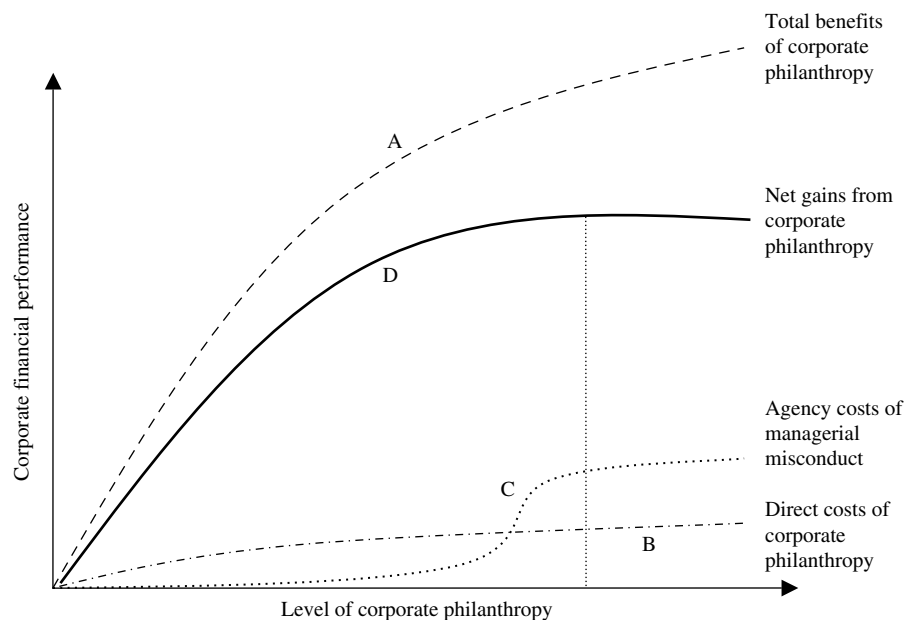
dollar with the amount of philanthropic monetary donations. Human resource and administrative costs may not increase linearly due to economies of scale as well as learning effects in the management of philanthropic activities (McWilliams and Siegel 2001). Taken together, the direct cost of corporate philanthropy is illustrated as curve B, which is close to linear, but gradually levels off with increasing philanthropic contributions.

Conversely, agency costs in terms of stakeholders' concerns about managerial misconduct are likely to be minimal at low levels of philanthropic contribution, but they would be expected to become more significant with increased philanthropy. When philanthropic contributions become excessive or go beyond the levels that key stakeholders can tolerate, they create greater concerns about the potential for misuse of corporate resources by managers. However, such agency costs should level off eventually, because extreme managerial misconduct is likely to be curbed by corporate control mechanisms such as monitoring and bonding, or even the replacement of the managers. Thus, agency costs would be expected to increase beyond a certain level of corporate philanthropy, but then level off gradually, demonstrating an approximate *S* shape (curve C).

Considering these countervailing forces simultaneously, an inverse U-shaped curvilinear relationship between corporate philanthropy and financial performance should emerge (curve D). Within certain limits, corporate philanthropy will help the firm secure critical resources controlled by various stakeholders and provide insurance-like protections that reduce the firm's exposure to the risk of losing critical resources. As corporate philanthropic contributions increase beyond a sufficiently high level, however, this positive effect will level off due to limits on stakeholder support, and increased direct costs and agency costs.

HYPOTHESIS 1. *Corporate philanthropy and corporate financial performance have an inverse U-shaped curvilinear relationship.*

The Moderating Effect of Environmental Dynamism
Environmental dynamism is the level of turbulence or instability in the competitive environment that increases the unpredictability of a firm's operational and financial outcomes (Boyd 1990, Dess and Beard 1984). We propose that environmental dynamism moderates the effects of corporate philanthropy on firm financial performance, and thus influences the shape of the philanthropy-performance relationship, for the following reasons:

First, according to resource dependence theory, environmental dynamism is a key component of environmental uncertainty, which is positively related to the dependence of a firm on its stakeholders for critical resources (Goll and Rasheed 2004, Pfeffer and Salancik 1978). When the environment is highly dynamic, it is more difficult to predict the impact on the firm of a future state of the environment or of any environmental change (Lawrence and Lorsch 1967, Milliken 1987). The unpredictable ebbs and flows of a dynamic environment increase the difficulty of securing a stable inflow of critical resources. Thus, greater relational flexibility and closer engagement with stakeholders become more crucial for exerting influence over stakeholders' decisions about resource allocation and use (Berman et al. 1999, 2005; Frooman 1999). In a turbulent environment, therefore, the ability of corporate philanthropy to ensure resource acquisition is likely to have greater value.

Second, a firm operating in a turbulent environment is more often exposed to unexpected events with negative consequences for some stakeholder groups. As such events occur more frequently, stakeholders become more likely to withdraw their loyalty to and cooperation with the firm, which will aggravate the difficulties of securing critical resources. In this situation, a positive public image resulting from corporate philanthropy should help the firm overcome these negative consequences (Godfrey 2005). Therefore, as environmental dynamism increases, the role of corporate philanthropy in protecting firms from losing control of their resources and from losing the support of stakeholders increases in importance.

Last, a dynamic environment is often associated with information-processing difficulties for stakeholders (Milliken 1987). In a stable environment, stakeholders often have diverse and more reliable avenues to obtain information about the firm's qualifications to determine whether they should establish a relationship with that firm. For example, a firm's willingness to honor implicit contracts with its stakeholders, an important factor to consider in cooperative relationships, can best be evaluated based on the firm's past behavior in similar situations. Moreover, explicit contractual means are available to help secure transaction partners' benefits. As the environment becomes more unpredictable, however, stakeholders will have few clear evaluation criteria to accurately predict firm behavior. In addition, they cannot rely entirely on explicit contractual means, because contracts are more likely to be incomplete due to the unpredictability of the situation (Hart 1995). In this setting, as other evaluation criteria become less available and less reliable, corporate philanthropy may function as a more salient signal to stakeholders about a firm's fundamental values and behavioral patterns (Godfrey 2005). When this signal is well received by the stakeholders, the firm is likely to receive stakeholder support and obtain an advantage in gaining access to the resources controlled by these stakeholders.

