Unpacking CEO Power: A Comprehensive Analysis of its Impact on Corporate Social Responsibility and Firm Value

Moeen Ul Haq [1]*, Khan Bahadar [2], Muhammad Kamran [3], Muhammad Waqas Qazi [4]

[1] Institute of Management Studies, University of Peshawar, Peshawar, Pakistan

[2] Higher Education Department, Khyber Pakhtunkhwa, Pakistan

[3] University of Haripur, Haripur, Pakistan

[4] Accounts & Finance Department, Hayatabad Medical Complex, Peshawar, Pakistan

Abstract: This research delves into the dynamic interplay between CEO power, Corporate Social Responsibility (CSR), and firm value with a focus on exploring the implications of agency theory. The primary objective is to evaluate the presence of agency theory's overinvestment hypothesis within the context of Pakistani non-financial firms. To scrutinize this complex relationship, the study leveraged a dataset comprising annual reports from 150 Pakistani non-financial companies spanning a five-year period from 2011 to 2015. Through rigorous analysis, combining logistic regression and panel data regression techniques, the research set out to ascertain how CSR and firm value are intertwined with CEO power. The analytical framework employed in this investigation utilized Stata, a robust statistical software package, to elucidate the multifaceted relationship among these key variables. The results derived from both the logistic regression and panel data regression analyses yielded intriguing findings. Contrary to the expectations derived from the overinvestment hypothesis of agency theory, the research reveals a notable absence of a significant relationship between CEO power and CSR. Furthermore, the study also uncovers a similar insignificance in the relationship between CSR and firm value. These outcomes challenge prevailing notions and provoke contemplation on the complexities inherent in understanding the dynamics of corporate governance, social responsibility, and financial performance in the context of Pakistani non-financial firms. In summary, this study enhances our comprehension of the intricate interplay between CEO power, CSR, and firm value and offers a nuanced perspective on the application of agency theory in the Pakistani corporate landscape. The results pave the way for further research and deeper explorations into the underlying mechanisms governing these relationships.

Keywords: CEO power, Corporate social responsibility (CSR), Firm value and Agency theory.

Received: 06 June 2023 / Accepted: 09 August 2023 / Published: 10 October 2023
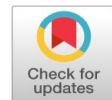
INTRODUCTION

Friedman's (1970) remarks that "a corporation's social responsibility is to make a profit" started the arguments concerning the association between corporate social responsibility (CSR) and the performance of a firm. Since then, different research using different measures of CSR and performance has been carried out. Moreover, the decision to engage in CSR was also linked with Jensen and Meckling's (1976) "Agency theory," which proposes that key decision makers, managers, or CEOs who decide to engage in CSR may as well do that for their benefit instead of considering the costs involved in engaging in CSR. CEOs, to build a good reputation, invest more in CSR than they should if they were to promote the interests of the principal (firm/shareholders); instead, they promote their self-interest (Barnea & Rubin, 2010; Malmendier & Tate, 2005). This presents a classical agency problem. Based on this overinvestment hypothesis, the higher the CEO power, the more likely a firm will take on CSR activities (Nureen et al., 2023). Moreover, if a CEO engages in CSR solely for self-reputation building, the firm's performance will be negatively affected, and its value will consequently decrease (Khan et al., 2023).

Keeping Friedman's school of thought and those who agreed with him in view, this thesis report tries to investigate whether or not the overinvestment hypothesis stands true. One shall expect the association between CEO power and CSR to be positive if the overinvestment hypothesis is true. Moreover, if CSR is the source of

---

*Corresponding author: Moeen Ul Haq
†Email: Moeen.ulhaq@uop.edu.pk

personal image building, then it should end up in the deterioration of a firm's performance, and thus, we shall expect the relation between CSR and firm value to be negative (Novitasari et al., 2023).

Studies have been carried out on the association between corporate governance and CSR (Jamali et al., 2008; Harjot & Jo, 2011), between firm performance and CSR (Margolis & Walsh, 2003; Vogel, 2005; Mishra & Suar, 2010; Jo & Harjoto, 2012), but the association of CEO power with CSR has been overlooked. This thesis report tends to fill the said gap by examining the association between CEO power and CSR to provide a better understanding of the effect of CEO power on a firm's decision to engage in CSR activities and the extent to which CEO power influences the level of activities involving CSR including its impact on firm value, proving whether or not CSR is an agency cost.

LITERATURE REVIEW

CSR and CEO Power: Empirical Evidence

The available literature on the association between CEO power and CSR is relatively scarce. Jiraporn and Chintrakarn (2013) approached this topic by utilizing the CEO pay slice (CPS) as a proxy for CEO power, drawing from the framework established by Bebchuk et al. (2011). Their study yielded a dual perspective. On one hand, they identified a positive correlation between CSR engagement and CEO power, particularly in situations where the CEO's influence was relatively limited. However, they observed a decline in CSR investments as the CEO's Power grew, eventually reaching a threshold where the CEO held substantial decision-making authority singlehandedly. This study also introduced the notion of a CEO power threshold beyond which CSR investments substantially decreased (Novitasari et al., 2023).

The over-investment hypothesis posits that as CEOs amass more Power, their inclination to partake in CSR initiatives intensifies as a means to bolster their public image. In this context, Li, Li, and Minor (2016) challenge the over-investment hypothesis while reaffirming the conclusions of Jo and Harjoto (2012). Their findings emphasize a positive correlation between CSR activities and firm value. Li et al. (2016) adopted a distinctive approach, incorporating CEO pay slice from Bebchuk et al. (2011) and CEO tenure into their study. They also introduced relevant dummy variables, such as the CEO's concurrent role as the board chairman. By incorporating these variables, they conducted an empirical analysis that explored the interplay between CEO power and a firm's decision to engage in CSR, an area that had been relatively unexplored within the existing literature.

H1a: CEO power and CSR are positively associated, considering the overinvestment hypothesis to be true. Moreover, an increase in CEO power will raise the level of CSR activities the firm engages in.

H1b: CEO power and CSR are either negatively associated or not associated at all, considering the overinvestment hypothesis to be false. Moreover, an increase in CEO power will decrease the level of CSR activities the firm engages in.

CSR and Firm Value: Related Theories

As per the management theorists, the firm performance is increased if it improves its CSR activities (Waddock & Graves, 1997). Three theories, namely (i) consumer inference making, (ii) signaling theory, and (iii) social identity theory, can explain the impact of CSR on firm performance.

