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Helping Others to Help Business?

*Investigating the Relationship between Corporate Charitable
Contributions and Financial Performance*

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Abstract: There has been substantial growth in the level of charitable giving by firms, with many corporations hoping to attract new customers through an increase in social responsibility. This paper investigated the effect of this increase in corporate giving on sales using a fixed effects panel method. An investigation for the years 2001-2007 found no significant relationship between corporate giving and sales.

Introduction

Toyota Motor Corporation states it is “moving forward,” selling a new line of cars designed to be environmentally more efficient.¹ Similarly, Exxon Mobil Corporation claims to be “taking on the world’s toughest energy challenges” in its attempts to create more efficient and cleaner fuel.² While these are only two examples of a corporation’s attempt to link both its product and its service record in an advertisement, corporate social responsibility, both in the community and in terms of the environment, is becoming increasingly commonplace. For instance, Bank of America created Team Bank of America, a program designed to allow employees to volunteer and help build the surrounding community.³ On many companies’ websites, information can be found detailing their involvement in reducing environmental pollution, in helping the surrounding community, or their various donations to charities.

In today’s increasingly competitive market, companies seek to not only convince the public of the value of their product, but also to be perceived as one of the firms that best serves the needs of the community and the surrounding world. The latest trend in the corporate world is the idea that a company needs to be “good” in order to gain both customers and employees. In doing so, social responsibility has become a new strategic tool utilized by corporations. For example, any trip to Target concludes with a huge sign at the exit describing Target’s commitment to the community, stating that the company donates 5% of its income, or about \$3

¹ Toyota Motor Corp (2008). “Toyota Cars, Trucks, SUVs, and Accessories.” <<http://www.toyota.com/>> 07 April 2008.

² ExxonMobil Corporation (2008). “Energy and Environment.” <<http://www.exxonmobil.com/Corporate/energy.aspx>> 08 April 2008.

³ Bank of America Corporation (2008). “Team Bank of America Overview.” <<http://www.bankofamerica.com/teambank/>> 08 April 2008.

million a week, to support education, the arts, and social services.⁴ Many of the tactics behind charitable contributions are presumably designed to raise the company's image in the public's eye, thereby increasing demand and thus sales. Some claim that charitable contributions may also attract newer and more productive employees, thus reducing the costs of a firm. Others perceive the current trend in corporate giving to be allocating funds in an inefficient manner; they believe that these charitable donations could have gone to raising wages or purchasing more capital. Thus, corporate giving could potentially increase a firm's costs and reduce its profits. It has also been argued that such philanthropic behavior, instead of strictly capitalistic behavior, can actually be detrimental to society because the main purpose of business is to contribute to society through its daily profit-making activities- providing goods, services, and employment to the area.⁵

The purpose of this paper is to investigate the relationship between a firm's charitable donations and its sales. Are companies financially rewarded for such "good" behavior? Specifically, do charitable contributions enhance a firm's image and boost consumer demand for its product, thus increasing sales? This paper examines the relationship between corporate giving and sales during the years 2002-2007 using a fixed effects model for panel data. In a similar paper, Lev, Petrovits, and Radhakrishnan (2006) found that an increase in the growth of charitable contributions does result in an increase in sales and revenue growth in its study of 251 firms from 1989 to 2000. Because the period in which Lev et al. (2006) examined this relationship was a robust era of economic development for the United States, a more recent sample period would ensure that the earlier results were not a fair weather phenomenon. In

⁴ Target Corporation (2008). "Target Corporation: Community" <<http://sites.target.com/site/en/corporate/page.jsp?contentId=PRD03-001811>> 05 May 2008.

⁵ "How Good Should Your Business Be?" (17 Jan 2008) *The Economist*, 386(8563): 13.

contrast to Lev et al. (2006), the hypothesized positive relationship between corporate giving and sales is not supported by the regression results reported in this paper.