For these reasons, we propose that, in a highly dynamic environment, corporate philanthropy increases a firm's likelihood of survival and enables it to achieve greater financial success. In contrast, it is unlikely that environmental dynamism will have an impact on the direct costs associated with corporate philanthropy. It may affect the agency costs of excessive corporate philanthropy (i.e., the costs of reduced stakeholder willingness to provide critical resources) in both positive and negative ways, rendering the net effect unclear. We might expect that in a highly dynamic environment investors and other stakeholders would be more likely to associate corporate philanthropy with a higher likelihood of managerial misconduct, and thus greater agency costs. In particular, environmental dynamism increases information-gathering difficulties. A firm's senior managers always have better information than

outsiders about the firm, so the firm's board often finds it necessary to grant managers greater discretion in decision making in turbulent times (Galbraith 1973). Agency theorists have observed that although it increases information-processing capacity, granting managers greater discretion generates additional costs related to the inherently opportunistic behavior of managers (Jensen and Meckling 1992, Malone and Crowston 1994). A turbulent environment usually requires more resources to deal with unexpected incidents, so firms in dynamic industries are less likely to enjoy a large amount of free resources. Managers may have greater scope to misbehave in a dynamic environment, but they may be constrained by limited resources. In contrast, firms in stable industries are likely to be rich in slack resources, (Farrell 2001) giving senior managers more opportunitis to engage in corporate philanthropy to serve their own interests. Taken together, these arguments suggest that environmental dynamism can influence the costs associated with corporate philanthropy in various, offsetting ways.

In summary, in a highly dynamic environment, corporate philanthropy plays a more crucial role in securing critical resources, resulting in a greater financial benefit from corporate philanthropy. However, the costs associated with corporate philanthropy may not change significantly. Overall, these arguments suggest that the positive effects of corporate philanthropy on a firm's performance should become more pronounced in highly dynamic environments, and that the inverse U-shaped curve will be expected to demonstrate a steeper upward curvature and a higher plateau.

HYPOTHESIS 2. *Environmental dynamism moderates the inverse U-shaped corporate philanthropy–financial performance relationship in such a way that the same level of corporate philanthropy corresponds to a higher level of financial performance when the industry's environment is more dynamic.*

Methods

Data and Sample
Two main data sources were used for this study: Taft *Corporate Giving Directories* and Standard & Poor's COMPUSTAT. The Taft *Corporate Giving Directories*, provided information on corporate philanthropy. The first edition of the directory was published in the late 1970s, and a new edition has been added in each subsequent year. Each edition of the directory provides complete profiles of about 1,000 of the largest corporate direct giving programs and corporate-sponsored foundations in the United States, including information on specific giving in dollars, corporate direct gifts, nonmonetary gifts, matching gifts, and corporate sponsorships, when available. To be listed in the directory, programs

and foundations must give at least $200,000 per year in cash and nonmonetary gifts combined. (Before 1996, the minimum requirement was $250,000.) To avoid the potential influence of major U.S. tax code changes in 1986, data were collected starting in 1987 and then continuously for 13 years up to 1999.

This corporate-giving information was then merged with the Standard & Poor's COMPUSTAT series to obtain financial information about the companies in the data set. Because company identification numbers that could have been used to accurately match the COMPUSTAT data were not available in the Taft *Corporate Giving Directories*, the two databases were matched by company name, with a manual check of each match to ensure accuracy. Private firms or public firms not covered by the COMPUSTAT series were excluded from the analysis. To minimize the potential influence of factors that are difficult to control for, we excluded firms that went public during the sample period and those that went bankrupt, or merged, or were acquired by other firms. After further deleting firms with key dependent or explanatory variables missing in the COMPUSTAT series, the final panel data set included 817 companies and 4,019 firm-year observations over the sample period.[2]

Each of the firm-year observations was then matched to an industry peer that did not appear in the directories. Following previous research (e.g., Barber and Lyon 1996), each matched peer was a publicly traded firm drawn from the same three-digit SIC code as the sample firm, and was within 70% to 130% of the sample firm's asset size in the observation year. If more than one firm satisfied the above criteria for a match, the one with asset size closest to the sample firm was chosen. These peers formed a control group to be used to deal with potential sample selection bias (Heckman 1979).

Measurements

Two measures of corporate financial performance were employed: return on assets (ROA) and Tobin's *q*. *ROA* is a common accounting-based measure, defined as net income over total assets. Because there is often a lag between corporate giving and its impact on accounting-based performance, the effect of corporate giving was evaluated in terms of subsequent ROA, which is the average ROA of the three years following the giving year. To improve confidence in the results, we used another market-based financial performance measure as a dependent variable: Tobin's *q*. Tobin's *q* was approximated as the firm's market-to-book ratio, which explains more than 96% of the variance in a more sophisticated Tobin's *q* that would require arbitrary assumptions about depreciation and inflation rates for the calculation of the assets' replacement values (e.g., Lindenberg and Ross 1981). The market value numerator was the year-end market value of the firm's common stock plus the

book value of preferred stock and debt, and the book value denominator was year-end total assets. Use of a firm's market value for the numerator was based on the assumption that stock market investors hold rational expectations about the extent to which the present value of a firm's future profits varies with the firm's actions taken today. Evidence that a firm's charitable giving is correlated with market value would suggest that a firm's future returns are correlated with corporate giving today. Similar to ROA, Tobin's *q* was calculated by averaging data of the subsequent three years from the year of giving. The data source for both ROA and Tobin's *q* was the COMPUSTAT series.

The key independent variable, the level of corporate philanthropy, was assessed by the dollar amount of charitable giving by a firm in a given year, scaled by the firm's sales in the same period. Such scaling was adopted to control for the effects of firm size, because larger firms are generally better able to support higher levels of corporate charitable contributions than smaller firms (Stanwick and Stanwick 1998). It was, therefore, a measure of the relative amount of giving. The dollar amount of charitable giving was reported in the Taft *Corporate Giving Directories*, which included monetary and nonmonetary giving, as well as direct giving and giving through corporate-sponsored foundations.

The moderating variable, environmental dynamism, was measured using industry-level objective information. Following the methods of previous studies (e.g., Dess and Beard 1984), we regressed industry sales over the five years preceding the giving year (including the giving year) against time, and used the standard error of the regression coefficient related to a time dummy variable divided by the average value of the industry's sales to create a standardized index of industry dynamism. Information on industry sales is published by the U.S. Department of Commerce's Bureau of Economic Analysis. For a diversified firm that operated in more than one industry, overall industry sales were first computed as the average of the segment industry–level sales, weighted by segment sales as a proportion of the firm's total sales (Villalonga 2004). The overall industry sales were then regressed over the same five-year period.