"Consumer inference-making theory" proposes that by having information regarding the firm's responsible practices, a consumer has a positive inference of the firm's product (Brown & Dacin, 1997). These positive presumptions of the consumer regarding a firm's product lead to consumer goodwill (Handelman & Arnold, 1999), which has a significant impact on their purchase decisions (Khan et al., 2023).

"Signaling theory" proposes that asymmetrical information between buyers and sellers may make consumers differentiate between firms by looking for information regarding the firm's good or poor performance in specific attributes of interest (Novitasari et al., 2023). e.g., warranties offered by firms signal reliance and better quality, which impacts the consumers' decision to purchase a certain product (Nureen et al., 2023). Consumers tend to link good product quality with proactive CSR practices (Ngo et al., 2023), whereas a firm's attractiveness towards those seeking employment is also signaled by its association with CSR activities (Uyar et al., 2023).

Firm Value and CSR: Empirical Evidence

The association between Corporate Social Responsibility (CSR) and its impact on firm value remains multi-faceted and subject to differing theoretical frameworks. In this regard, two predominant perspectives have emerged to assess the connection between CSR and firm value. The first viewpoint posits a negative association, as advanced by some studies, attributing this relationship to the heightened costs associated with extensive CSR activities, which potentially place the firm at a financial disadvantage (McWilliams & Siegel, 2001). Such increased expenses encompass substantial charitable contributions, the promotion of community development initiatives, and the implementation of environmental conservation measures.

On the contrary, a second perspective, as endorsed by research studies like McGuire et al. (1988) and Saeidi, Sofian, Saeidi, Saeidi, and Saaeidi (2015), asserts a positive association between CSR and firm value. This perspective highlights the potential for heightened employee motivation and satisfaction, augmented consumer support and loyalty, and strengthened relationships with financiers, government authorities, and investors. These amicable associations, in turn, enhance the firm's access to financial resources. However, it is essential to acknowledge that the latter perspective has yielded mixed results in various empirical investigations, as demonstrated by studies such as McWilliams and Siegel (2001), Tsoutsoura (2004), and Jo and Harjoto (2012).

Empirical Evidence from Developing Countries

In contrast to Jo and Harjoto (2012), who have studied huge samples of data for developed countries like the US, studies regarding the association of CSR and firm financial performance have also been carried out for developing countries as well. Aras, Aybars, and Kutlu (2010) presented empirical evidence regarding the association of CSR with firm performance for 100 index firms on the Istanbul Exchange from 2005 to 2007, employing different methodologies. This was the first empirical study conducted for Turkish firms. The results suggested the relationship between the two variables to be insignificant.

Unlike Aras et al. (2010), Crisostomo, Freire, and Vasconcellos (2011) found a negative relationship between CSR and firm value in Brazil. The analysis was conducted for a sample of 78 non-financial firms from 2001 to 2006. A three-dimensional corporate social responsibility Index was developed, which also incorporated all the expenses incurred by a firm in its social adventures.

Similarly, Mishra and Suar (2010) studied the association of CSR with a firm's financial performance as well as the non-financial performance in the context of yet another developing country like India. Data regarding the financial performance of a sample of 150 firms was obtained from secondary sources, whereas CSR was measured by aggregating 06 stakeholder groups, "employees, customers, investors, community, natural environment, and suppliers," in the form of a questionnaire. After controlling for firm size, stock ownership, and stock listing, when managers are more prone to CSR activities, firms' financial and non-financial performance is enhanced. They found out that firms operating in India derive both financial and non-financial benefits from responsible business practices in the form of CSR, which is in contradiction to other results with regards to the association of CSR with firm performance for developing countries as provided by Aras et al. (2010) and Crisostomo et al. (2011).

Apart from the above-mentioned theories that shed light on the association of firm value with CSR and the subsequent empirical evidence, this thesis report tends to investigate the presence of an overinvestment hypothesis based on agency theory in explaining the association of CSR with firm value.

H2a: CSR and firm value are negatively associated, considering the overinvestment hypothesis to be true. Moreover, an increase in CSR Level will decrease the value of the firm.

H2b: CSR and firm value are either positively associated or not associated at all, considering the overinvestment hypothesis to be false. Moreover, an increase in CSR Level will increase the value of the firm.
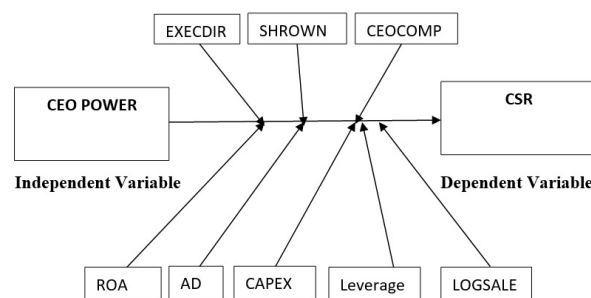
Theoretical Framework
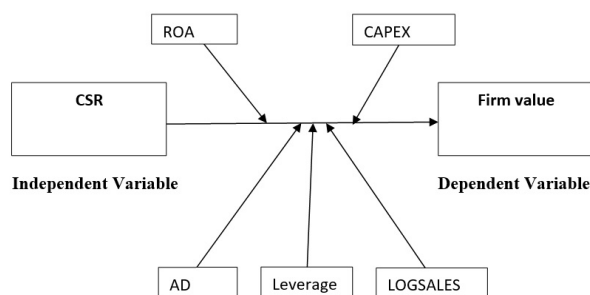

Figure 1: CEO Power and CSR

Figure 2: CSR and Firm Value

METHODOLOGY

This study encompassed non-financial firms in Pakistan as its target population. Employing a convenient sampling technique, a sample of 150 non-financial firms was selected, and their annual reports were utilized as the primary data source over a span of five years (2011-2015). The data underwent rigorous analysis using Stata to unravel the relationships between the chosen variables. The anticipated outcomes were rooted in the assumption that CEO power would exhibit a negative correlation with corporate social responsibility while a positive relationship would exist between corporate social responsibility and firm value, aligning with the findings of prior studies (Jo & Harjoto, 2011; Li et al., 2016).

Sampling Technique

As we know, the population for this study comprises the non-financial firms of Pakistan. There are different sampling techniques categorized into probability sampling and non-probability sampling. In this study, a non-probability sampling technique called convenient sampling, also known as availability sampling, is utilized because those firms were selected whose data was easily available.

Variables

In this study, three variables were under consideration, i.e., CEO power, CSR, and firm value. Although we could have used many variables to study, following Li et al. (2016), the stated variables were used.