Literature Review

Research on corporate giving has typically focused on the motivations and strategies associated with a firm's decision to participate in such giving. Webb and Farmer (1995) investigated the different types of giving and time horizons that determined the likelihood of a corporation's charitable participation. Corporate contributions were considered a strategic tool in which firms could enhance their image and increase sales (and presumably profits). Webb and Farmer (1995) utilized a game theoretic duopoly model to illustrate the profit maximization associated with corporate goodwill strategies and the competition each firm faced. Under the model, firms were capable of making decisions that were considered either "non-cooperative" or "cooperative." Under cooperative giving, efficiency was gained. Webb and Farmer (1995) found that if charitable spending was cooperative in a competitive market, then both the quantity sold and price of output of the firms increased, inciting a rise in profits for both firms. On the other hand, if the firms were non-cooperative (competing in terms of both giving and in output), then profits were decreased due to a decline in quantity and price. Furthermore, the paper found that firms had an incentive to deviate from cooperative giving when the short-run profit exceeded the benefits of long-term cooperation. In other words, an increase in both the time horizon and the discount factor of future earnings motivated corporations to continue to cooperate in donating to charities. Thus, according to Webb and Farmer (1995), not only can corporate giving enhance profits but the competition of corporate giving within the industry plays a role.

Furthermore, Noble, Cantrell, Kyriazis, and Algie (2007) expanded on an investigation of the motivations behind corporate giving through an in-depth survey of seven Australian

corporations from various sectors. Related literature prior to this study had focused on four categories as the primary reasons for a corporation's decision to donate: strategic profit maximization, an altruistic motivation, political motivation, and managerial utility motivation. Noble et al. (2007) sought to understand how each of these motivations interacted and drove charitable giving as well as how these different interactions defined certain corporate giving agendas.

The study discovered that the primary motivations for corporate giving were strategic profit maximization and political reasons; altruistic and managerial utility were not found to be significant in driving corporate giving. Furthermore, the firms who specified political reasons as their biggest motivating factor tended to be in the industries that had a potentially high environmental impact (for example, mining and heavy metal manufacturing) and engaged in giving in order to maintain a positive perception within the community. In addition, all firms indicated that profit maximization was a major motivating factor. In either case, they used their donations in a strategic manner so as to increase revenue (for instance, by using the charitable giving as a marketing/advertising activity) or reduce costs. The political and profit maximization motivations served to create a hierarchy of charitable giving, varying from creating a good public perception at the local level to major sponsorship programs that allowed the firm to fulfill its political needs. The work of Noble et al. (2007) and Webb and Farmer (1995) utilized the assumption that corporate giving would enhance sales and profits. However, are such suppositions backed by econometrics studies?

Various econometrics papers probed the relationship between corporate philanthropy and financial performance, as measured in an assortment of ways. Ziegler, Schroder, and Rennings (2007) examined the relationship between overall corporate social responsibility and the

economic success of a corporation through an investigation of the relationship between the sustainability level (defined as environmental and social performance) and the stock performance of a corporation and of given industries as a whole. The study chose to base its measurement of financial performance on the change in stock value of each corporation over the period of analysis, 1996 to 2001. The study utilized data from the Swiss bank Sarasin & Cie's environmental and social rankings. Sarasin & Cie analyzed around 300 corporations found on various stock exchanges throughout Europe. Ziegler et al. (2007) conducted time-series regressions of basic asset pricing models, the Capital Asset Pricing Model (CAPM) and the multifactor (arbitrage pricing) model, followed by cross-sectional regressions of the average monthly stock return on both the environmental and social performance variables.

The study discovered that the average environmental performance of an industry has a positive effect on stock performance while the average social performance has a negative effect on stock values of the industry. However, relative sustainability (both environmental and social) performance variables within each industry were not found to have an effect on stock performance, indicating that a corporation enacting environmentally-friendly policies and undertaking social responsibilities would neither reduce nor enhance the value of its stock.

