Impact of Natural Disasters on Corporate Philanthropic Practices (A Case Study of Pakistani Firms)

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Abstract: *Corporate philanthropy and corporate social responsibility have emerged in the modern era and mainly focused by researchers and humanitarian groups. This paper empirically tested the impact of natural disasters on corporate charitable donations. This paper explores effect of disaster donations on pattern of corporate giving based on LSE-25 index companies over the ten year period 2002-11. Panel regression techniques along with dummy variable introduced for disaster affected years and interaction terms have been used for gauging the effect of disaster donations on pattern of corporate giving after collecting data from audited financial reports of companies. The results reveal that corporations are more generous in giving during the time of natural disasters.*

Keywords: *Corporate Philanthropy, Disaster Donations, LSE-25 Index Companies, Profitability.*

1. INTRODUCTION

There are numerous studies addressing corporate philanthropy (CP) from different perspectives but still this field is considered attractive and rich for experiments in theoretical and empirical tests. The significance of CP and the thought linked with corporate social responsibility (CSR), attracted researchers of modern era after 1950 to pay attention on these concepts (Jia and Zhang 2001). Corporate contributions towards the society have been regarded as a mean to develop and enhance corporate image in extremely competitive environment. Mostly managers viewed that CP should be well administrated to acknowledge the importance of philanthropy as it not only enhance company's good will among the customers but it could be a source of competitive advantage too.. Generally it is observed that due to philanthropic activities customers and employees shows greater loyalty towards corporate. Corporate philanthropy is a smaller domain usually considered as a subset of CSR. CSR has been subject of intellectual enquiry for many previous years and the richness of the research drives in part from the interdisciplinary origins of involvement. The various lines of academic enquiry into social responsibility and different origins of meaning of the term itself have produced a range of meanings. However, corporate charitable contribution is a phrase of CSR which is less explored than the more general theme of CSR. CP can be described as gifts by firms to charitable causes such as, to promote education; or for aid to natural disasters affectees; or support to enrich culture; or donate for health care and wellness program services (Godfrey 2005, Seifert et al. 2004). CP usually does not related with the firm's economic activities or legal requirements but extended beyond these phenomenon's. Carroll (1979) discussed four stages of CSR namely economic, legal, ethical, and discretionary. CP falls in the discretionary level or category.

Corporate can formulate a vital contribution by carrying out their actions and practices in a way that they both avoid harm and contribute to improvement, betterment and welfare of society. Corporate sector involvement in policy dialogues has multiple benefits: stakeholders can work mutually more efficiently and successfully at the same time as businesses can also put together awareness through their media coverage and consumer education. Firms with their access to incredible resources and technical, financial and organizational expertise should be concerned in mitigating the harms and

issues they have created and help in easing the issues that they have not created. Corporations are more and more affecting positively on society via public-private cooperation, Peter F. Drucker the greatest management scholar of this era transferred the full structure of business practices from the issue of "what you can get" to a simpler query "what you want to contribute?"

A massive earthquake struck Pakistan on Saturday morning October 8, 2005, where the official confirmed death toll was 74,698 and 106,000 injured. This earthquake is considered as strongest and deadly throughout previous hundred years in this area. This earthquake affected Kashmir and Gilgit Baltistan mostly the northern areas of Pakistan, pushing these areas into dark and damaged the basic infrastructure and livelihood of area. In late July 2010 the Indus River basin heavily flooded due massive monsoon rains in the areas of all four provinces of Pakistan including Khyber Pakhtunkhwa, Sindh, Punjab and Balochistan regions, known as the 2010 Pakistan floods. The data released by Pakistani government related to 2010 floods shows that 20 million people was directly influenced by these floods causing the death toll nearly to 2,000 peoples, generally damaging property, livelihood and infrastructure of flood affected areas. According to estimations nearly one-fifth of Pakistan's whole land area came underwater due to these deadly disastrous floods. These two big disasters in Pakistan had affected pattern of corporate giving. First, the effect of disasters on corporate philanthropy is rarely analyzed in existing literature. Research studies on the specific topic of corporate philanthropic practices and disaster donations in Pakistan are not made yet. The previous studies related to Pakistan only focused determinants and ignores the impact of disaster donations on pattern of corporate giving. The present study aims to fill this gap.