CEO power: CEO power was measured by using two proxies. One proxy was the "CEO pay slice" (CPS), as it explains several aspects of the CEO's part in the top management squad (Bebchuck et al., 2011; Chintrakarn et al., 2014). The second proxy was a dummy variable, "Duality" i.e., whether the CEO also serves in the capacity of board chairman or not (Almeida et al., 2005; Li et al., 2016). The relationship of CEO power with CSR was analyzed using both the proxies for CEO power. CPS was measured by dividing the CEO compensation by the total compensation of the executives as well as the CEO for each firm. The compensation included managerial remuneration, bonuses, retirement benefits, utilities, insurance, medical, etc.

The dummy variable "Duality" was measured by using 1 when the CEO was also the chairman of the firm, whereas it was labeled 0 if the opposite situation occurred. Moreover, Adams et al. (2005) posited that CEO power is influenced by the number of titles he holds in a firm, and duality represented title concentration, which was employed for determining CEO power. Duality was considered to be a good proxy under the pretext that if the CEO is just a CEO and not the board chairman, then his influence on decision-making will be lower. This was because the chairman holds the autonomy to determine a firm's strategic course of action as well as its main contributions to decision-making.

Corporate social responsibility (CSR): Since CSR has many aspects associated with it, we can say that it is a multidimensional phenomenon, including a variety of behaviors by firms, such as pollution control equipment installations, community welfare measures, product quality and packaging, energy conservation, etc. These behaviors are observed in different types of industries having unique characteristics and histories in different areas of CSR (Waddock & Graves, 1994). This resulted in the need for a multidimensional measure of CSR, which can be used for all industries and can be applied to a large sample.

Many empirical research studies have focused on either one aspect of social performance or another. Even the CSR measures consisted of methodologies that were one-dimensional, such as pollution control investments (Shane & Spicer, 1983). Thus, constructing a truly representative measure is difficult as CSR entails a wide range of behaviors, bringing complexity to the variable, and a single dimension of CSR can give insight only about one area of CSR, which cannot give us a full picture of the level of CSR activities a firm engages in (Lydenberg, 1986; Wolfe & Aupperle, 1991).

Firm value: The assessment of firm value in this study was conducted using Tobin's Q, a well-established metric widely employed for this purpose. Tobin's Q was calculated by dividing the market value of equity and the book value of assets, then subtracting the sum of the book value of common equity and deferred taxes from this result, and eventually dividing this value by the book value of assets (Bebchuck et al., 2011). This metric has been consistently utilized in prior research, including studies by Jo and Harjoto (2011) and Li et al. (2016), to assess and elucidate the concept of firm value, thus affirming its credibility and relevance as an apt measure for our variable "firm value."

$$Q_{it} = \frac{(MV \text{ of Equity} + BV \text{ of Assets}) - (BV \text{ of Common Equity} + \text{Deferred Taxes})}{BV \text{ of Assets}}$$

Control Variables

To control for the problem of endogeneity, we used control variables while determining the relationship between our main variables.

For determining the association between CEO power and CSR, control variables associated with CEO characteristics were used, such as CEOCOMP, which was measured as the total compensation of the CEO, SHROWN, which was measured by the CEO shares as compared to outstanding shares, EXECDIR which was a dummy representing whether CEO was the board member or not. Other control variables related to firm characteristics were also used, which included return on assets (ROA), advertising expenses ratio (AD), capital expenditure ratio (CAPEX), Leverage, i.e., a ratio of long-term debt and total assets, and LOGSALES, which was measured by the natural logarithm of total sales.

However, for CSR and firm value's association, only those control variables related to firm characteristics as mentioned above were used, which were also used by prior researchers such as Jo and Harjoto (2012) and Li et al. (2016), except RD which represents the research and development intensity of a firm but the annual reports of the sample under this study barely contains any data regarding the said control variable. The absence of the said variable from the study may result in an upward bias as encountered by McWilliams and Siegel (2001), who, upon regression of firm performance on the corporate social performance, demonstrated one major fault in the contemporary econometric research about the association of financial performance with CSR. This also presents a limitation of the study.

Moreover, since the data involves panel regressions and the period for which the data is being analyzed is five years, this study also uses year dummies to control for time series trends that are not controlled by other explanatory variables. As this dummy controls for any effects that the data may have due to specific events, e.g., stock crash, inflation, economic growth, etc., in a particular year, this further resolves our purpose to see the true association of the selected variables among themselves.

Research Models

In order to determine the association between CEO power and CSR, as well as the association between CSR and firm value, regression analysis for panel data was used. Following Li et al. (2016), the following models were used for establishing the above-mentioned associations:

Logistic regression models : The association between CEO power and CSR and between CSR and firm value was determined through logistic regression as the dependent variable CSR is a binary variable having two possible outcomes. The logistic regression models test the relationship of CSR with CEO power using different CEO power measures as well as different control variables. The association between firm value and CSR was also determined through logistic regression with different control variables.

Model 1a :

$$\mathrm{CSR}_{it} = \propto_i + \beta_i\,(\text{ CPS }_{it}) + \Sigma_{i=2}^{8}\beta_i\,(Z_{it}) + \sum_{i=9}^{12}\beta_i\,(\text{ YearDum }_t) + \varepsilon_i$$

Where Z_{it} are the vector of control variables that include EXECDIR, SHROWN, CEOCOMP, ROA, AD, CAPEX, Leverage, LOGSALES.

$$\text{CSR} = \text{ Dependent Variable}$$
$$\text{CPS} = \text{ Independent Variables}$$
$$\boldsymbol{\alpha} = \text{ Intercept of the equation}$$
$$\boldsymbol{\beta} = \text{ The co-efficient of independent/control variables}$$
$$\boldsymbol{\varepsilon} = \text{ Error term}$$

Model 2a :

$$\mathrm{CSR}_{it} = \propto_i + \beta_i\,(\text{ CPS }_{it}) + \sum_{i=2}^{9}\beta_i\,(Z_{it}) + \sum_{i=10}^{13}\beta_i\,(\text{ YearDum }_t) + \varepsilon_i$$

Where Z_{it} are the vector of control variables that include EXECDIR, SHROWN, CEOCOMP, ROA, AD, CAPEX, Leverage, LOGSALES, CSRLEVEL. **CSR** = Dependent Variable **CPS** = Independent Variables

Model 3a :

$$\mathrm{CSR}_{it} = \propto_i + \beta_i\,(\text{ DUALITY }_{it}) + \Sigma_{i=2}^{8}\beta_i\,(Z_{it}) + \Sigma_{i=9}^{12}\beta_i\,(\text{ YearDum }_t) + \varepsilon_i$$