Furthermore, research specific to the relationship between corporate giving and financial performance has not yielded consistent results. For instance, Wang, Choi and Li (2005) hypothesized an inverse U-shaped relationship between charitable contributions by US corporations and financial performance. The hypothesis was based on the two prominent and contradictory theories existing regarding this relationship. The first theory, known as the instrumental stakeholder theory, stipulated that corporate giving would lead to an increase in financial performance due to improvements in the relationship between the corporation and the

stakeholder. In contrast, the agency theory maintained that corporate giving utilizes important resources and thus would limit the financial performance of the company.

Wang, Choi and Li (2005) used data drawn from the *Taft Corporate Giving Directory* and Standard & Poor's COMPUSTAT to get a final sample of 854 companies for a 16-year time period. The return on assets (ROA), return on sales (ROS), and Tobin's q were used as the measures of corporate financial performance. The study found that, for each of the three measures, the coefficients for both the linear and quadratic corporate giving terms were significant. A positive coefficient on the linear term of the corporate giving variable and a negative sign on the quadratic corporate giving coefficient supported the study's hypothesis of an inverse U-shaped relationship. This led to the conclusion that a decreasing marginal return to corporate giving existed.

Like Wang, Choi and Li (2005), Lev, Petrovits, and Radhakrishnan (2006) explored the relationship between charitable contributions and financial performance. Lev et al. (2006) extended previous literature by directly investigating the direction of causality. Specifically, the study considered whether charitable contributions drive financial performance or if economic performance influences the level of charitable donations given by corporations. The study used Granger (1969) causality to test the association between corporate contributions and future changes in revenue using cross-sectional regressions from 1989 to 2000. *Taft's Corporate Giving Directory* was the study's source of data for the charitable donations of each firm selected while COMPUSTAT was used to obtain financial statement data.

In its empirical model, the study controlled for research and development (RD), capital expenditures (CEX), advertising and promotion (ADVT), market value of equity (MV), and mergers and acquisitions (MERGER), in order to isolate the effects of corporate giving (GIFT)

on sales (SALE). The regression model for causality from corporate giving to sales is specified below:

$$\begin{aligned}
 \log(SALE_{it}/SALE_{i(t-1)}) = & a_0 + a_1 \log(GIFT_{i(t-1)}/GIFT_{i(t-2)}) + a_2 \log(GIFT_{i(t-2)}/GIFT_{i(t-3)}) \\
 & + a_3 \log(SALE_{i(t-1)}/SALE_{i(t-2)}) + a_4 \log(SALE_{i(t-2)}/SALE_{i(t-3)}) \\
 & + a_5 \log(RD_{i(t-1)}/RD_{i(t-2)}) + a_6 \log(RD_{i(t-2)}/RD_{i(t-3)}) \\
 & + a_7 \log(CEX_{i(t-1)}/CEX_{i(t-2)}) + a_8 \log(CEX_{i(t-2)}/CEX_{i(t-3)}) \\
 & + a_9 \log(ADVT_{i(t-1)}/ADVT_{i(t-2)}) + a_{10} \log(ADVT_{i(t-2)}/ADVT_{i(t-3)}) \\
 & + a_{11} MERGER_{it} + a_{12} \log(MV_{i(t-1)}/MV_{i(t-2)}) + error_{it}.
 \end{aligned} \tag{1}$$

A similar model was used in order to investigate the effect of sales on corporate giving. The logarithmic function was utilized in the regression because the growth in sales and growth in giving are right-skewed. Lev et al. (2006) found that a one-percent increase in the level of corporate giving is responsible for an increase in about 7 basis points in the growth of sales for the two years after the increase while only a weak association was found between sales and level of future giving. Furthermore, firms in industries less susceptible to public perception were discovered to not use charitable giving to increase sales. On the other hand, 0.32% of actual revenue growth is explained by charitable contributions for consumer sensitive firms.