A few key control variables were lagged corporate financial performance, firm-level R&D, and advertising intensities. Including a lagged dependent variable in a regression is a common approach (e.g., Beck and Katz 1995) used to reduce the serial correlation of errors often present in pooled time-series cross-sectional panel data. Previous research has demonstrated that investments in research and development (R&D) are a crucial input for generating intangible knowledge assets or innovations (Griliches 1979, Hall 1999), which enable firms to achieve higher financial performance. In addition to R&D, advertising is considered another key factor that helps create intangible assets that positively

affect a firm's financial performance (e.g., Hirschey and Weygandt 1985, Morck and Yeung 1991). In particular, advertising may serve as a proxy for product differentiation and entry barriers that enhance firm profitability (McWilliams and Siegel 2000). R&D and advertising intensities were measured in terms of the amount of R&D and advertising expenditure; each was scaled by total firm sales. The data source for all these variables was COMPUSTAT.

Firm size, firm age, and debt ratio were also included as control variables. Previous research has established that firm size plays an important role in explaining market returns (Fama and French 1992). Corporate governance theory predicts that leverage (debt ratio) affects agency costs and thereby influences firm performance (Jensen 1986). These two variables have been included in some other studies of the social performance–financial performance link (e.g., Seifert et al. 2004, Ullmann 1985, Waddock and Graves 1997). Firm age may influence financial performance because it captures differences in firm competitiveness associated with history. Also, older firms may have more agency conflicts, which in turn affect financial performance (Claessens and Djankov 1999). Given the evident positive skewness in firm size, the natural logarithm of total assets was used as a proxy for firm size. *Firm age* was measured as the number of years since the firm's initial public offering, or the firm's first listing in COMPUSTAT. *Debt ratio* was measured as the ratio of long-term debt to total assets.

All the above control variables were included in the first-stage probit model to predict the likelihood that a firm will engage in charitable contributions, but all were lagged by one additional year. Previous studies have linked firm size with corporate philanthropy because large firms have greater visibility, which would attract more scrutiny and a higher standard for charitable contributions (Adams and Hardwick 1998, Brammer and Millington 2004a, Saiia et al. 2003, Seifert et al. 2004). The same argument can be applied to firm age, because older firms would be expected to be more well known and thus to have greater visibility. A firm's debt ratio reflects the financial constraints on its managers to minimize discretionary expenditures such as philanthropic giving to ensure the continuing support of debt holders (Adams and Hardwick 1998, Brammer and Millington 2004a, Navarro 1988). Because corporate philanthropy is often considered a form of advertising that enhances firm image and reputation (Brammer and Millington 2004b, Seifert et al. 2004), firms with a greater need for advertising (higher advertising expenditure) should also be more likely to engage in corporate philanthropy. In addition, a good company image is generally more valuable for firms with differentiated and highly innovative products or services, which are often the results of R&D investments (McWilliams and Siegel 2000).

Therefore, to the extent that corporate philanthropy helps improve company image and reputation, R&D–intensive firms should be more likely to engage in corporate philanthropy.

Also included in the first–stage equation of the Heckman model were slack resources, industry-level giving, and industry dummy variables. Previous researchers have argued that the magnitude of a firm's slack resources is an important determinant of its corporate philanthropy (Brammer and Millington 2004b, Buchholtz et al. 1999, Seifert et al. 2004). Following Bourgeois (1981) and Singh (1986), each firm's current ratio (i.e., current assets divided by current liabilities) was taken as an indicator of its slack resources. A firm's charitable contributions could be affected by those of its peers in the same industry (Galaskiewicz and Burt 1991); thus, industry-level contributions were controlled for. This variable was calculated as the average amount given in each industry. Industry dummies were included in the regression because earlier research (e.g., Seifert et al. 2004) had shown that clear differences in corporate philanthropy exist among industries. Note that these industry-level control variables were not included in the second-stage models, because the measures of the second-stage dependent variable (ROA and Tobin's q) were industry mean-adjusted, and thus were less likely to be influenced by industry effects.

Estimation Method

The following equation was used to test the hypotheses:

$$\pi_{t+1} = \beta_0 + \beta_1 \pi_t + \beta_2 \, Giving_t + \beta_3 \, Giving_t^2$$
$$+ \beta_4 \, Dynamism_t + \beta_5 \, Giving_t * Dynamism_t$$
$$+ \beta_6 \, Giving_t^2 * Dynamism_t + \beta_7 X_t + \varepsilon_t,$$

where π_{t+1} and π_t are corporate financial performance and its lagged value. X is a set of other control variables that are expected to have a bearing on corporate financial performance. *Giving* is a continuous variable that represents the level of giving for each firm-year observation. *Dynamism* represents the level of industry dynamism. β_0 to β_7 are the parameters to be estimated, and ε is an error term.

One main question of interest was whether the coefficient of *Giving* (β_2) and the other coefficients associated with *Giving* (β_3, β_5, and β_6) measured a real effect of the levels of charitable giving on corporate financial performance. Because our sample was confined to firms that were reported in the Taft *Corporate Giving Directories*, the test of the hypothesized relationship between charitable contributions and corporate financial performance was limited to firms that engage in charitable giving. Simply regressing with this sample of firms that engaged in charitable contributions would not be appropriate, because firms that gave may well have had different characteristics from those that did not (or did not

give enough to be listed in the directory). Thus, it is possible that factors that affect whether firms engage in charitable giving could be correlated with the dependent variable, the financial performance of the firm. This suggests that the coefficients of the terms associated with *Giving* would be correlated with the error term, and thus the ordinary least squares (OLS) or generalized least squares (GLS) estimates of those coefficients would be biased.

To avoid any such sample selection bias, the effect of charitable contributions on corporate financial performance was estimated using the Heckman selection model (Heckman 1979). The Heckman model includes two equations: The first (selection) equation estimates the likelihood of firms' engaging in charitable contributions by applying a probit model to the entire sample of firms, including firms in both the main sample and those in a control group. At this stage, an adjustment term called the "inverse Mills ratio" or "correction for selection (λ)" is calculated. In the second equation, the sample is limited to the main sample of firms that engage in charitable giving. In this equation, the corporate financial performance model is reestimated with the "correction for selection" included as a control variable (Heckman 1979). Therefore, the Heckman two-stage model corrects for sample selection bias because parameter estimates from the first-stage probit model, which are based on information that represents all firms in the population, are incorporated in the second stage.