Where Z_{it} are the vector of control variables that include EXECDIR, SHROWN, CEOCOMP, ROA, AD, CAPEX, Leverage, LOGSALES **CSR** = Dependent Variable

DUALITY = Independent Variables

Model 4a :

$$\mathrm{CSR}_{it} = \propto_i + \beta_i\,(\text{ DUALITY }_{it}) + \sum_{i=2}^{9}\beta_i\,(Z_{it}) + \sum_{i=10}^{13}\beta_i\,(\text{ YearDum }_t) + \varepsilon_i$$

Where Z_{it} are the vector of control variables that include EXECDIR, SHROWN, CEOCOMP, ROA, AD, CAPEX, Leverage, LOGSALES, CSRLEVEL. **CSR** = Dependent Variable

DUALITY = Independent Variables

Model 5a :

$$\mathrm{CSR}_{it} = \propto_i + \beta_i\,(Q_{it}) + \Sigma_{i=2}^{5}\beta_i\,(Z_{it}) + \Sigma_{i=6}^{9}\beta_i\,(\text{ YearDum }_t) + \varepsilon_i$$

Where Z_{it} are the vector of control variables that include ROA, AD, CAPEX, Leverage, LOGSALES **CSR** = Dependent Variable

$$\mathbf{Q} = \text{ Independent Variables}$$

Model 6a :

$$\mathrm{CSR}_{it} = \propto_i + \beta_i\,(Q_{it}) + \Sigma_{i=2}^{6}\beta_i\,(Z_{it}) + \Sigma_{i=7}^{10}\beta_i\,(\text{ YearDum }_t) + \varepsilon_i$$

Where Z_{it} are the vector of control variables that include ROA, AD, CAPEX, Leverage, LOGSALES, CSR-LEVEL **CSR** = Dependent Variable **Q** = Independent Variables

Panel data models : The association between CEO power and CSRLEVEL and between CSRLEVEL and firm value was determined through panel regression as the dependent variables CSRLEVEL and firm value were both cross-sectional and time series in nature. The panel data models test the relationship of CSRLEVEL with CEO power using different CEO power measures as well as different control variables. The association between firm value and CSRLEVEL was also determined through panel data regression with different control variables, giving us the impact of firm value on CSRLEVEL. The association of CSRLEVEL and CSR on firm value was also tested, through which the impact of both CSRLEVEL and CSR on firm value was found out in the following models.

Model 1b :

$$\text{CSRLEVEL}_{it} = \propto_i + \beta_i (\text{CPS}_{it}) + \sum_{i=2}^{8} \beta_i (Z_{it}) + \sum_{i=9}^{12} \beta_i (\text{YearDum}_t) + \varepsilon_i$$

Where Z_{it} are the vector of control variables that include EXECDIR, SHROWN, CEOCOMP, ROA, AD, CAPEX, Leverage, LOGSALES.

CSRLEVEL = Dependent Variable

CPS = Independent Variables

Model 2b :

$$\text{CSRLEVEL}_{it} = \propto_i + \beta_i (\text{CPS}_{it}) + \Sigma_{i=2}^{9} \beta_i (Z_{it}) + \sum_{i=10}^{13} \beta_i (\text{YearDum}_t) + \varepsilon_i$$

Where Z_{it} are the vector of control variables that include EXECDIR, SHROWN, CEOCOMP, ROA, AD, CAPEX, Leverage, LOGSALES, CSR.

CSRLEVEL = Dependent Variable **CPS** = Independent Variables

Model 3b :

$$\text{CSRLEVEL}_{it} = \propto_i + \beta_i (\text{DUALITY}_{it}) + \sum_{i=2}^{8} \beta_i (Z_{it}) + \sum_{i=9}^{12} \beta_i (\text{YearDum}_t) + \varepsilon_i$$

Where Z_{it} are the vector of control variables that include EXECDIR, SHROWN, CEOCOMP, ROA, AD, CAPEX, Leverage, LOGSALES.

CSRLEVEL = Dependent Variable

DUALITY = Independent Variables

Model 4b :

$$\text{CSRLEVEL}_{it} = \propto_i + \beta_i (\text{DUALITY}_{it}) + \sum_{i=2}^{9} \beta_i (Z_{it}) + \sum_{i=10}^{13} \beta_i (\text{YearDum}_t) + \varepsilon_i$$

Where Z_{it} are the vector of control variables that include EXECDIR, SHROWN, CEOCOMP, ROA, AD, CAPEX, Leverage, LOGSALES, CSR

CSRLEVEL = Dependent Variable

DUALITY = Independent Variables

Model 5b :

$$\text{CSRLEVEL}_{it} = \alpha_i + \beta_i (Q_{it}) + \Sigma_{i=2}^{5} \beta_i (Z_{it}) + \Sigma_{i=6}^{9} \beta_i (\text{YearDum}_t) + \varepsilon_i$$

Where Z_{it} are the vector of control variables that include ROA, AD, CAPEX, Leverage, LOGSALES.

CSRLEVEL = Dependent Variable

Q = Independent Variables

Control Variables = ROA, AD, CAPEX, Leverage, LOGSALES, Year Dummies.

Model 6b :

$$\text{CSRLEVEL}_{it} = \propto_i + \beta_i (Q_{it}) + \sum_{i=2}^{6} \beta_i (Z_{it}) + \sum_{i=7}^{10} \beta_i (\text{ YearDum }_t) + \varepsilon_i$$

Where Z_{it} are the vector of control variables that include ROA, AD, CAPEX, Leverage, LOGSALES, CSR
CSRLEVEL = Dependent Variable **Q** = Independent Variables

Model 7b :

$$Q_{it} = \propto_i + \beta_i (\text{ CSR }_{it}) + \Sigma_{i=2}^{5} \beta_i (Z_{it}) + \Sigma_{i=6}^{9} \beta_i (\text{ YearDum }_t) + \varepsilon_i$$

Where Z_{it} are the vector of control variables that include ROA, AD, CAPEX, Leverage, LOGSALES **Q** = Dependent Variable **CSR** = Independent Variables

Model 8b :

$$Q_{it} = \propto_i + \beta_i (\text{ CSRLEVEL }_{it}) + \Sigma_{i=2}^{5} \beta_i (Z_{it}) + \Sigma_{i=6}^{9} \beta_i (\text{ YearDum }_t) + \varepsilon_i$$