Both Wang et al. (2005) and Lev et al. (2006) inferred that consumer's perception of "ethical" and "unethical" companies would influence their buying decisions. A study in *The Wall Street Journal*, summarized in the article "Does Being Ethical Pay?," directly investigated whether consumers rewarded companies for ethical behavior. Trudel and Cotte (2008) reported on three experiments: the first of coffee, the second T-shirts made with varying degrees of organic cotton, and an investigation of the attitudes of consumers toward corporate firms.

In the first experiment, a group of 97 random adult coffee drinkers was asked to specify how much they would be willing to pay for a pound of coffee beans from a certain company (a

name brand unknown to the American consumer), based off information given regarding the ethics of the company. The information consisted of information regarding social responsibility programs, eco-friendly practices, diversity in the workforce and a respect for human rights (no child labor used). A control group received neutral information, based on what consumers would learn from a typical shopping experience. The experiment found that the mean price for the ethical group was \$9.71 per pound, the mean price for the unethical group was \$5.89 and the mean for the control group was \$8.31. Thus, consumers were willing to pay a premium for ethical products and also punished unethical companies harshly.

The second experiment investigated whether consumers were perceptive to degrees of ethical behavior. In a similar experiment, they introduced t-shirts that were made of 25%, 50% and 100% organic cotton as well as a control and company that participated in unethical behavior. Once again, there existed a premium for the ethically produced product. However, the difference between the 25% made organic cotton (\$20.72) and the 100% made organic (\$21.21) versus the control group (\$20.04) was minimal. The consumers punished the unethical company more harshly than it rewarded the ethical, as the mean was \$17.33. Thus, it appears that once companies hit a certain ethical standard, they will be rewarded for such behavior. Positive behavior past this standard does not seem to positively influence the price. However, failure to meet this standard would mean a steeper drop in price.

The third experiment explored the attitudes of consumers towards corporate firms. The coffee experiment was re-conducted, but this time the perceptions of the adult coffee drinkers were measured beforehand. The study once again found that consumers were willing to pay more for ethical goods than unethical ones, regardless of whether they had low expectations or high expectations of corporate behavior. However, people with higher expectations of corporate

behavior gave bigger rewards and punishments to ethical and unethical companies versus the low expectation consumers. These findings coincided with those of Lev et al. (2006) and Wang et al. (2005) and support claims that public perceptions greatly influence product demand.

Methods

In order to study the relationship between corporate giving and sales, I estimate a corporate sales model as a function of giving with a panel of firms during the period 2002-2007. The model is estimated in three functional forms: linear, quadratic, and double-log. For simplicity in the explanation, I will start with the basic linear model:

$$SALES_{it} = \beta_0 + \beta_1 GIVING_{i(t-1)} + \sum_{j=2}^k \beta_j X_{ij(t-1)} + \beta_m F_i + e_{it}. \quad (2)$$

In the model, SALES and GIVING represent corporate net sales and total corporate giving. X refers to the various control variables for sales. Lastly, F represents firm-specific time-invariant variables, such as industry and managerial preference. Managerial preference, as investigated by Noble et al. (2007), can have an impact on the level and type of corporate giving in the firm. Many of these variables (such as managerial preference) are non-measurable and can cause omitted variable bias if not included. This concern motivates the utilization of a panel method, whether it is by first differencing, fixed effects, or another method.

In order to first difference, the model must also be lagged one period:

$$SALES_{i(t-1)} = \beta_0 + \beta_1 GIVING_{i(t-2)} + \sum_{j=2}^k \beta_j X_{ij(t-2)} + \beta_m F_i + e_{i(t-1)}. \quad (3)$$

Subtracting (3) from (2), yields:

$$\begin{aligned}
(SALES_{it} - SALES_{i(t-1)}) &= \beta_1 (GIVING_{i(t-1)} - GIVING_{i(t-2)}) \\
&+ \sum_{j=2}^k \beta_j (X_{ij(t-1)} - X_{ij(t-2)}) + (e_{it} - e_{i(t-1)}).
\end{aligned} \tag{4}$$