Note that while the second stage of a Heckman model is generally an OLS regression, using OLS to estimate panel data could result in biased estimates due to the potential presence of heteroscedasticity and autocorrelation (Greene 1997). We invoked two measures to address these concerns. First, as was mentioned earlier, including a lagged dependent variable in the regression reduced the influence of autocorrelation. Second, we ran the regression with panel-corrected standard errors (PCSEs) to deal with panel heteroscedasticity and potential contemporaneous error correlation.[3]

Table 1   Descriptive Statistics and Correlation Matrices

Panel A: Heckman first-stage variables

Variables	Mean	s. d.	1	2	3	4	5	6	7
Dependent variable at t									
1. Giving choice dummy	0.501	0.499							
Independent variables at t − 1									
2. Slack resources	1.591	0.782	0.17*						
3. R&D	0.013	0.030	0.14*	0.08*					
4. Advertising	0.011	0.038	0.06*	0.06*	0.07*				
5. Firm size	7.864	1.567	0.15*	−0.16*	−0.00	−0.11*			
6. Age	21.24	11.29	0.10*	−0.21*	0.01	0.01	0.42*		
7. Debt ratio	0.660	0.221	−0.04*	−0.35*	−0.21*	−0.07*	0.24*	0.12*	
8. Industry level of giving	0.001	0.006	0.05*	0.05*	0.06*	0.02	−0.07*	−0.12*	−0.02

* Significant at the $p < 0.05$ level; $N = 8{,}038$.

Panel B: Heckman second-stage variables

Variables	Mean	s. d.	1	2	3	4	5	6	7	8	9	10	11	12
Dependent variables at t + 1[a]														
1. ROA	0.019	0.073												
2. Tobin's q[b]	0.309	1.181	0.49*											
Independent variables at t														
3. ROA	0.019	0.075	0.79*	0.43*										
4. Tobin's q[b]	0.298	1.094	0.45*	0.81*	0.50*									
5. Amount of giving/sales	0	0.004	0.02	0.03*	0.01	0.03*								
6. R&D	0.017	0.032	0.08*	0.24*	0.09*	0.20*	0.10*							
7. Advertising	0.015	0.040	0.11*	0.15*	0.13*	0.16*	0.00	0.08*						
8. Firm size	8.042	1.541	−0.04*	−0.03*	−0.06	−0.05*	−0.03*	0.00	−0.12*					
9. Age	23.17	12.42	−0.06*	−0.00	−0.08*	−0.00	−0.02*	−0.01	−0.02	0.41*				
10. Debt ratio	0.652	0.211	−0.12*	−0.06*	−0.19	−0.07*	−0.03*	−0.18*	−0.07*	0.24*	0.13*			
11. Industry dynamism	0	0.020	−0.03*	−0.02	−0.04*	−0.01	0.00	−0.06*	0.01	−0.06*	0.01	0.07*		
12. Inverse Mills ratio (ROA)	0.695	0.261	−0.02	−0.11*	−0.02*	−0.10*	−0.02	−0.28*	−0.22*	−0.31*	−0.32*	0.07*	0.02	
13. Inverse Mills ratio (Tobin's q)	0.709	0.258	−0.02*	−0.10*	−0.02*	−0.09*	−0.02	−0.26*	−0.23*	−0.35*	−0.33*	0.06*	0.02	0.85*

[a] Calculated by averaging the values for years in $t + 1$, $t + 2$, and $t + 3$; [b]: $N = 3{,}997$.
* Significant at the $p < 0.05$ level; $N = 4{,}019$.

Results

Table 1 shows descriptive statistics and correlation matrices for the main variables used in the study. Panel A includes the variables used in the first-stage probit model of the two-stage Heckman analysis. As would be expected, the level of slack resources was significantly correlated with a firm's likelihood of engaging in corporate charitable giving. In addition, R&D, advertising, firm size, firm age, and the industry's level of giving were found to have a positive correlation with the likelihood of giving, but firm debt ratio had a negative correlation. The descriptive statistics and correlation matrix for key variables used in the second stage of the Heckman analysis are presented in Panel B. The correlations between the level of charitable giving and subsequent performance measures (ROA and Tobin's q) were small (ranging from 0.02 to 0.03), although the signs were positive. Industry dynamism was not found to have a significant correlation with subsequent Tobin's q, but was negatively and significantly correlated with ROA.

First-Stage Giving Choice Estimates

Table 2 shows the results of the first-stage Heckman selection model, which was a probit regression of giving choice against factors thought to affect whether a firm chooses to engage in corporate giving. The dependent variable was a dummy variable indicating whether a firm engaged in giving. A one-year lag was used between the dependent and the independent variables. The results presented come from two first-stage giving choice models. Model 1 was a baseline model that consisted of an intercept term and measures of firm-level variables: Slack resources, firm size, firm age, debt ratio, R&D, and advertising expenditures. Model 2 introduced industry-level giving and industry dummy variables as additional independent variables that were expected to have an impact on a firm's giving choices.

The results from the first-stage analysis were consistent with expectations. In Model 1, firms with a higher level of slack resources were found to be more likely to engage in corporate giving, whereas firms with greater debt showed the opposite tendency. The coefficients on firm size and firm age had positive and significant signs, suggesting that larger and older firms are more likely to engage in giving. Also consistent with our predictions, R&D and advertising were found to positively affect firms' tendencies to engage in giving. In Model 2, the coefficient on industry average giving had the expected positive sign. The change in χ^2, or the deviance, (657.2, $p < 0.001$) at the bottom of Table 2 indicates that Model 2 had a better fit. Therefore, the results from Model 2 were used in formulating the inverse Mills ratio for the multiple regression estimates presented in the second-stage financial performance model.

Second-Stage Financial Performance Estimates

Table 3 presents the results from the Heckman model's second-stage estimation using the inverse Mills ratio from the probit model in Table 2 (Model 2) to account for selection bias in the firms' charitable giving data. Panels A and B correspond to the models using the two different measures of financial performance—ROA and Tobin's q—as dependent variables. Hierarchical multiple regression analysis was applied to the model in each panel to test for the hypothesized curvilinear relationship between corporate charitable giving and corporate financial performance, and the quadratic-by-linear interaction between giving and industry dynamism.

Models A1 and B1 report the effects of a few basic control variables: Lagged financial performance, debt ratio, firm size, firm age, and industry dynamism. Entering these variables into the regressions yielded significant equations for both ROA and Tobin's q. Most of the variables had the expected signs and significant effects. Lagged financial performance and firm size showed positive and significant effects on both measures of financial performance. Firm age was found to affect ROA positively, but revealed no significant effect on Tobin's q. Firms with greater levels of debt tended to have lower levels of financial performance, particularly in terms of Tobin's q. On the other hand, industry dynamism did not show a significant effect on either Tobin's q or ROA.