Where Z_{it} are the vector of control variables that include ROA, AD, CAPEX, Leverage, LOGSALES

$$\mathbf{Q} = \text{ Dependent Variable}$$

CSRLEVEL = Independent Variables

RESULTS

Logistic Regression Models

The regression results of logistic regression, along with interpretations, are presented as follows:

Model 1a :

$$\text{CSR}_{it} = \propto_i + \beta_i (\text{ CPS }_{it}) + \Sigma_{i=2}^{8} \beta_i (Z_{it}) + \Sigma_{i=9}^{12} \beta_i (\text{ YearDum }_t) + \varepsilon_i$$

Table 1: Logistic regression

CSR	Coef.	St.Err	t-value	p-value	Sig.
CPS	0.463	0.679	0.68	0.495	
SHROWN	-0.208	0.614	-0.34	0.735	
CEOCOMP	0.394	0.096	4.12	0	***
ROA	1.799	0.847	2.12	0.034	**
AD	5.265	4.381	1.2	0.229	
CAPEX	0.182	0.299	0.61	0.543	
Leverage	0.336	0.223	1.5	0.132	
LOGSALES	0.465	0.094	4.95	0	***
year1	-0.671	0.301	-2.23	0.026	**
year2	-0.393	0.301	-1.31	0.191	
year3	-0.229	0.306	-0.75	0.453	
year4	0.314	0.315	1	0.32	
o.year5	0	.	.	.	
_cons	-10.431	1.398	-7.46	0	***
Mean dependent var		0.659	SD dependent var		0.474
Pseudo r-squared		0.198	Number of obs		666
Chi-square		169.618	Prob > chi2		0
Akaike crit. (AIC)		710.982	Bayesian crit. (BIC)		769.499

The p-value of f-statistics tells us that the model as a whole is significant. The Psuedo R square shows that 19 percent variations in CSR are brought about by the independent variables of the model. In assessing the relationship

between CSR and CPS, we can see that the relationship between the two variables is statistically insignificant. This suggests that CEO power when measured by CEO Pay Slice does not impact the firm's decision to engage in CSR.

Model 1a, tests "Hypothesis 1" which represents the relationship between CSR and CEO power measured through CEO Pay Slice (CPS). The results suggest the relationship to be statistically insignificant. This further accepts our Hypothesis 1b which states that there is no association between CSR and CEO power. The overinvestment hypothesis does not stand true for the described relationship in Model 1a. We can say that for Pakistani firms, CEO power does not have any influence on a firm's decision to engage in CSR and thus CSR is not an agency cost.

Model 2a :

Logistic regression :

$$\text{CSR}_{it} = \propto_i + \beta_i\left(\text{CPS}_{it}\right) + \Sigma_{i=2}^{9}\beta_i\left(Z_{it}\right) + \Sigma_{i=10}^{13}\beta_i\left(\text{YearDum}_t\right) + \varepsilon_i$$

Table 2: Logistic regression

CSR	Coef.	St.Err	t-value	p-value	Sig.
CPS	-0.485	0.737	-0.66	0.51	
SHROWN	0.581	0.716	0.81	0.417	
CEOCOMP	0.052	0.107	0.48	0.628	
ROA	1.196	0.906	1.32	0.187	
AD	4.394	4.593	0.96	0.339	
CAPEX	0.298	0.489	0.61	0.542	
Leverage	0.179	0.236	0.76	0.448	
LOGSALES	0.363	0.108	3.38	0.001	***
CSRLEVEL	0.226	0.026	8.6	0	***
year1	-0.531	0.335	-1.59	0.112	
year2	-0.297	0.335	-0.89	0.375	
year3	-0.153	0.335	-0.46	0.648	
year4	0.327	0.34	0.96	0.336	
o.year5	0	.	.	.	
_cons	-7.462	1.547	-4.82	0	***
Mean dependent var		0.659	SD dependent var		0.474
Pseudo r-squared		0.334	Number of obs		666
Chi-square		285.545	Prob > chi2		0
Akaike crit. (AIC)		597.055	Bayesian crit. (BIC)		660.073

*** p<0.01, ** p<0.05, * p<0.1

This model is an extension of Model 1a, in which CSRLEVEL is added among the control variables. The p-value of f-statistics tells us that the model as a whole is significant. The Psuedo R square shows improvement and suggests that 33 percent variations in CSR are brought about by the independent variables of the model.

We assess the relationship between CSR and CEO power as measured by CPS. The relationship between the two is insignificant, as evident by the p-value. So, we can say that CEO power has no influence on a firm's decision to engage in CSR by adding CSRLEVEL as a control variable.

As far as the control variables are concerned, we see that CSRLEVEL and LOGSALES have a statistically significant influence on the relationship between CSR and CPS.

Model 2a, which is an extension of Model 1a, tests "Hypothesis 1' which represents the relationship between CSR and CEO power measured through CEO pay slice (CPS) with CSRLEVEL as one of the control variables. The results suggest the relationship to be statistically insignificant. This further accepts our Hypothesis 1b, which states that there is no association between CSR and CEO power. The overinvestment hypothesis does not stand true for the described relationship in Model 2a. We can say that for Pakistani firms, CEO power does not have any influence on a firm's decision to engage in CSR, and thus CSR is not an agency cost.

Model 3a :

Logistic regression :

$$\text{CSR}_{it} = \propto_i + \beta_i\left(\text{DUALITY}_{it}\right) + \Sigma_{i=2}^{8}\beta_i\left(Z_{it}\right) + \sum_{i=9}^{12}\beta_i\left(\text{YearDummies}_t\right) + \varepsilon_i$$

Table 3: Logistic regression

CSR	Coef.	St.Err	t-value	p-value	Sig.
DUALITY	-0.373	0.265	-1.41	0.159	
SHROWN	0.141	0.668	0.21	0.833	
CEOCOMP	0.38	0.087	4.34	0	***
ROA	1.739	0.841	2.07	0.039	**
AD	5.413	4.391	1.23	0.218	
CAPEX	0.17	0.301	0.56	0.572	
Leverage	0.326	0.225	1.45	0.147	
LOGSALES	0.469	0.094	5.01	0	***
year1	-0.601	0.306	-1.96	0.05	**
year2	-0.326	0.306	-1.06	0.287	
year3	-0.18	0.308	-0.58	0.559	
year4	0.319	0.315	1.01	0.312	
o.year5	0	.	.	.	
_cons	-10.257	1.251	-8.2	0	***
Mean dependent var		0.659	SD dependent var		0.474
Pseudo r-squared		0.2	Number of obs		666
Chi-square		171.125	Prob > chi2		0
Akaike crit. (AIC)		709.475	Bayesian crit. (BIC)		767.992

*** p<0.01, ** p<0.05, * p<0.1

The model as a whole is statistically significant, as indicated by the p-value of f-statistics. The Pseudo R square tells us that 20 percent of variations in CSR are caused by variations in the independent variables.