The Pakistan Centre for Philanthropy *(*PCP) awards were given for the years 2008 and 2009. Recipients of the award for the year 2008 in the highest volume of donations category were: Pakistan Petroleum Limited (SNGPL) and Pakistan State Oil (PSO). Award winners for the year 2009 in the highest volume of donations category were: Pakistan Petroleum Limited and National Bank of Pakistan. These organizations are included in LSE-25 index companies that are why this research selected to address LSE-25 index companies making them sample. Makki and Lodhi (2008) explained followings as determinants of corporate philanthropy (CP) earnings before tax, firm size, board size and advertising strength. Due to importance of LSE-25 Index Company's donations pattern, this research elaborated the impact of profitability, firm size, board size and advertising on CP and effect of disaster donations on pattern of corporate giving.

2. LITERATURE REVIEW

A number of research studies have argued that corporate charitable donations are more and more strategic perspective that might play a major function in process of stakeholder management (Porter and Cramer 2002, Saiia 2002). Porter and Cramer (2002) pointed out that Philip Morris in 1999 publicizing their $75 million in charitable giving's by spending $100 million to boost stakeholder's relations and enhance corporate image.

Nelsons (1970, 1974) argued that for successful differentiation companies heavily rely on advertising. CP can also serve similar purpose of differentiation as advertising do. Maignan et al. (1999) while analyzing corporate citizenship on benefits of business stated that consumer buying behavior is affected by involvement in betterment and welfare of society. Their research reveals that 88% of consumers prefer to purchase from socially responsible firms whereas 76% shows their intentions to shift to those brands of organizations which are more socially responsible. Mc William and Seigel (2000) in their research used advertising as a differentiation tool and found positive correlation with CP. Mc William and Seigel (2001) argued that CSR can be used as a tool for differentiation strategy by firms. Hess et al. (2002) compiled in their survey research that 43% of sample (1000 USA consumers) were impressed by firms which contribute more towards betterment and welfare of society.

Fry et al. (1982) argued that corporate image can be through charitable giving's and their findings supported relationship among advertising and charitable giving's. Navarro (1988) research findings supported the hypothesis that firms which are more inclined towards advertising for image building are more philanthropic. Brown et al. (2006) found that charitable giving and advertising intensity have positive relation with maximization of shareholders value by charitable giving. Zhang et al. (2009) supported the hypothesis that CP and advertising intensity have positive relationship in addition there study elaborated more strong relationship in case of competitive industries. From existing literature we hypothesize that corporate with high advertising expenses are more philanthropic.

Managers and directors use donations in forms of cash to support their own causes at expense of shareholders. (Barnard 1997) described that donations are used by board members in supporting their own ideological preferred causes and exercise significant influence in contributing corporate resources to attain better social status. Wang (2008) argued that corporate philanthropy practices may not necessarily gives direct benefit to stakeholders or they even not sometimes know to which level firm engages in corporate giving. Fich et al. (2009) discussed agency issues associated with CP due to discretionary powers of BOD to whom charitable giving are donated and how much. Also in their study they reveal that by charitable giving's share holders wealth are more likely to be maximized in transparent corporations. Brown et al. (2006) while analyzing the corporate philanthropic practices found that companies with large board of directors are associated with less charitable giving. Hence the study uses board size as an independent variable.

Corporations generally donate contributions from their pretax income with the aim of minimizing the after tax cost of donations. In order to gain tax benefits corporations prefer to contribute to charitable organizations which are approved by federal board of revenue for admissible taxable expense under the law. If failure to donate to registered charitable organizations corporations have to make contributions out of net profit after tax (Maddox, 1981). There are number of studies conducted to analyze the relationship of financial performance and corporate charitable contributions, Moore and Robson (2002) found strong positive association among profitability and charitable contributions as a percentage of profit before tax. Adams and Hardwick (1998) found profits are statistically associated with current donations (in the currency unit) with positive and significant relation. Waddox and Graves (1997) established significant relation between corporate social performance (CSP) and financial performance. Neiheisel (1994) concluded that profits have significant and positive association with corporate donations discussed in his research study titled corporate strategy and the politics of Goodwill.