If instead of linear, a double-log form is assumed, then first differencing yields:

$$\begin{aligned}
(Ln(SALES_{it}) - Ln(SALES_{i(t-1)})) &= \beta_1 (Ln(GIVING_{i(t-1)}) - Ln(GIVING_{i(t-2)})) \\
&+ \sum_{j=2}^k \beta_j (Ln(X_{ij(t-1)}) - Ln(X_{ij(t-2)})) \\
&+ (Ln(e_{it}) - Ln(e_{i(t-1)})).
\end{aligned} \tag{5}$$

By general logarithm rules:

$$\begin{aligned}
Ln(SALES_{it} / SALES_{i(t-1)}) &= \beta_1 (Ln(GIVING_{i(t-1)} / GIVING_{i(t-2)})) \\
&+ \sum_{j=2}^k \beta_j (Ln(X_{ij(t-1)} / X_{ij(t-2)})) \\
&+ (Ln(e_{it} / e_{i(t-1)})).
\end{aligned} \tag{6}$$

Under the first difference model, the variables that could potentially cause omitted variable bias drop out, eliminating this concern. Furthermore, if estimated in the double-log form of equation (6), its logical similarities to Lev et al. (2006) are evident. Thus, one can understand the model of Lev et al. (2006) as a first difference model.

However, instead of using the first difference model, this paper uses fixed effects to handle omitted variable bias. For the linear case, equation (2) is first averaged across time for each firm and then the average is subtracted from (2), yielding:

$$\begin{aligned}
(SALES_{it} - \overline{SALES}_i) &= \beta_1 (GIVING_{i(t-1)} - \overline{GIVING}_i) \\
&+ \sum_{j=2}^k \beta_j (X_{ij(t-1)} - \overline{X}_{ij}) + (e_{it} - \overline{e}_i).
\end{aligned} \tag{7}$$

Notice again that the firm-specific, time-invariant variable drops out. For the double-log form, the algebra is similar.

As Wooldridge (2003) expounds, when there are two time periods, no differences in the estimation of the coefficients exist between the fixed effects and the first differencing panel methods. However, when there are more than two time periods, Wooldridge (2003) clarifies relevant differences between the methods. For my purposes, the econometric properties are similar, although recognized as not identical. Fixed effects was chosen because it is the more common estimator reported in cross-sectional research. On another note, the model was estimated so as to control for both firm and time specific effects and used robust standard errors.

Variables and Data Sources

Companies included in the study were identified through the *Chronicle of Philanthropy's* annual survey of corporate giving. *The Chronicle of Philanthropy* was selected based on overall accessibility and its reporting of total giving numbers (both cash and product), as compared with directories such as *Taft Corporate Giving Directory*, which provide corporate giving numbers only based off corporate-created philanthropic programs, potentially excluding giving to other organizations. Moreover, *The Chronicle of Philanthropy's* corporate giving data have been widely reported, including in *Forbes* magazine. Corporate giving figures for 146 companies were obtained for the years 2001-2007. However, based on the voluntary nature of the survey, not all years for every company were available and, for this reason, some companies were dropped in the estimations. Since the data were provided to *The Chronicle of Philanthropy*, the possibility exists that there could be sample selection bias. However, concern regarding sample selection bias is mitigated by the wide array of firm size and corporate giving numbers.

Similar to Lev et al. (2006), sales was chosen as the measurement of performance. This was done in order to investigate the demand side of the supply and demand model for a company's product. This choice was based on the hypothesis that corporate giving enhances a

firm's image, thereby increasing consumer demand and firm revenue. Noble et al. (2007) and Webb and Farmer (1995) both found that corporate giving was used to positively influence stakeholder and consumer opinion; Noble et al. (2007) discovered that corporate giving was often considered similar to a marketing/advertising expense, with the increasing awareness of the company and its product.