In this model, we assess the relationship between CSR and DUALITY (another measure of CEO power). The model as a whole is significant. The relationship between CSR and duality is negative. However, the p-value suggests the relationship to be insignificant. Among the control variables, ROA and LOGSALES play a statistically significant role in effecting CSR.

Model 3a tests "Hypothesis 1," which represents the relationship between CSR and CEO power measured through "DUALITY". The results suggest the relationship is statistically insignificant. This further accepts our Hypothesis 1b, which states that there is no association between CSR activities and CEO power. The overinvestment hypothesis does not stand true for the described relationship in Model 3a. We can say that for Pakistani firms, CEO power does not have any influence on a firm's decision to engage in CSR, and thus CSR is not an agency cost.

Model 4a :

Logistic regression :

$$\text{CSR}_{it} = \propto_i + \beta_i (\text{ DUALITY }_{it}) + \Sigma_{i=2}^{9} \beta_i (Z_{it}) + \sum_{i=10}^{13} \beta_i (\text{ YearDum }_t) + \varepsilon_i$$

Table 4: Logistic regression

CSR	Coef.	St.Err	t-value	p-value	Sig.
DUALITY	-0.156	0.297	-0.53	0.599	
SHROWN	0.744	0.788	0.94	0.345	
CEOCOMP	0.086	0.099	0.87	0.385	
ROA	1.043	0.894	1.17	0.243	
AD	4.504	4.569	0.99	0.324	
CAPEX	0.308	0.477	0.65	0.519	
Leverage	0.17	0.237	0.72	0.474	
LOGSALES	0.375	0.108	3.47	0.001	***
CSRLEVEL	0.224	0.026	8.56	0	***
year1	-0.492	0.339	-1.45	0.146	
year2	-0.255	0.339	-0.75	0.453	
year3	-0.13	0.337	-0.39	0.7	
year4	0.339	0.34	1	0.319	
o.year5	0	.	.	.	
_cons	-8.065	1.418	-5.69	0	***
Mean dependent var		0.659	SD dependent var		0.474
Pseudo r-squared		0.334	Number of obs		666
Chi-square		285.386	Prob > chi2		0
Akaike crit. (AIC)		597.214	Bayesian crit. (BIC)		660.232

*** p<0.01, ** p<0.05, * p<0.1

The overall model is statistically significant, and the Pseudo R square suggests 33 percent variations in CSR due to the independent variables.

In this model, we assess the relationship between CSR and DUALITY (another measure of CEO power). The model as a whole is significant. The relationship between CSR and Duality is negative. However, the p-value suggests the relationship to be insignificant.

Among the control variables, ROA and LOGSALES play a statistically significant role in effecting CSR. Model 4a, which is an extension of Model 3a, tests "Hypothesis 1' which represents the relationship between CSR and CEO power measured through DUALITY with CSRLEVEL as one of the control variables. The results suggest the relationship to be statistically insignificant. This further accepts our Hypothesis 1b, which states that there is no association between CSR and CEO power. The overinvestment hypothesis does not stand true for the described relationship in Model 4a. We can say that for Pakistani firms, CEO power does not have any influence on a firm's decision to engage in CSR, and thus CSR is not an agency cost.

Model 5a :

Logistic regression :

$$\text{CSR}_{it} = \propto_i + \beta_i (Q_{it}) + \Sigma_{i=2}^{5} \beta_i (Z_{it}) + \Sigma_{i=6}^{9} \beta_i (\text{ YearDum }_t) + \varepsilon_i$$

Table 5: Logistic regression

CSR	Coef.	St.Err	t-value	p-value	Sig.
Q	1.035	0.019	1.88	0.061	*
ROA	4.603	2.99	2.35	0.019	**
AD	1987.056	8374.596	1.8	0.072	*
CAPEX	1.109	0.222	0.52	0.606	
Leverage	0.974	0.064	-0.4	0.687	
LOGSALES	1.841	0.129	8.72	0	***
year1	0.396	0.109	-3.36	0.001	***
year2	0.535	0.148	-2.27	0.023	**
year3	0.707	0.199	-1.23	0.218	
year4	1.153	0.337	0.49	0.626	
o.year5	1	.	.	.	
_cons	0	0	-7.82	0	***
Mean dependent var		0.635	SD dependent var		0.482
Pseudo r-squared		0.167	Number of obs		736
Chi-square		161.183	Prob > chi2		0
Akaike crit. (AIC)		827.201	Bayesian crit. (BIC)		877.815

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

The p-value of f-statistics tells us that the model as a whole is significant. The Psuedo R square shows that 16 percent variations in CSR are brought about by the independent variables of the model.

We can see that the relationship between CSR and Q (firm value) is statistically insignificant. As far as the control variables are concerned, we see that LOGSALES has a statistically significant influence on CSR.

Model 5a represents the relationship between firm value measured through Tobin's Q and CSR. The results suggest the relationship to be statistically insignificant. Thus, we can say that for Pakistani firms, firm value does not have any influence on a firm's decision to engage in CSR.

Model 6a :

Logistic regression :

Table 6: Logistic regression

CSR	Coef.	St.Err	t-value	p-value	Sig.
Q	0.018	0.019	0.92	0.357	
ROA	1.365	0.783	1.74	0.081	*
AD	2.634	4.333	0.61	0.543	
CAPEX	0.274	0.339	0.81	0.419	
Leverage	-0.037	0.103	-0.35	0.723	
LOGSALES	0.301	0.076	3.97	0	***
CSRLEVEL	0.26	0.026	10.12	0	***
year1	-0.609	0.318	-1.91	0.056	*
year2	-0.395	0.318	-1.24	0.214	
year3	-0.193	0.318	-0.61	0.544	
year4	0.218	0.325	0.67	0.502	
o.year5	0	.	.	.	
_cons	-6.238	1.137	-5.49	0	***
Mean dependent var		0.635	SD dependent var		0.482
Pseudo r-squared		0.351	Number of obs		736
Chi-square		338.98	Prob > chi2		0
Akaike crit. (AIC)		651.404	Bayesian crit. (BIC)		706.619

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

In this model, we assess the relationship between CSR and firm value. The overall model is significant. The relationship between CSR and firm value is statistically insignificant. The pseudo r-squared suggests that 35 percent of variations in CSR are brought by variations in firm value.

