

## **CORPORATE SOCIAL RESPONSIBILITY AND COST OF EQUITY: Mediating Role of Financial Performance**

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### **Abstract**

This research study aims to investigate the relationship between corporate social responsibility and the cost of equity with financial performance as a mediator. The sample of the study comprises of 100 firms listed on the Karachi Stock Exchange. The period of study ranges from 2005 to 2014. Panel regression techniques have been used to carry out the research. For mediation analysis bootstrapping technique is used. The results of bootstrap test shows that financial performance does not mediate relationship between corporate social responsibility and the cost of equity. Overall, results of the study suggests that in Pakistan corporate social responsibility is still at its infancy stage and there is a need for civil society, business class and the government to create mass awareness about corporate social responsibility.

*Key Words:* CSR, Cost of Equity, Financial Performance, Mediation, KSE-100 Index.

*JEL Classification:* G30, G32, G3.

### **I. Introduction**

In the present era Corporate Social Responsibility (CSR) has become one of the dominant theme in business and the academic world. Nowadays, many companies have started issuing the CSR reports because of the pressure of stakeholders. All stakeholders including customers, investors, creditors, suppliers, government and local community forces the firms to become more socially responsible for betterment of the society. CSR has been defined by a number of researchers in different ways. According to McWilliams and Siegel (2001) CSR is basically an undertaking of all those activities which are undertaken for betterment of the society and which are not required by the law of the land. Carroll (1979) introduced a definition of CSR with four characteristics, which are:

1. Economic Responsibility suggests that a firm has earn profit for its shareholders,
2. Legal Responsibility suggests that a firm should comply the law of the land.

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3. Ethical Responsibility is that the firm is expected to behave ethically beyond the law, and
4. Discretionary Responsibility includes firms' contribution to the society in form of donations, it was revised by Carroll (2004) as Philanthropy.

In the academic literature CSR has witnessed an increased popularity in the last decade, e.g., McWilliams and Siegel (2001), Cajias, et al. (2014), Lee and Faff (2009), Orlitzky, et al. (2003) Dhaliwal, et al. (2011), Waddock and Graves (1997). Corporate managers face challenges to go beyond legal requirements and spend on activities related to CSR. These challenges vary from each other; for example, an environmentally friendly process of production, contribution to the society in form of donation, health and safety programs for employees, development of programs for non-animal testing or improvement in the overall safety and quality of the products. Consequently, the attention of firms changes from only shareholder-orientation [Friedman (1970)] to a stakeholder-orientation [Freeman (1984)]. Due to its high importance the CSR has changed the perception of relationship between corporations, the environment it is operating in, and its stakeholders like shareholders, customers, suppliers, employees, creditors, NGOs, and the government.

The motivation for carrying out this particular study is that the relation between CSR and cost of equity is mainly studied in developed economies and there is less work done in the developing economies like Pakistan. Therefore, this study investigates the relation between the CSR and cost of equity with financial performance as mediator. After the introduction in Section I, literature is presented in Section II. The research methodology is presented in Section III, while, Section IV discusses the results of the Study. Section V concludes the paper providing limitations of the study and guidelines for future research on this effort.

## **II. Literature Review**

There are several ways in which CSR may reduce the cost of equity of a firm. First, the CSR activities may reduce a firm's risk. A number of studies have been conducted regarding relationship between the CSR and risk. According to Lee and Faff (2009) firms engaged in high CSR activities tends to have lower firm's specific risks. On the contrary, firms which are socially irresponsible may have to bear uncertain explicit claims in the future. For instance, if a company sells products which are unsafe and may be hazardous for environment, the situation can increase litigation risk and thus may increase a company's future cost of capital [Waddock and Graves (1997)]. According to Boutin and Savaria (2004) Canadian firms which investigate CSR activities exhibits lower risk as compared to those firms which are socially irresponsible. Second, CSR may reduce a firm's cost of equity by reducing information asymmetry. An empirical study conducted by Dhaliwal, et al. (2011) showed that firms with high CSR discloses more information

so that a positive image of responsible corporate citizens may be built in minds of investors and stakeholders. According to Clarkson, et al. (2011) companies with high environmental performance, as well as those which have higher tendency for pollution, disclose more information related to environment and will thus reduce information asymmetry through this way. Thirdly, investors who are socially conscious will not invest in firms with low CSR. Firms which invest in CSR activities sends a positive signal to investors, making them believe that their desired rate of return can be achieved by investing in these firms [Cox and Wicks (2011)]. According to Heinkel, et al. (2001) investors who are environmentally conscious will invest only in green firms resulting a situation in which only neutral investors will hold stocks of the polluting firms. It will result in lower investors base and high risk for such firms. As a result, those firms will have to offer high rate of return to neutral investors, so as to compensate them for high risk.