Table 2 Probit Estimates from a Heckman First-Stage Sample Selection Model[a] (Regression of Giving Choice at t on Firm and Industry Descriptors at $t - 1$)

Independent variables	Model 1	Model 2
Intercept	−2.178***	−2.369***
	(0.129)	(0.158)
Slack resources	0.072***	0.118***
	(0.017)	(0.019)
Size	0.201***	0.198***
	(0.009)	(0.009)
Age	0.005***	0.005***
	(0.001)	(0.001)
R&D intensity	5.317***	4.659***
	(0.471)	(0.490)
Debt ratio	−0.159*	−0.119*
	(0.068)	(0.058)
Advertising	1.872***	2.109***
	(0.291)	(0.448)
Industry giving		7.824***
		(2.369)
2-digit SIC classification		***
N	8,038	8,038
Log likelihood (LL)	−6,659.7	−6,331.1
Deviance (−2LL or χ^2 change vs. Model 1)		657.2***

Notes. Significant at the $^+p < 0.10$; $^*p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$ level.

[a] Standard errors are shown in parentheses. Industry dummies were included, but are not shown.

Table 3 Estimates for Heckman Second-Stage Financial Performance Models[a] (Regression of Corporate Financial Performance at $t+1$ on Firm and Industry Descriptors at t)

Panel A: Panel regression results for the effect of charitable giving on industry-adjusted ROA (with PCSEs)

Variables Models	DV: ROA						
	A1	A2	A3	A4	A5	A6	A7
Intercept	−0.241*** (0.046)	−0.238*** (0.046)	−0.235*** (0.046)	−0.230*** (0.046)	−0.221*** (0.047)	−0.215*** (0.047)	−0.223*** (0.047)
Lagged ROA	0.801*** (0.035)	0.800*** (0.035)	0.800*** (0.035)	0.798*** (0.035)	0.792*** (0.035)	0.788*** (0.035)	0.791*** (0.035)
Debt ratio	−0.006 (0.005)	−0.006 (0.005)	−0.006 (0.005)	−0.006 (0.005)	−0.006 (0.005)	−0.005 (0.005)	−0.006 (0.005)
Size	0.012*** (0.003)	0.012*** (0.003)	0.012*** (0.003)	0.012*** (0.003)	0.012*** (0.003)	0.012*** (0.003)	0.012*** (0.003)
Age[b]	0.499*** (0.118)	0.497*** (0.118)	0.496*** (0.118)	0.491*** (0.119)	0.485*** (0.119)	0.476*** (0.119)	0.479*** (0.119)
Industry dynamism	−0.036 (0.031)	−0.035 (0.031)	−0.034 (0.031)	−0.033 (0.031)	−0.034 (0.031)	−0.033 (0.030)	−0.031 (0.029)
R&D		0.283*** (0.050)	0.275*** (0.050)	0.261*** (0.050)	0.257*** (0.050)	0.250*** (0.050)	0.254*** (0.050)
Advertising			0.090*** (0.027)	0.090*** (0.027)	0.085** (0.027)	0.085** (0.027)	0.087*** (0.027)
Amount of giving/sales				0.151 (0.120)	0.840* (0.352)	1.094* (0.387)	1.077* (0.380)
(Giving/sales)^2					−9.204** (3.022)	−13.79*** (3.225)	−21.34*** (4.558)
Giving × dynamism[c]						0.016 (0.015)	0.039** (0.013)
Giving^2 × dynamism[c]							−0.251* (0.121)
Inverse Mills ratio	0.069*** (0.016)	0.064*** (0.016)	0.062*** (0.016)	0.060*** (0.016)	0.057*** (0.017)	0.057*** (0.017)	0.052*** (0.017)
N	4,019	4,019	4,019	4,019	4,019	4,019	4,019
F value	481.30**	499.63**	499.11**	477.01**	472.15**	452.97**	443.17**
R^2	0.684	0.704	0.714	0.715	0.722	0.723	0.727
ΔR^2		0.020**	0.010**	0.001	0.007**	0.001	0.003**

Panel B: Panel regression results for the effect of charitable giving on industry-adjusted Tobin's q with PCSEs)

Variables Models	DV: Tobin's q						
	B1	B2	B3	B4	B5	B6	B7
Intercept	−1.561*** (0.363)	−1.557*** (0.364)	−1.531*** (0.365)	−1.490*** (0.363)	−1.516*** (0.364)	−1.448*** (0.365)	−1,390*** (0.366)
Lagged Tobin's q	0.777*** (0.029)	0.776*** (0.029)	0.775*** (0.029)	0.774*** (0.029)	0.765*** (0.030)	0.756*** (0.030)	0.752*** (0.030)
Debt ratio	−0.202** (0.076)	−0.201** (0.076)	−0.201** (0.076)	−0.201** (0.076)	−0.195* (0.076)	−0.181+ (0.076)	−0.180+ (0.076)
Size	0.100*** (0.022)	0.096*** (0.022)	0.096*** (0.022)	0.096*** (0.022)	0.089*** (0.023)	0.086*** (0.023)	0.086*** (0.023)
Age	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)
Industry dynamism	−0.165 (0.311)	−0.168 (0.311)	−0.171 (0.311)	−0.183 (0.311)	−0.193 (0.311)	−0.203 (0.312)	−0.221 (0.312)
R&D		4.555*** (0.471)	4.254*** (0.471)	4.366*** (0.473)	4.295*** (0.474)	4.298*** (0.474)	4.284*** (0.475)
Advertising			0.638* (0.302)	0.629* (0.302)	0.575+ (0.302)	0.554+ (0.303)	0.549+ (0.303)
Amount of giving/sales				−3.001+ (1.572)	13.87** (4.740)	16.50*** (5.019)	18.49*** (5.231)
(Giving/sales)^{2c}					−0.192** (0.070)	−0.299** (0.103)	−0.359** (0.109)
Giving × dynamism[c]						0.395+ (0.234)	0.242** (0.101)
Giving^2 × dynamism[c]							4.219 (3.967)
Inverse Mills ratio	0.511*** (0.146)	0.505** (0.146)	0.512*** (0.147)	0.503*** (0.147)	0.481*** (0.149)	0.475*** (0.149)	0.458*** (0.150)
N	3,997	3,997	3,997	3,997	3,997	3,997	3,997
F value	487.51**	527.89**	524.52**	501.90**	503.79**	484.51**	473.50**
R^2	0.688	0.716	0.725	0.726	0.736	0.738	0.741
ΔR^2		0.028**	0.009**	0.001**	0.010**	0.002**	0.003**

Notes. Significant at the $^+p < 0.10$; $^*p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$ level.
[a] Standard errors are shown in parentheses; [b] the coefficients shown were multiplied by 10^3; [c] the coefficients shown were multiplied by 10^{-3}.