Botsman and Gupta (1996) concluded that size has an impact on CP and found that small corporations are less philanthropic as compared to large corporations. Useem (1998) found significant relation among size and donations amount, in his findings he explains size is more important factor than profitability that large corporate donates more irrespective to their profitability. Amato and Amato (2007) findings supported that small and large sized firms are more philanthropic as compare to medium firms. Keeping in mind the significance of firm size in making charity, Total assets can be taken as proxy of firm size as independent variable. Pakistan is mainly a Labor intensive economy and LSE 25 index companies are large firms which give employment to large workforce, so we take employee cost as proxy for size of firms. Millington and Brammer (2006) argued that firms with high visibility (as large firms are more visible) tend to be more philanthropic in their practices. (Meznar & Nigh 1995) argued that a visible organization feels more pressure from society to be philanthropic. So, Employees cost will be used as Independent Variable.

3. SAMPLE AND METHODOLOGY

Keeping in mind the data availability limitations and previous studies, corporate philanthropy is measured only by the donations amount available in annual statements of companies for the purpose of this research. For all listed firms there is an obligation by Securities and Exchange Commission of Pakistan (SECP) to release corporate donations amount in the notes of their profit & loss accounts. So the annual reports of listed firms are in accordance with Companies Ordinance 1984 compliance requirement part III, E-1 of schedule 4.

The data is gathered from audited annual reports publically available of firms included in sample, hence the study applied secondary data to support hypothesis. Due to non availability of data for non listed firms this study only included listed firms in sampling frame. To draw the sample Lahore Stock Exchange listed firms are used. In Lahore Stock Exchange 25 top performing firms are shown in LSE 25 index. Previous studies mostly focused on top performing firms; hence the sample will be consisted of 25 firms and from 2002 to 2011, making 250 firms observations but due to missing values and non availability of data sample consist of 246 observations. We used Stata 12 for analyzing the models.

Three models have been used in the research, as model 1 applied dummy variables, the second one without dummy variables and third model used dummies & its interaction terms. Partial F test is applied to check whether full model with dummy variable and its interaction terms is adequate or not.

Model 1 is reduced model with less predictor while model 3 is full model with large number of predictors. The test for variance and standard deviation of $_i$ to be zero is used to see whether pooled regression is adequate or fixed effect. If the result of variance and standard deviation test is insignificant then it supports the hypothesis that the fixed effect model adequate, while significant result will support the hypothesis that pooled regression model is adequate. Further if the results pictured fixed effect model is adequate, Durbin Hausman test will be used to check the prefer model between FE estimator and RE estimator (random effects). The null hypothesis will be about random effects is favored model while the alternative hypothesis is that fixed effect model is preferred.

$$CP_{it} = _{0i} + _1(PBT)_{it} + _2(BOD)_{it} + _3(AI)_{it} + _4(LTA)_{it} + _5(EC)_{it} + _{it} \tag{1}$$

$$CP_{it} = _{0i} + _1(PBT)_{it} + _2(BOD)_{it} + _3(AI)_{it} + _4(LTA)_{it} + _5(EC)_{it} + _6(D) + _{it} \tag{2}$$

$$CP_{it} = _{0i} + _1(PBT)_{it} + _2(BOD)_{it} + _3(AI)_{it} + _4(LTA)_{it} + _5(EC)_{it} + _6(D) + _7(D*BOD)_{it} + _8(D*PBT)_{it}$$

$$+ _9(D*AI)_{it} + _{10}(D*LTA)_{it} + _{11}(D*EC)_{it} + _{it} \tag{3}$$

Where

- CP=Corporate Philanthropy proxies as total cash donations

- BOD= Board Size proxies as No of directors

- PBT= Profit Before Tax

- AI= Advertising Intensity proxies as Log natural of Advertising Expenses

- LTA= Log natural of Total Assets

- EC= Proxies as Log natural of Employees Cost

- D=1 for 2005,2006,2007,2010 and 2011 (disaster effected years). Otherwise zero.

- $_{0i} = _0 + _i$

4. RESULTS AND DISCUSSION

This study elaborate effects of disaster donations on pattern of corporate giving's based on LSE-25 index company's data by using PBT, firm size, board size and advertising intensity as determinants. Table 1 illustrates the descriptive of different variables including response variable and predictors. The donations contributed by LSE-25 companies have mean of Rs.18553709 with a range from Rs. 0 to Rs. 417,926,000 deposited by Pakistan Petroleum Limited for President's Flood Relief Fund 2010 and in 2005 National Bank of Pakistan donated Rs. 107,819,000 in President's Disaster Relief Fund for earthquake victims. LSE-25 Companies represented more than 5 industrial sectors which included Banks, Oil/Gas/Power, Cement, Chemical/Fertilizers, other firms as 7,7,5,2 and 4 respectively.