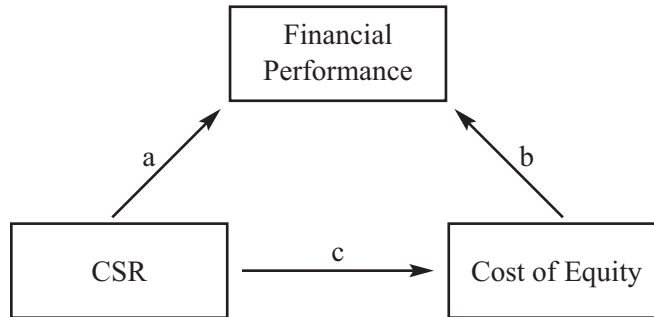
To date empirical research has produced inconclusive results regarding relationship between CSR and firms' financial performance. The literature documents three types of relationship between the CSR and financial performance i.e., positive, negative and with no relation, at all. According to Freeman's (1984) Stakeholders theory is that, a firm should give due consideration to various stakeholders associated with the firm directly or indirectly. This may lead to improve the image and reputation of corporations which in turn could enhance firm's overall productivity and the financial performance [Hillman and Keim (2001), Donaldson and Preston (1995)]. On the contrary, Friedman (1970) argued that the only responsibility of a business is to maximize the profit of shareholders, and also CSR is not a value creator rather, it is a waste of firm's resources. Other authors hold similar views and argue that investment or expenditures in CSR activities are not aligned with main objectives of the corporation, and thus, these investments are diversion of firm's resources from the main objective of its existence [Ullman (1985), as cited in Goss and Roberts (2011)].

Margolis and Walsh (2003) studied 131 papers and reported inconclusive results. Even though a positive relationship is documented by 53 per cent of the work but the remaining work shows negative, mixed or either no relation at all. The reasons for inconclusive results may be the measurement of CSR such as, Fortune and KLD database. Gana and Dakhlaoui (2011) examined the relationship between cost of equity and CSR in Tunisia. The study concluded insignificant relation between CSR and cost of equity. CSR is not a value producer rather it is wastage of firm resources which could have been otherwise allocated to other financial or operational activities of the firm. Shu, et al. (2015) examined the relation between CSR and firm's performance with social capital as mediating variable in Taiwan. They showed that social capital fully mediate the relation between CSR and the firm's performance. CSR enhances the financial performance, which in turn increase the investors' base, though larger investors' base reduces risk, thereby reducing the cost of equity. Financial performance mediates the relationship between CSR and cost of equity [Musabih and Alfatani (2014)]. Based on the given literature, the following hypothesis is developed.

$H_1$ : Financial performance mediates the relationship between corporate social responsibility and Cost of equity capital.

### 1. *Conceptual Framework*

The conceptual framework of the study is,



Source: Authors' estimation.

**FIGURE 1**  
Conceptual Framework

## III. Research Methodology

### 1. *Sample Size and Data*

Sample of the present study comprises of 100 companies listed with the Karachi Stock Exchange over a period of 2005 to 2014. The type of data used in this research study is the secondary data used by the previous studies. The data was collected from different sources such as annual reports of the firms, website of the state bank, from business recorder's website and official websites of the companies. Stata 12 has been used for the analysis of the data.

### 2. *Variables of the Study*

#### a) *Dependent Variable*

Dependent variable of this study is the cost of equity. In line with the previous studies of Rehman and Zaman (2011) and Hajiha and Sarfaraz (2013) the capital asset pricing model is used to determine the cost of equity of a firm. The cost of equity can be defined as fair rate of return of an investor demands on his ownership in the company for taking risk [Brealey and Myers (2003)]. Fair means the right trade-off between

risk profile of the firm (i.e., risk investors are exposed to) and the return on investment. Thus, the cost of equity represents the compensation that investors demand for ownership in the company and taking risk that is undiversifiable.

***b) Explanatory Variable***

The explanatory variable of the study is CSR. The measurement of CSR is a constant problem in the literature of CSR [Waddock and Graves (1997), Cajias, et al. (2014)]. Perhaps it has been one of the reasons for great variety of measures and lack of uniformity on the measures of CSR [Margolis and Walsh (2001) OR 2003 in Ref]. Such difficulty in measuring CSR may be due to lack of relevant data, as the case of Pakistan. In developed markets CSR is measured through KLD database which present score of the CSR for each company. In this study a CSR index is developed using three social actions relationship with employee, environment and donations to the society. In this study CSR index refers to the mean of all social expenses over company's net sales [Crisóstomo, et al. (2013)]. These three dimensions of the CSR of a company are utilized as proxies in number of pervious works as discussed by Orlitzky, et al. (2003) and Margolis and Walsh (2003).