The variables considered for controls include advertising expenditures, research and development expenditures, property, plant, and equipment, and a dummy variable for any acquisitions or mergers during the period. The property, plant, and equipment variable controlled for firm size. Data for each firm on all control variables as well as net sales were obtained from Standard & Poor's COMPUSTAT database for the years 2002-2007. A lack of advertising and research and development data further reduced the number of firms in the study. Because the lack of research and development data reduced the number of firms included in the regressions by about half, the research and development control variable was omitted from the regressions reported. Qualitative results are similar if the research and development variable is included.

Table 1 presents the sample descriptive statistics for all variables in the reported regressions in all years. Figures were adjusted to control for inflation. During the entire sample period, the overall sample mean of sales (denoted SALES) was \$53.77 billion in 1982 dollars. The mean of lagged corporate charitable giving (denoted GIVING) was \$65.29 million. There is a wide range of corporate giving, as the minimum giving was \$28.34 million while the maximum was \$846.25 million. Lagged property, plant and equipment (denoted PPE), the control for the size of the firm, had a mean of \$8.76 billion, with a maximum of \$46.93 billion. Regarding advertising expense (ADVT), the mean was \$700.48 million. However, COMPUSTAT data on

advertising expense could only be obtained for about 45% of the companies included in the study. While not in the reported regressions, research & development expenditures (RD) had a mean of \$1.1 billion. About 45% of the companies in the study did not have data on research and development expense that could be obtained from COMPUSTAT. In the end, the largest sample contained 212 observations and 53 companies.

Findings

Three samples were used. The first included all years from 2002-2007. Sample two included three years only- 2003, 2005, and 2007. Finally, sample three consisted of the years 2003 and 2007. Years in the second and third samples were dropped in order to allow for more sample variance for the independent variables in the fixed effects model.

The null hypothesis of no effect could not be rejected in favor of a positive relationship between corporate giving and sales regardless of the sample or model. The hypothesis tested was: $H_0: \beta_1=0$ versus $H_1: \beta_1>0$. Not one GIVING coefficient for the double-log, linear, or quadratic model was statistically significant using a one-sided test. Thus, no significant positive relationship was found between corporate giving and sales.

Under the double-log model, GIVING was statistically insignificant for all three samples (see Table 2). For the annual 2002-2007 sample, the coefficient for GIVING was found to be slightly positive (0.003). On the other hand, the coefficients for sample two and sample three regressions were slightly negative (-.006 and -.096 respectively). Because double-log coefficients represent elasticities, these results show essentially no sensitivity of sales to changes in giving. This finding contradicts that of Lev et al. (2006), which found a statistically significant positive coefficient. All control variables were significant at $\alpha=.10$ in at least one sample.

The coefficient on GIVING in the linear model was negative in all three samples, meaning that the null hypothesis cannot be rejected in favor of the one-sided alternative (see Table 3). In contrast, the linear terms in the quadratic model were all positive, though insignificant. Wang et al. (2005) hypothesized diminishing returns to corporate giving, or a negative GIVING² coefficient. That paper found a statistically significant negative coefficient in its study for the giving-squared variable using different measures of financial performance—Tobin's q, ROA, and ROS. This supported its hypothesis of an inverse U-shaped relationship. Given these findings, I hypothesized: $H_0: \beta_2=0$, $H_1: \beta_2<0$. The coefficients, t-stats, and p-values for this regression are presented in Table 4. The coefficients for the GIVING² variable in the all three samples were only slightly negative and statistically insignificant at $\alpha=.10$. Thus, the null hypothesis could not be rejected and no evidence of a diminishing marginal return of corporate giving on sales was found.

Conclusion

Overall, no significant positive relationship between sales and corporate revenue was discovered, regardless of the model or sample tested. These results do not support the conclusions made by Lev et al. (2006). In other words, no financial reward for “good” corporate behavior was evident. However, there are a variety of factors that could play into the discrepancies between the analyses. First, this analysis used different control variables; the property, plant, and equipment variable was used as the control variable for size instead of the market value of equity variable used by Lev et al. (2006). Furthermore, Lev et al. (2006) also included the control variable research & development expenditures and capital expenditures. While the study also encountered unavailable data in COMPUSTAT, Lev et al. (2006) set missing advertising and research and development data equal to zero to perform their analysis.