Table1. *Descriptive Statistics*

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Donations	247	0	417926000	18553709	45471474
PBT	247	-39729290000	90982204000	6395271298	16118477646
BOD	247	5	18	9.530	2.321
Advertisement	247	0	8518671000	163900000	8519000000
Total Assets	247	2827341000	1149577736000	113885793504	172474760788
Employees cost	247	9553562	18939204000	3056769069	3766287052

Table 2 explains Correlation Matrix results to check the multicollinearity in predictors. Correlation Matrix results shows there is no multicollinearity in predictors. The highest correlation is among Employees cost and Log of total assets which is .5991 significant at 1% level and lies in acceptable range. The correlation between board size and advertising is lowest -0.0024 while correlation between Board size and Employees cost is 0.1118 statistically significant. Correlation Matrix results shows there is no multicollinearity in any predictor because all correlations lies in acceptable range and below 0.6. Donations have significant and positive correlations with PBT, total assets and employee cost. The high correlations with PBT & total assets show that donations are good for the company's profits. We also calculated the Variance Inflationary Factor (VIF) of all variables which are below10. Hence it can be concluded, the predictors are free of multicollinearity.

We run pooled regression and fixed effects, the results of variance and standard deviation test are insignificant (p = 0.1133) as $_i$is not zero, which means intercept differs that's why fixed effect model is adequate and used, hence OLS is not enough for study. The result of Hausman test showed that alternative hypothesis is accepted and preferred the fixed effect model in comparison to random effects.

Table2. *Pearson's Correlation Matrix*

	Donations	PBT	BOD	Advertisement	Total Assets	Employees cost
Donations	1					
PBT	0.5405 ***	1				
BOD	0.0123	0.0580	1			
Advertisement	0.0199	-0.0223	-0.0024	1		
Total Assets	0.2970 ***	0.3043***	-0.1363**	0.0916	1	
Employees cost	0.3071 ***	0.3045***	0.1118*	0.2463 ***	0.5991 ***	1

*significant at 10%

** Significant at 5%

*** Significant at 1%

The Results of fixed effects model showed that profitability, employees cost and advertising intensity has positive significant while board size and firm's size have positive insignificant relation with corporate philanthropy. The result of profitability is significant at 1% while the results of AI and EC are significant at 10%. The result of Dummy is positive and significant at 5%. Partial F test is used by SSR_F and SSE is express for full model (2). We have run reduce model (1) with smaller number of parameters and compute SSR_R from reduced model. Test Statistics $F_0 = (SSR_F-SSR_R)/(q_1-q_2)/SSE/ (n-q_1)$ $F_0= 9.7758$, with P value = 0.001987, hence it is significant at 5% level means full model is adequate. Partial F test suggests that there should be different models for disaster affected years, which supported the hypothesis that donations are effected by disasters and firms are more generous in giving. Further in comparison to model 2 with model 3 partial F test results showed model 2 is adequate. So we can still say that model 2 is adequate and significant both assuring more significant results.

Results illustrated that firm's pattern of giving changed in time of natural disasters as coefficients for model for normal years and disaster affected years significantly differ from each other. The introduction of interaction terms changed the sign of coefficients which described that disaster is also important in prediction of donations for corporations. The interaction term with the advertising intensity signs changes to negative which means firms in time of disasters shifted their advertisement expenditures to respond charitably to humanitarian needs in times of crisis. The coefficients of Assets size indicated normally firms with large asset size are more generous but interaction term explained that small firms also generously contribute to victims of natural disasters, as in times of natural disasters this relation turned to negative because small firms respond more to disaster by engaging them more in charitable works to help victims of natural disasters.

The results of model 2 showed that 21% of variance in model is due to differences across panels. rho is known as intra-class correlations. R-square's value indicates that model explained 27.5% variations. Overall Model 2 is adequate and significant which support the hypotheses that firm's respond charitably to humanitarian needs in times of crisis.