***c) Mediating Variable***

The mediating variable in this study is financial performance. In line with previous studies of Kim and Kim (2014), Surro ca, et al. (2010), Kang, et al. (2010) and Crisostomo, et al. (2013) Tobin's Q is used to capture firm performance. There is a vast literature available on the measurement of financial performance. Both, the accounting and as well as the market based measures, are available for measuring financial performance. However, accounting based measures are vulnerable to differential accounting procedures and the managerial manipulation, as well as its backward looking approach. Contrary, market based measure is appropriate because of its ability of measuring long-term investment. It is also justified because of its ability of incorporating all relevant information and unlike accounting based measures they are not limited to a single aspect of financial performance [McGuire (1988)]. Therefore, this study uses Tobin's Q which is measured as a total market value divided by the total book value of assets.

***d) Control Variables***

Control variables are included in the model to moderate the results for a vast number of factors. The study uses firm size, leverage, market to book value, and market value as control variables, which is also used by previous studies [Cajias, et al. (2014), Dhaliwal, et al. (2011), and Ghoul, et al. (2011)]. Along with their measurement, the dependent, independent, mediating and control variables of the study are given in Table 1.

**TABLE 1**  
Measurement of Variables

Variables (Abbreviations)	Measurement
<i>Dependent Variable</i>	
Cost of Equity (CoEC)	Cost of equity is calculated using Capital Assets Pricing Model (CAPM).
<i>Independent Variable</i>	
Corporate Social Responsibility (CSR)	CSR index will be measured through relative amounts spent on three social actions relationship with employees, external social action and environmental action. Here CSR index refers to the mean of all social expenses over the Company's net sales.
<i>Mediating Variable</i>	
Financial Performance (FP)	Tobin'Q = Total Market value + Debt/Total assets value.
<i>Control Variables</i>	
Market to book value (MtBv)	Natural log of market capitalization divided by total assets.
Market Value (MV)	Natural log of market capitalization of the firm defined as market price-year end multiplied by common shares outstanding.
Size of the firm (size)	Size of the firm is calculated by taking the natural log of firm's total assets.
Financial Leverage (LEV)	Debt Ratio = Total Debt/Total Assets.

*Source:* Authors' estimation.

### 3. Panel Regression Models

To determine whether financial performance mediates relations between CSR and cost of equity, the study uses the method proposed by Zaho, et al. (2010) and Preacher and Hayes (2008), instead of Baron and Kenny approach. According to Zaho, et al. (2010) it is not necessary to have significant relationship between independent and dependent variables. The significant relation between dependent and explanatory variables sometimes can be misleading, This is just because it represents the combined effect of the sum of direct and indirect effects which includes mediators as well. The mediation can only

be established if there is an evidence of indirect effect, only. In short, for mediation all what matters is that indirect effect is significant [Zaho, et al. (2010)]. Thus, the following two models are developed for testing the effect of financial performance as mediator.

$$(FP)_{it} = \alpha + \beta_1 CSR_{it} + \beta_2 LEV_{it} + \beta_3 MtBv_{it} + \beta_4 MV_{it} + \beta_5 Size + \mu_{it} \quad (1)$$

$$(CoEC)_{it} = \alpha + \beta_1 CSR + \beta_2 FP_{it} + \beta_3 LEV_{it} + \beta_4 MtBv_{it} + \beta_5 MV_{it} + \beta_6 Size + \mu_{it} \quad (2)$$

where,

- CoEC<sub>it</sub> = Cost of equity of *i*th firm in time *t*,
- A = Constant of the equation,
- CSR<sub>it</sub> = Corporate Social Responsibility of *i*th firm in time *t*,
- FP<sub>it</sub> = Financial Performance,
- Lev<sub>it</sub> = Capital structure proxy of *i*th firm in time *t*,
- MtBv<sub>it</sub> = Market to book value of *i*th firm in time *t*,
- MV<sub>it</sub> = Market value of *i*th firm in time *t*,
- Size<sub>it</sub> = Firm size of *i*th firm in time *t*, and
- $\mu_{it}$  = Error term of the equation.