In our analysis, observations with missing data were dropped. Because of the extent of the missing data, the research and development control variable needed to be dropped as it cut the number of observations in the regressions in half. The advertising expenditure variable also caused a loss of observations. However, the entire analysis was re-run with the missing advertising and research and development data set equal to 0. No significant changes were found, other than an almost doubling of the number of observations in each period, giving an indication of the robustness of the investigation.

Lev et al. (2006) conducted its analysis for the sample 1989-2000. The 1990's were a sample period of robust economic growth. It is plausible that the strong GDP growth influenced corporate sales while the perception of a continued robust economy drove corporations to continue to increase giving. Furthermore, there was an increasing public awareness of ethical versus unethical companies during this time sample period and the trend caused many companies to join in philanthropic activities. This trend, combined with robust economic growth, could have caused increases in both corporate sales and corporate donations that were not necessarily directly related. The time period 2001-2007, on the other hand, included some periods of declining GDP growth and a small recession. The year 2007 was in particular a period of slowing GDP growth as a result of the credit crunch. For this reason, it is possible that the correlation between giving and sales is a fair weather phenomenon.

There are various limitations to this analysis. With the missing data on corporate giving, advertising expenditures, and research & development expenditures, there are at most 212 observations included in the sample, consisting of 53 companies. The small sample size does limit any conclusions that can be drawn from the analysis. These regressions would need to be rerun with a larger sample in order to gain confidence in the results. However, it has been

surmised that corporate giving is used by companies as a form of advertising. The advertising variable was found to be statistically significant in at least two samples of the double log regression. This suggests that the data used does have enough power to reject the null hypothesis, if actually false.

Furthermore, this analysis investigated the demand side, not the cost side of company performance. According to the theory, an increase in corporate giving would cause a corresponding boost in customer perception of the company and therefore raise the demand for the company's product. However, when looking at a cost side analysis, there are two theories. One theory stipulates that an increase in corporate giving would heighten morale within the firm and also attract more productive employees to the company, thus raising productivity and decreasing costs. An opposing theory stipulates that the money donated to charities utilizes important resources that could have gone to buying more capital or hiring more employees, thus decreasing productivity and increasing costs. To further examine the relationship between corporate financial performance and corporate giving, it is necessary to examine the effect of giving on both the demand and cost side. For instance, it could be possible that there is no demand side effect but giving influences costs, such that profits are affected. This opens up the possibility to investigations of the effect of corporate sales on costs and overall profits.

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Tables

Table 1: Descriptive Statistics- All years				
	SALES	GIVING	ADVT	PPE
Mean	53770.73	65.29671	700.4823	8763.554
Median	37123.6	28.34811	532.0989	4654.233
Maximum	375376	846.2505	3029.956	46926.5
Minimum	11579.4	0.024804	20.57079	100.2563
Std. Dev.	57424.39	113.6288	648.4317	10342.77
Skewness	3.031998	4.239899	1.659284	2.033182
Jarque-Bera Probability	1324.139 0	5099.699 0	160.048 0	248.2744 0
Sum	11399394	13842.9	148502.3	1857873
Sum Sq. Dev.	6.96E+11	2724325	88717841	2.26E+10
Observations	212	212	212	212