In the subsequent two sets of models (Models A2 and A3; and B2 and B3), R&D intensity and advertising intensity were added into the equation. R&D and advertising intensities consistently showed significant positive effects on both measures of financial performance. When ROA was used as the financial performance measure, adding R&D and advertising yielded increases in R^2 of 0.020 and 0.010, respectively; the increases were 0.028 and 0.009 when Tobin's q was the performance measure. The significant increases in R^2, and the results of the F-tests suggest that the addition of each of the two variables yielded a better-specified model.

In Models A4 and B4, the level of corporate giving was added to assess its possible linear effects on financial performance measures; it was found to have no significant effect on ROA. Its effect on Tobin's q was negative, but only marginally significant (at $p < 0.10$). This failure to find a significant linear relationship between corporate philanthropic giving and ROA is consistent with the findings of previous empirical studies (Berman et al. 1999, Griffin and Mahon 1997, Seifert et al. 2004).

When the quadratic term for the giving amount was entered in Models A5 and B5 to assess the possibility of a curvilinear relationship with financial performance, however, the coefficients on both the linear giving term and the quadratic term were highly significant for both measures of financial performance (at least at the $p < 0.05$ level). The positive coefficient on the linear term and the negative sign on the quadratic term are consistent with the predicted curvilinear (inverse U-shaped) effect of charitable giving on corporate financial performance. Further evidence of a quadratic charitable giving function is provided by comparing the variance explained by the models. Including both giving and its squared term led to increases in the R^2 term (ΔR^2 0.007 and 0.010 in the two panels). F-tests on those models suggest that adding the quadratic giving variable yielded better-specified models. Thus, Hypothesis 1 was strongly supported in terms of both performance measures.

In Models A6 and B6 and Models A7 and B7, the linear and quadratic-by-linear interactions of charitable giving and industry dynamism were added. When only a linear interaction was added (Models A6 and B6), the interaction of industry dynamism and the amount of giving did not significantly affect ROA, while the interaction had a positive but only marginally significant effect on Tobin's q. When a quadratic-by-linear interaction was then added (Models A7 and B7), the coefficient on the linear interaction in both models became significant with a positive sign. The coefficient on the quadratic-by-linear interaction was found to be negative and significant for ROA, but insignificant for Tobin's q. Furthermore, including the interaction term for industry dynamism and giving-squared led to better-specified models for both performance measures, because F-tests

Figure 2 Observed Moderating Effects of Industry Dynamism on the Relationships Between the Level of Charitable Giving and Corporate Financial Performance (ROA)
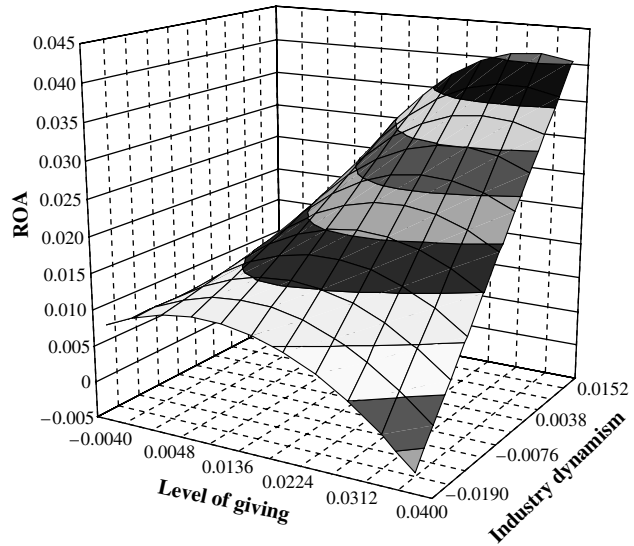
on the changes in R^2 suggested that the differences were significant.

These results provided some support for Hypothesis 2, indicating that industry dynamism positively moderates the inverse U-shaped giving–financial performance relationship. To gain further insights into these moderating effects, the relationship between corporate giving and ROA and that between corporate giving and Tobin's q were plotted (Figures 2 and 3, respectively) to show how industry dynamism moderates these relationships. Figures 2 and 3 demonstrate that both the relationship between charitable giving and corporate financial perfor-

Figure 3 Observed Moderating Effects of Industry Dynamism on the Relationships Between the Level of Charitable Giving and Corporate Financial Performance (Tobin's q)
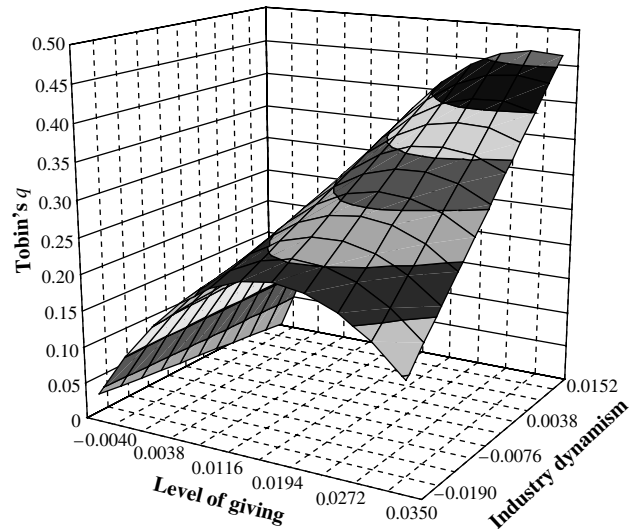
mance (ROA and Tobin's q), and the moderating effect of industry dynamism are largely in the direction predicted in the hypothesis. The curvilinear relationships between corporate giving and corporate financial performance became more pronounced with an increase in industry dynamism. In both figures, the positive moderating effect of industry dynamism seems to dominate, because the same level of corporate philanthropy corresponds to better financial performance when industry dynamism is high. There is a notable difference, however, between the two figures. Figure 3 suggests that an inverse U-shaped giving–Tobin's q relationship is present at all levels of industry dynamism, although the curve is more pronounced with high dynamism. In contrast, Figure 2 does not show an inverse U-shaped giving-ROA relationship in a highly stable (i.e., low dynamism) operating environment. In fact, an increase in corporate charitable giving is negatively associated with ROA at a low level of industry dynamism, but this relationship gradually turns into an inverse U-shape with an increase in industry dynamism. This suggests that in a very stable operational environment, corporate philanthropic giving, even at a low level, may not benefit the firm. Although corporate philanthropy still shows some positive effect on market-based financial performance (as measured by Tobin's q), it reduces accounting-based measures of performance (as measured by ROA).