Model 6a is an extension of Model 5a, which represents the relationship between firm value and CSR with CSRLEVEL as one of the control variables. The results suggest the relationship to be statistically insignificant. Thus, we can say that for Pakistani firms, firm value does not have any influence on a firm's decision to engage in CSR.

Panel Data Models

The regression results of panel data along with interpretations are presented as follows:

Model 1b :

Panel regression:

Hausman Specification Test is used to determine which model between Fixed Effect and Random Effect Model is appropriate for this data.

Table 7: Hausman (1978) specification test

	Coef.
Chi-square test value	36.402
P-value	0

HO=Random Effect Model is appropriate

H1=Fixed Effect Model is appropriate

As we can see, the alternate hypothesis is accepted thus Fixed Effect Model is proven to be appropriate.

Fixed effect regression

Regression results

Table 8: Regression results

CSRLEVEL	Coef.	St.Err	t-value	p-value	Sig.
CPS	2.139	1.627	1.31	0.191	
SHROWN	2.57	2.296	1.12	0.265	
CEOCOMP	0.276	0.31	0.89	0.375	
ROA	0.277	1.159	0.24	0.811	
AD	34.075	5.383	6.33	0	***
CAPEX	-0.01	0.01	-1.02	0.31	
Leverage	-0.073	0.17	-0.43	0.668	
LOGSALES	0.701	0.444	1.58	0.116	
o.year1	0	.	.	.	
year2	0.927	0.19	4.88	0	***
year3	1.557	0.331	4.7	0	***
year4	2.355	0.416	5.67	0	***
year5	2.554	0.462	5.53	0	***
_cons	-3.428	7.334	-0.47	0.641	
Mean dependent var		12.541	SD dependent var		8.081
R-squared		0.214	Number of obs		666
F-test		19.503	Prob > F		0
Akaike crit. (AIC)		2958.828	Bayesian crit. (BIC)		3012.843

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

The model as a whole is statistically significant as evident by p-value of f-statistics. The R squared value of 0.21 shows that 21 percent of variations in CSRLEVEL are influenced by variations in the independent variables.

The relationship that we check here is between CSRLEVEL and CPS (a measure of CEO power). The relationship however is statistically insignificant as evident by p-value for CPS which is 0.191.

The control variable that seems to have statistically significant influence on CSRLEVEL is AD whereas the rest of the control variables have no significant effect on CSRLEVEL.

Model 1b, tests "Hypothesis 1" which represents the relationship between CSRLEVEL and CEO power measured through CEO pay slice (CPS). The results suggest the relationship to be statistically insignificant. This further accepts our Hypothesis 1b which states that there is no association between the level of CSR activities and CEO power. The overinvestment hypothesis does not stand true for the described relationship in Model 1b. We can say that for Pakistani firms, CEO power does not have any influence on a firm's level of CSR activities and thus CSR is not an agency cost.

Model 2b :

Panel regression:

Hausman Specification Test is used to determine which model between Fixed Effect and Random Effect Model is appropriate for this data.

Table 9: Hausman (1978) specification test

	Coef.
Chi-square test value	46.955
P-value	0

HO=Random effect model is appropriate

H1=Fixed Effect Model is appropriate

As we can see, the alternate hypothesis is accepted thus Fixed Effect Model is proven to be appropriate.

Fixed effect regression:

Table 10: Fixed Effect Regression

CSRLEVEL	Coef.	St.Err	t-value	p-value	Sig.
CPS	1.496	1.91	0.78	0.435	
SHROWN	2.834	2.407	1.18	0.241	
CEOCOMP	0.279	0.286	0.98	0.331	
ROA	0.298	1.12	0.27	0.791	
AD	33.83	4.807	7.04	0	***
CAPEX	-0.008	0.009	-0.83	0.409	
Leverage	-0.148	0.176	-0.84	0.404	
LOGSALES	0.602	0.409	1.47	0.143	
CSR	2.963	0.918	3.23	0.002	***
o.year1	0	.	.	.	
year2	0.751	0.19	3.95	0	***
year3	1.2	0.351	3.42	0.001	***
year4	1.742	0.427	4.08	0	***
year5	2.058	0.459	4.48	0	***
_cons	-3.466	7.03	-0.49	0.623	
Mean dependent var		12.541	SD dependent var		8.081
R-squared		0.267	Number of obs		666
F-test		19.994	Prob > F		0
Akaike crit. (AIC)		2913.855	Bayesian crit. (BIC)		2972.372

*** p<0.01, ** p<0.05, * p<0.1

The model as a whole is statistically significant as evident by p-value of f-statistics. The R squared value of 0.26 shows that 26 percent variations in CSRLEVEL are influenced by variations in the independent variables.

The relationship that we check here is between CSRLEVEL and CPS (a measure of CEO power). The coefficient value is positive indicating a positive relationship between CSRLEVEL and CPS. The relationship however is statistically insignificant as evident by p-value for CPS which is 0.191.

The control variable that seems to have statistically significant influence on CSRLEVEL is AD whereas the rest of the control variables have no significant effect on CSRLEVEL.

Model 2b, which is an extension of Model 1b tests "Hypothesis 1' which represents the relationship between CSRLEVEL and CEO power measured through CEO Pay Slice (CPS) with CSR as one of the control variables. The results suggest the relationship to be statistically insignificant. This further accepts our Hypothesis 1b which states that there is no association between CSRLEVEL and CEO power. The overinvestment hypothesis does not stand true for the described relationship in Model 2b. We can say that for Pakistani firms, CEO power does not have any influence on a firm's level of CSR activities and thus CSR is not an agency cost.

Model 3b :

Panel regression:

Hausman specification test:

Table 11: Hausman (1978) specification test

	Coef.
Chi-square test value	52.088
P-value	0

HO:Random Effect Model is appropriate

H1:Fixed Effect Model is appropriate

H1 is accepted thus we use Fixed Effect Model

Fixed effect regression:

Table 12: Fixed Effect Regression

CSRLEVEL	Coef.	St.Err	t-value	p-value	Sig.
DUALITY	-0.531	0.574	-0.93	0.356	
SHROWN	2.887	2.418	1.19	0.234	
CEOCOMP	0.107	0.252	0.43	0.671	
ROA	0.358	1.169	0.31	0.76	
AD	33.891	5.37	6.31	0	***
CAPEX	-0.007	0.01	-0.76	0.447	
Leverage	-0.073	0.164	-0.45	0.656	
LOGSALES	0.746	0.437	1.71	0.09	*
o.year1	0	.	.	.	
year2	0.937	0.188	4.99	0	***
year3	1.561	0.341	4.58	0	***
year4	2.317	0.437	5.3	0	***
year5	2.528	0.484	5.22	0	***
_cons	-1.868	6.881	-0.27	0.786	
Mean dependent var		12.541	SD dependent var		8.081
R-squared		0.214	Number of obs		666
F-test		17.083	Prob > F		0
Akaike crit. (AIC)		2959.176	Bayesian crit. (BIC)		3013.191

*** p<0.01, ** p<0.05, * p<0.1

The overall model is statistically significant. The R-square suggests that 16 percent of the variations in CSRLEVEL are due to variations in the independent variables.