#### IV. Results and Discussion of the Study

Since data of this study is a combination of time series (ten years) and cross section data (hundred firms) therefore, it is a panel data. The study used different statistical tools like descriptive stat, correlation analysis and panel regression analysis in order to examine the relationship between CSR and cost of equity with financial performance as mediating variable.

##### 1. Descriptive Statistics

Table 2 shows the mean and standard deviation values of both the dependent and independent variables. The dependent variable cost of equity has mean and standard deviation value of 0.2572334 and 0.2038302, respectively. Mean and standard deviation values of the main explanatory variable CSR are 0.7941521 and 6.984352. The values for financial performance, measured by Tobin's Q are 1.412653 and 1,314519, respectively. The average value of financial performance is greater than one which indicates that sample firms chosen from KSE listed firms worth more than their book value.

##### 2. Correlation Analysis

The correlation analysis of variables of the study is given in Table 3. The CSR is positively correlated with cost of equity which indicates that with increase in CSR ac-

**TABLE 2**  
Descriptive Statistics

Variables	Mean	Standard Deviation
CoEC	0.257233	0.20383
CSR	0.794152	6.984352
FP	1.412653	1.314519
MtBv	1.917271	5.696184
MV	14.87355	2.033435
Size	15.61687	1.602833
Lev	0.517686	0.239888

*Source:* Authors' estimation.

tivities, the value of cost equity may increase and; thus supporting the view CSR is wastage firm's resources [Goss and Roberts (2011)]. The financial performance measured through Tobin's Q is negatively correlated with dependent variable cost of equity; however, this correlation is insignificant. The negative correlation suggest that cost of equity may be reduced by enhancing financial performance. Similarly, the market book value and the size are significantly, negatively correlated with the cost of equity; whereas the market value is positively correlated with dependent variable of the study. Also, the size of firm is positively correlated with CSR which depicts that larger firms invest more in CSR activities than the smaller firms because larger firms have more

**TABLE 3**  
Correlation Analysis

	CoEC	CSR	FP	MtBv	MV	Size	Lev
CoEC	1						
CSR	0.027	1					
FP	-0.050	-0.021*	1				
MtBv	-0.007**	-0.004	0.22***	1			
MV	0.019*	-0.041	0.34***	0.114**	1		
Size	-0.000**	0.062**	-0.028	0.0151	0.756***	1	
Lev	0.081*	0.013	-0.11**	0.013	-0.132***	0.75***	1

N=1000. \*\*\* Correlation is significant at the 0.01 (1 per cent) levels. \*\*Correlation is significant at the 0.05 (5 per cent) level. \*Correlation is significant at the 0.10 (10 per cent) level.

*Source:* Authors' estimation.

stakeholders and environmental concerns. Thus, they invest more in CSR activities in order to legitimize their behavior more; as well as to avoid future litigation and the political costs [Ghoul et al. (2011), Reverte (2012)].

### 3. *Panel Regression Analysis*

Models 1 and 2 of the study are estimated using panel regression techniques because data of this research have both features of cross sectional, as well as the time series data. Therefore, panel regression technique is used to analyze the two models of the study. To decide between the fixed and random effects model, Hausman (1978) specification test has been used to select the appropriate model between fixed and random effect. If the value of  $p$  is significant then the fixed effect model is best for analysis, otherwise random effect model should be used. The  $p$ -value for Hausman test is 0.4728 which indicates that it is insignificant. Thus, the random effect model is used to analyze the impact of independent variable on dependent variable.

Heteroscedasticity and multicollinearity in the data can affect the estimates of random effect model. To check the multicollinearity in the data, Variance of inflation factor (VIF) is used. The mean value of VIF is 2.01 which is less than the critical value of 10, therefore, it indicates that there is no multicollinearity. For testing heteroscedasticity, Breusch-Pagan test is used. The  $p$ -value of the said test is 0.043 which suggests that null hypothesis will be accepted where the data is homoscedastic. To test whether the CSR, cost of equity and financial performance can be considered as endogenous variables or not the Hausman specification test [Hausman (1978)] was applied for checking the endogeneity. As per recommendations of Gujarati (2004), the predicted values of CSR, cost of equity and financial performance as measured by Tobin's Q were estimated and used with original values as well as with control variables of the study. The Chi2 statistics for the predicted values of CSR and Tobin's Q given in Table 4 were found to be insignificant. Thus, the CSR, Cost of equity and Tobin's Q can be considered as exogenous variables.