An additional issue of interest is the magnitude of the effect of giving on corporate financial performance relative to that of other key variables included in our analysis, such as R&D and advertising. Figures 2 and 3 compare the marginal effects on financial performance of R&D, advertising, and the level of giving. Note that because both the scale and units are different across these three variables, standardized coefficients were calculated for these variables to make them directly comparable.[4]

For example, when ROA is used as a performance measure (the chart on the left in Figure 4), the standardized coefficients (the slopes of the lines) for R&D and advertising are 0.005 and 0.003, respectively. This suggests that if firms increased R&D/advertising expenditure by one standard deviation, ROA would, on average, increase by 0.5% to 0.3%. At the mean level of giving, the standardized slope is 0.003. Thus, R&D is associated with a higher level of ROA compared to advertising and giving, while the latter two have similar impacts on ROA. At higher levels of giving, however, the marginal benefit of giving falls below that of advertising. When Tobin's q is used as a performance measure (the chart on the right in Figure 4), the standardized coefficients for R&D, advertising, and giving are 0.139, 0.023, and 0.056, respectively. Again, R&D has the greatest impact on Tobin's q. However, philanthropic giving (at the mean level) seems to have a greater impact on Tobin's q than does advertising expenditure. Despite the decreasing marginal effect of giving, this trend seems to continue beyond five standard deviations from the mean.

Figure 4 suggests that at the mean level of corporate giving, a unit of R&D provides greater marginal benefit than a unit of corporate giving. However, the financial effect of advertising is either similar to (in terms of ROA), or smaller than (in terms of Tobin's q) that of corporate giving. The above results may also suggest that there is some opportunity cost of philanthropic giving, especially in comparison to investments in R&D. However, the existence of opportunity cost is unlikely to eliminate the value of corporate giving, because different types of investments are often complementary rather than substitutive. For example, without a reasonable level of investment in other areas, including advertising and corporate philanthropy, a firm may not obtain as much benefit from its R&D. Similarly, without making any investments in other areas, corporate giving might not bring a firm much financial benefit.

Figure 4 Comparison of the Marginal Effects of Advertising, R&D, and Giving on Financial Performance (Left: ROA; Right: Tobin's q)
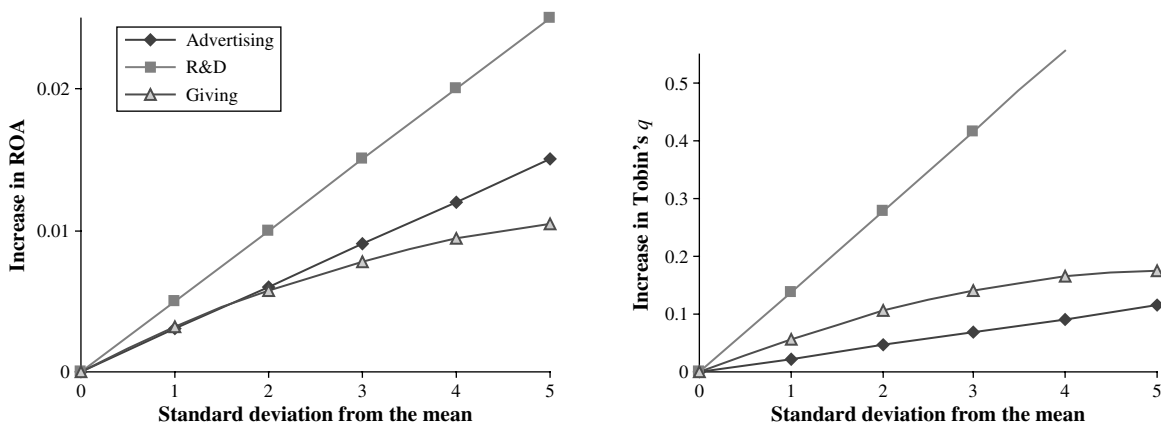
Discussion

This study has argued that, on the one hand, corporate philanthropy enhances a firm's financial performance by enabling the firm to gain greater control over stakeholder resources. On the other hand, as the amount of philanthropic contributions continues to increase, agency costs and direct costs eventually become dominant. An inverse U-shaped relationship between corporate philanthropy and corporate financial performance was therefore predicted. This prediction was strongly supported by analyses based on both accounting- and market-based performance measures. Moreover, we found that the inverse U-shaped relationship between corporate philanthropy and corporate financial performance is stronger in more dynamic industries.

These findings make a number of contributions to our understanding of corporate philanthropy and corporate social activity in general. First, to the best of our knowledge, no previous study has so clearly demonstrated the existence of the curvilinear relationship between corporate philanthropy and financial performance. Even with respect to corporate social performance in general, we are only aware of a few studies, including Barnett and Salomon (2006), Bowman and Haire (1975), and Sturdivant and Ginter (1977) that have alluded to the possibility of a curvilinear relationship. This study is therefore among the first to provide detailed arguments and strong empirical support for a curvilinear relationship between corporate philanthropy and financial performance. The consistent pattern found using both accounting- and market-based performance measures strengthens the results.

Second, the mechanisms through which corporate philanthropy might affect financial performance have not been discussed in sufficient detail in past studies (Orlitzky et al. 2003, Rowley and Berman 2000, Ullmann 1985). We have articulated this process in detail, drawing from, but further integrating and extending, previous arguments. In particular, by building on and extending previous arguments for a positive relationship between corporate philanthropy and corporate financial performance (File and Prince 1998, Fombrun et al. 2000, Godfrey 2005, Saiia et al. 2003), this study has illustrated how the positive financial performance effect of corporate philanthropy might arise from greater stakeholder cooperation and support and a resulting greater level of security and control over critical resources. In addition, we have proposed some potential negative effects of excessive corporate philanthropy on financial performance in terms of direct and agency costs.