Table3. *Generalized least square regression for panel data with fixed effect*

	(1)	(2)	(3)	(4)	(5)
VARIABLES	Pooled Regression 1	Pooled Regression 2	Fixed Effects 1	Fixed Effects 2	Fixed Effects 3
PBT	0.00140***	0.00136***	0.00162***	0.00156***	0.000783***
	(0.000162)	(0.000159)	(0.000264)	(0.000263)	(0.000291)
BOD	-1.080e+06	-955,150	1.616e+06	1.289e+06	383,896
	(1.087e+06)	(1.068e+06)	(2.084e+06)	(2.071e+06)	(2.181e+06)
AI	1.933e+06*	1.242e+06	2.796e+06**	2.225e+06*	1.874e+06
	(1.150e+06)	(1.150e+06)	(1.325e+06)	(1.339e+06)	(1.439e+06)
LTA	-877,630	-349,363	3.197e+06	2.599e+06	2.979e+06
	(3.064e+06)	(3.013e+06)	(3.955e+06)	(3.931e+06)	(5.011e+06)

|					
EC	3.375e+06	3.071e+06	6.883e+06**	5.690e+06*	4.863e+06
	(2.384e+06)	(2.343e+06)	(3.399e+06)	(3.414e+06)	(3.845e+06)
Dummy		1.553e+07***		1.104e+07**	-4.001e+06
		(4.907e+06)		(5.064e+06)	(1.050e+08)
D*PBT					0.00151***
					(0.000309)
D*BOD					484,617
					(2.018e+06)
D*AI					-940,262
					(2.721e+06)
D*LTA					-2.307e+06
					(6.300e+06)
D*EC					3.553e+06
					(4.883e+06)
Constant	-5.927e+07	-6.334e+07	-2.746e+08***	-2.275e+08**	-2.022e+08*
	(5.475e+07)	(5.377e+07)	(1.054e+08)	(1.067e+08)	(1.144e+08)
Observations	246	246	246	246	246
R-squared	0.328	0.355	0.258	0.275	0.364
Number of co			25	25	25
Country FE			YES	YES	YES
Dependent variable is corporate philanthropy Standard errors in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					
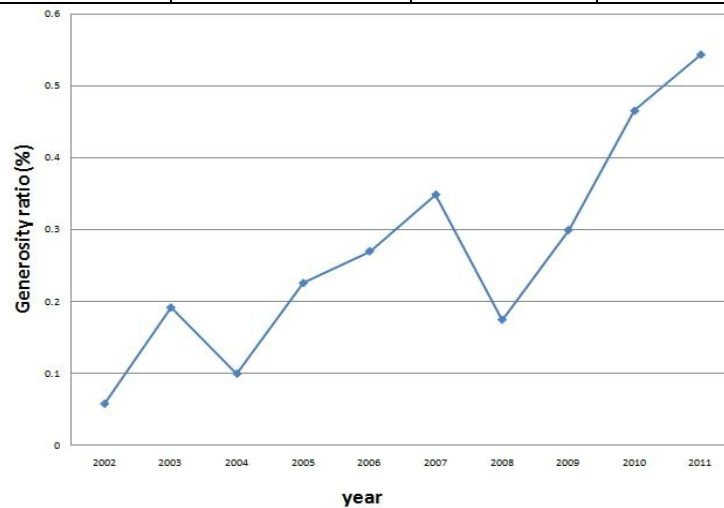
Figure 1: Generosity ratio (Charity/PBT x 100, summed for all companies in LSE 25 Index) against time

Donations for all LSE 25 Index companies rose from a mean of 0.058% of PBT in 2002 to 0.5437% in 2011. The mean figures of graph shows no linearity while the generosity giving has been effected by natural disasters of 2005 and 2010. The large peak in graph is due to increase in generous giving behavior of companies rather than reduction in profitability.

5. CONCLUSION

Corporate philanthropy is important, as the donations have been considered as a source to improve the image of business entity in modern era of high competition. The main objectives of this study are to understand the donation patterns of the firms, its determinants and through this the effects of profitability, firms' size, advertising and size of board on the CP. Further; we analyzed how the patterns of charity affected by the disasters. Research study also analyzed different econometric techniques and found fixed effect model as adequate one, explained that profitability, advertising and employee cost has positive and significant impact on the CP. Partial F test suggests that donations are effected by disasters as introducing dummy coefficient's positive sign means that LSE 25 Index firms are more responsive and generous in case of natural disasters like earthquake and floods. Managers of charitable institute can find this research useful for target setting and fund raising campaign. They can target all firms in time of natural disasters rather focusing only on large organizations and conventional more generous firms, as all firms respond to disasters by increasing their charitable donation amounts.

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