According to the results reported in Table 4, there is a negative and weak significant relationship between CSR and the proposed mediator financial performance in Model 1. When Tobin's Q, CSR and control variables are included in Model 2, it is found that there is no significant relation between CSR and cost of equity which represents that the direct effect is insignificant. Similarly, Tobin's Q has negative insignificant relation with dependent variable of the study. Thus, the indirect effect which is  $(axb)$  in Figure 1, is 0.000077. According to Zaho, et al. (2010) and Preacher and Hayes (2008), Baron and Kenny the method for testing mediation should be replaced with bootstrap test of indirect effect. Thus, the bootstrap test (with 5,000 bootstraps sample) is employed to test the mediation effect of financial performance between CSR and cost of equity. The results show that the indirect effect is insignificant with a bias corrected 95 per cent confidence intervals including zero (-0.016, 0.085) and thus, there

exist no mediation and the proposed hypothesis of the study is rejected. The results are consistent with the results of Hamid, et al. (2011) as their study also found no mediation effect of financial performance. Among the control variables market to book ratio and size are significantly negatively related with dependent variable cost of equity; whereas leverage and market value are weakly significantly related with the dependent variable. The results of control variables are in line with previous studies [Cajias, et al. (2014), Whaba and Elsayed (2015), Dhaliwal et al. (2011)].

**TABLE 4**  
Random effect Estimation

Explanatory Variables	Coefficients	
	Model 1 (Mediator =Tobin's Q)	Model 2 (Dependent Variable = CoEC)
CSR	-0.00953 (0.081)	0.000225 (0.837)
Tobin's Q	- -	0.008074 (0.186)
Lev	0.54238 (0.072)	0.066309 (0.066)
MtBv	0.012737 (0.0025)	-0.001455 (0.004)
Size	-0.419811 (0.000)	-0.025662 (0.003)
MV	0.508003 (0.000)	0.012014 (0.054)
R Square	0.222	0.1691
F Value	45.14	84.36
Prob (F-Statistics)	0.000	0.000
Hausman test P value	0.4728	-
Breusch- Pagan test	0.043	-
Mean Value of VIF	2.01	-
CSR (predicted value) test	1.13 (0.248)	0.12 (0.302)
Tobin's q (predicted value) test	- -	1.86 (0.387)

P-values are given in the brackets.

Source: Authors' estimation.

Table 5 illustrates the direct, indirect and total effect. In this analysis variables of interest are CSR and financial performance which is measured by Tobin's Q. It is clear from the results that total effect for CSR is 0.0008517 which would be obtained if there is no mediator in the model. The p-value is insignificant in this case. As far as the direct effect is concerned it is 0.0009287 for CSR and is insignificant. The indirect effect (axb) of CSR that passes through financial performance is 0.0000777 which is also statistically insignificant indicating that there exist no mediation at all.

**TABLE 5**  
Direct, Indirect and Total Effect

	Coefficients	P Value
Direct Effect		
<u>CoEC &lt;-</u>		
Tq	-0.0096713	0.069
CSR	0.0009287	0.386
MV	0.0011582	0.731
MBV	-0.0008712	0.451
Size	0.0	-
Lev	0.077096	0.004
Indirect Effect		
<u>CoEC &lt;-</u>		
Tq	-0.0876567	0.387
CSR	0.0000777	0.323
MV	0.0054712	0.070
MBV	0.0003014	0.086
Size	-0.0056286	0.070
Lev	0.0053998	0.104
Total Effect		
<u>CoEC &lt;-</u>		
Tq	-0.0096713	0.069
CSR	0.0008517	0.354
MV	0.0066294	0.078
MBV	0.0003014	0.616
Size	-0.0056286	0.070
Lev	0.0824794	0.003

Source: Authors' estimation.

## **V. Conclusions**

This research investigates the relation between CSR and cost of equity with financial performance as mediating variable in the context of Pakistan. For obtaining precise results a number of statistical tools like descriptive statistics, correlation analysis and panel econometric procedures have been utilized. It is found from the analysis that the indirect effect is not significant; and hence, it is concluded that financial performance does not mediate relationship between CSR and cost of equity. One possible reason of the insignificant results is that measurement of CSR has no unified method in developing countries for measuring CSR. Another possible reason is that CSR is not that much mature in countries like Pakistan, as compared to USA and Europe where concept of CSR is much more mature. Perhaps that's why corporations in Pakistan, especially local corporations, do not pay much attention to the phenomenon of CSR.

### ***1. Limitations and Future Research***

The findings of this study are subject to certain limitations as the sample of this research study is only limited to 100 non-financial firms listed on the Karachi Stock Exchange; the study only considers the time period, from 2005 to 2014. The possibility of potential future research is that a different index can be made for CSR measurement to study the above relationship and further research may be undertaken with other relevant mediating moderate variables as well.

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