Third, the finding that industry dynamism has a significant moderating effect on the philanthropy-performance relationship suggests that a firm's operating environment plays an important role in determining the extent to which it can benefit from corporate philanthropy. As Barnett (2007) and Rowley and Berman (2000) have

noted, it is important to examine the boundary conditions that potentially change the relationship between corporate social performance and corporate financial performance. This argument and the supporting results are also in line with a main tenet of contingency theory (Galbraith 1973, Lawrence and Lorsch 1967), which argues that the effectiveness of a particular management practice depends on environmental factors. This study has shown that firms operating in a highly dynamic environment can gain greater benefits from corporate philanthropy due to their greater resource dependence on their stakeholders and the stronger signaling effect of a firm's positive image and reputation in dynamic industries. In addition, the results suggest that corporate philanthropy contributes to a firm's management of environmental uncertainty, which has not been emphasized previously. Thus, this analysis helps paint a more complete picture of the relationship between corporate philanthropy and corporate financial performance.

The results of this study have several implications for managers. The findings suggest that the right question for managers to ask is not whether corporate philanthropic contributions are uniformly good, bad, or neutral for their firms' financial performance, but rather what range of philanthropic contributions is most likely to be effective. The results of this study suggest that it would be helpful for firms that do not engage in corporate philanthropy, or that engage in an amount less than that which would maximize their financial performance to be more actively involved in corporate philanthropy to fully realize their financial benefits. To do so, managers need to develop an understanding that corporate philanthropy is a way of doing business and that it is, in fact, good business (Waddock and Graves 1997). In addition, when they make decisions about philanthropic contributions, managers need to be more wary of stakeholders' responses. Excessive philanthropy that cannot be readily justified in the eyes of stakeholders may lead them to withhold critical resources from the firm. Therefore, when contributions are large, managers need to provide credible justifications for their philanthropy to alleviate stakeholders' concerns.

To the extent that the effect of corporate philanthropy on corporate financial performance changes with the level of environmental turbulence, managers should adapt the firm's philanthropy accordingly. In particular, given that firms operating in a highly dynamic industrial environment benefit more from active philanthropy, managers of such firms may need to make every effort to improve their public image by, for example, donating to social causes and helping the needy to effectively control critical resources necessary for dealing with environmental turbulence.

Much remains to be learned about the corporate philanthropy–financial performance relationship. First, although resource dependency, the corporate reputation,

stakeholder cooperation, and direct and agency costs have been proposed as potential linking mechanisms between corporate philanthropy and financial performance, these variables were not directly measured in this study. The large number of firms included in this study and its reliance on archived data prevented us from collecting information on these variables. Thus, it would be informative if, rather than inferring such linking mechanisms, future research could focus on a small number of firms and directly collect data on these constructs through, for example, survey methods and content analysis of mass media reports.

Second, as longitudinal data on other dimensions of corporate social performance become available, it would be useful to examine whether the effects on financial performance that we have found for corporate philanthropy hold across other dimensions of corporate social performance. As noted by several authors (Griffin and Mahon 1997, Hillman and Keim 2001, Rowley and Berman 2000), aggregating multiple dimensions of corporate social performance into a composite measure may limit our understanding of corporate social and financial performance. An investigation isolating each individual dimension of social performance would be desirable. We suggest that in addition to the databases commonly used in evaluating corporate social performance, such as the *Fortune* reputation survey or the Kinder, Lydenberg, Domini and Company (KLD) index, other data sources that provide more detail about each individual dimension should be sought or developed (Harrison and Freeman 1999).

This study examined the moderating effect of industry dynamism on the philanthropy–financial performance relationship, but it is reasonable to expect that other industry- or firm-level factors may also affect this relationship. For example, resource-based theories and industrial economics may be integrated into the arguments made in this paper to explore how the benefits of philanthropic contributions may vary with each firm's unique circumstances (McWilliams and Siegel 2001) and other industry characteristics (Fry et al. 1982). Such consideration of other possible moderators may shed light on variations in the philanthropy-performance relationship contingent on industry- and firm-specific features.

Our finding of a positive moderating effect of industry dynamism also implies that firms operating in a more dynamic environment should engage in more philanthropic giving. This implication, however, does not seem to be entirely consistent with the findings of some previous studies. For example, building on resource dependence theory, Berman et al. (2005) hypothesized a positive relationship between industry dynamism and several aspects of stakeholder relations (including the community dimension, which is a construct close to corporate philanthropy), but did not find empirical support for this argument. Of course, these differences in

results may be explained by variations in the extent to which firms focus on maximizing financial performance in making policies regarding their community relations, perhaps due to noneconomic corporate goals or mangers' self-serving behaviors. However, it is possible that the difference in results could be caused by other notable differences between these studies. For example, are differences in data and methodology the sources of the difference? Does corporate philanthropy differ from other stakeholder dimensions in relating to a firm's operational environment? Or does the hypothesized curvilinear effect or the inclusion or exclusion of other control variables cause the difference? Effort to more closely explore the relationship among the operating environment, corporate philanthropy, and other dimensions of corporate social performance is an avenue for future research.

Endnotes
[1] Although, according to traditional agency theory, shareholders are the primary principals that are concerned with managerial misconduct (Berle and Means 1932), the argument can be extended to other stakeholders such as employees, suppliers, and customers. To the extent that these stakeholders have contracts with the firm, they are also influenced by the behavior of the firm's managers and are concerned with managerial misconduct. Thus, Hill and Jones (1992, p. 138) stated that "an agency conflict is inherent in the relationship between management and all other stakeholders."

[2] The number of observations used in the regressions may vary slightly from this number due to occasional missing financial information used to compute other key variables.

[3] Because some recent research (e.g., Kristensen and Wawro 2006) has argued that PCSEs with lag specification can be problematic if observation-specific effects are not properly controlled for, we performed firm fixed-effect estimations as a robustness test. Because firm fixed-effect estimates can eliminate much of the selection bias (Campa and Kedia 2002, Lafontaine and Shaw 1999), we did not find a significant sample selection parameter (inverse Mills ratio) using Heckman's two-stage model. We obtained consistent results for several key variables of interest, although with somewhat weaker effects. Detailed results of the firm fixed-effect estimation are available from the authors on request.

[4] Please note that because the relationship between corporate philanthropy and financial performance is shown to be curvilinear, the marginal change in financial performance constantly varies with the level of giving. However, given a certain level of philanthropic giving, we were able to compute

the marginal increase in financial performance (i.e., $\beta_{Giving} + 2\beta^2_{Giving} * Giving$, the slope of the curve at a certain level of giving) and compare it with those of advertising and R&D.

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