Note: All variables in millions of 1982 dollars

Table 2: Double Log Regression of sales on prior giving									
Dependent variable: LNSALES									
Variable	Sample 1: Annual Sales 2002-2007			Sample 2: Sales 2003, 2005, 2007			Sample 3: Sales 2003, 2007		
	coeff	t-stat	p-value	coeff	t-stat	p-value	coeff	t-stat	p-value
$\ln(\text{GIVING}_{i(t-1)})$	0.003	0.077	0.939	-0.006	-0.130	0.897	-0.096	-1.229	0.233
$\ln(\text{ADVT}_{i(t-1)})^{**}$	0.136	1.739	0.084	0.292	2.198	0.032	0.265	0.864	0.398
$\ln(\text{PPE}_{i(t-1)})^{**}$	0.438	3.314	0.001	0.299	1.554	0.126	0.450	1.181	0.252
MERGER_{it}^{**}	0.062	2.104	0.037	0.106	1.811	0.076	0.102	0.764	0.454
R^2	0.982			0.985			0.988		
Observations	212			114			72		
Companies	53			53			47		

Note: 2-sided p-values reported in table*

*=Statistically significant for at least 1 sample for one-sided p-value at $\alpha=.10$

**= Statistically significant for at least 2 samples for one-sided p-value at $\alpha=.10$

***=Statistically significant for at least 3 samples for one-sided p-value $\alpha=.10$

Table 3: Linear Regression of sales on prior giving

Dependent variable: SALES									
Variable	Sample 1: Annual Sales 2002-2007			Sample 2: Sales 2003, 2005, 2007			Sample 3: Sales 2003, 2007		
	coeff	t-stat	p-value	coeff	t-stat	p-value	coeff	t-stat	p-value
GIVING _{i(t-1)}	-6.816	-1.464	0.145	-12.590	-1.971	0.054	-14.235	-2.119	0.047
ADVT _{i(t-1)}	1.772	0.486	0.628	3.413	0.714	0.478	2.213	0.205	0.840
PPE _{i(t-1)} ***	1.575	5.199	0.000	1.503	4.532	0.000	1.866	4.686	0.000
MERGER _{it}	813.480	0.654	0.514	1676.527	0.754	0.454	-1652.924	-0.463	0.648
R ²	0.993			0.988			0.995		
Observations	212			114			72		
Companies	53			53			47		

Notes: 2-sided p-values reported in table

*=Statistically significant for at least 1 samples for one-sided p-value at $\alpha=.10$

**= Statistically significant for at least 2 samples for one-sided p-value at $\alpha=.10$

***=Statistically significant for at least 3 samples for one-sided p-value at $\alpha=.10$

Table 4: Quadratic Regression of sales on prior giving

Dependent variable: SALES									
Variable	Sample 1: Annual Sales 2002-2007			Sample 2: Sales 2003, 2005, 2007			Sample 3: Sales 2003, 2007		
	coeff	t-stat	p-value	coeff	t-stat	p-value	coeff	t-stat	p-value
GIVING _{i(t-1)}	18.739	0.575	0.566	11.836	0.259	0.797	-7.930	-0.091	0.929
GIVING _{i(t-1)} ²	-0.024	-0.890	0.375	-0.019	-0.505	0.616	0.000	-0.003	0.998
ADVT _{i(t-1)}	8.775	1.284	0.201	15.612	1.030	0.308	16.803	0.655	0.522
ADVT _{i(t-1)} ²	-0.002	-0.849	0.397	-0.004	-0.926	0.359	-0.005	-0.823	0.422
PPE _{i(t-1)}	1.072	1.352	0.178	0.249	0.238	0.813	0.052	0.036	0.971
PPE _{i(t-1)} ²	0.000	0.414	0.679	0.000	0.892	0.376	0.000	0.989	0.337
MERGER	901.152	0.743	0.459	2007.680	0.855	0.396	-2074.250	-0.432	0.671
R ²	0.989			0.989			0.995		
Observations	212			114			72		
Companies	53			53			47		

Notes: 2-sided p-values reported in table

*=Statistically significant for at least 1 sample for one-sided p-value at $\alpha=.10$

**= Statistically significant for at least 2 samples for one-sided p-value at $\alpha=.10$

***=Statistically significant for at least 3 samples for one-sided p-value at $\alpha=.10$