We check the relationship between CSRLEVEL and DUALITY. The relationship is negative, i.e., as the CEO's chances of being the chairman of the board increase, the CSRLEVEL of the firm decreases. The relationship is

statistically insignificant.

AD is the control variable that has a statistically significant impact on CSRLEVEL.

Model 3b tests "Hypothesis 1," which represents the relationship between CSRLEVEL and CEO power measured through DUALITY. The results suggest the relationship to be statistically insignificant. This further accepts our Hypothesis 1b, which states that there is no association between the level of CSR activities and CEO power. The overinvestment hypothesis does not stand true for the described relationship in Model 3b. We can say that for Pakistani firms, CEO power does not have any influence on a firm's level of CSR activities, and thus, CSR is not an agency cost.

Model 4b :

Panel regression:

Hausmen specification test:

Table 13: Hausman (1978) specification test

	Coef.
Chi-square test value	45.782
P-value	0

HO=Random Effect Model is appropriate

H1=Fixed Effect Model is appropriate

H1 is accepted thus we use Fixed Effect Model.

Fixed effect regression:

Table 14: Fixed effect regression

CSRLEVEL	Coef.	St.Err	t-value	p-value	Sig.
DUALITY	-0.749	0.555	-1.35	0.18	
SHROWN	3.356	2.505	1.34	0.183	
CEOCOMP	0.168	0.229	0.73	0.464	
ROA	0.351	1.122	0.31	0.755	
AD	33.616	4.601	7.31	0	***
CAPEX	-0.006	0.009	-0.6	0.548	
Leverage	-0.155	0.164	-0.94	0.347	
LOGSALES	0.64	0.395	1.62	0.107	*
CSR	3.046	0.918	3.32	0.001	***
o.year1	0	.	.	.	
year2	0.749	0.188	3.98	0	***
year3	1.167	0.36	3.24	0.001	***
year4	1.633	0.445	3.67	0	***
year5	1.954	0.48	4.07	0	***
_cons	-2.531	6.461	-0.39	0.696	
Mean dependent var		12.541	SD dependent var		8.081
R-squared		0.27	Number of obs		666
F-test		21.487	Prob > F		0
Akaike crit. (AIC)		2911.561	Bayesian crit. (BIC)		2970.078

*** p<0.01, ** p<0.05, * p<0.1

The overall model is statistically significant. The R square suggests that 27 percent of variations in CSRLEVEL are due to variations in the independent variables.

We check the relationship between CSRLEVEL and DUALITY, which relationship is statistically insignificant.

AD is the control variable that has a statistically significant impact on CSRLEVEL. Model 4b, which is an extension of Model 3b, tests "Hypothesis 1' which represents the relationship between CSRLEVEL and CEO Power, measured DUALITY with CSR as one of the control variables. The results suggest the relationship to be

statistically insignificant. This further accepts our Hypothesis 1b, which states that there is no association between CSRLEVEL and CEO power. The overinvestment hypothesis does not stand true for the described relationship in Model 4b. We can say that for Pakistani firms, CEO power does not have any influence on a firm's level of CSR activities, and thus, CSR is not an agency cost.

Model 5b :

Panel regression:

Hausman specification test:

Hausman Test is used to determine which model between Fixed Effect and Random Effect Model is appropriate for this data.

Table 15: Hausman (1978) specification test

	Coef.
Chi-square test value	45.782
P-value	0

HO:Random Effect model is appropriate

H1:Fixed Effect Model is appropriate

As we can see, the alternate hypothesis is accepted thus Fixed Effect Model is proven to be appropriate.

Fixed effect regression:

Table 16: Fixed Effect Regression

CSRLEVEL	Coef.	St.Err	t-value	p-value	Sig.
Q	-0.021	0.01	-2.13	0.035	**
ROA	-0.011	0.04	-0.29	0.775	
AD	31.475	5.004	6.29	0	***
CAPEX	-0.013	0.003	-4.86	0	***
Leverage	-0.174	0.024	-7.29	0	***
LOGSALES	0.66	0.319	2.07	0.04	**
o.year1	0	.	.	.	
year2	0.999	0.175	5.72	0	***
year3	1.725	0.297	5.82	0	***
year4	2.523	0.337	7.48	0	***
year5	2.783	0.382	7.29	0	***
_cons	0.378	4.858	0.08	0.938	
Mean dependent var		12.058	SD dependent var		7.94
R-squared		0.223	Number of obs		736
F-test		31.394	Prob > F		0
Akaike crit. (AIC)		3231.391	Bayesian crit. (BIC)		3277.403

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

The p-value of f-statistics shows that the overall model is statistically significant at all confidence interval levels. The R-squared suggests that 22 percent of the variations in CSRLEVEL are brought about by variations in the independent variables.

The relationship we check is between CSRLEVEL and Q (firm value). The relationship between the two is negative, i.e., a 1-unit increase in Q decreases the CSRLEVEL by 0.02 units. The relationship is statistically significant at a 5 percent confidence interval. AD, CAPEX, Leverage, and LOGSALES are statistically significant control variables. Model 5b represents the relationship between firm value and CSRLEVEL. The results suggest the relationship to be statistically significant, with firm value as negatively related to CSRLEVEL. Thus, we can say that for Pakistani firms, firm value has a negative influence on a firm's decision to engage in CSR.

Model 6b :

Panel regression:

Hausman specification test:

Hausman Test is used to determine which model between Fixed Effect and Random Effect Model is appropriate for this data.

Table 17: Hausman (1978) specification test

	Coef.
Chi-square test value	3.776
P-value	0.957

Ho=Random Effect model is appropriate

H1=Fixed Effect Model is appropriate

As we can see, the null hypothesis is accepted thus Random Effect Model is proven to be appropriate.

Random effect GLS regression:

Table 18: Random Effect GLS Regression

CSRLEVEL	Coef.	St.Err	t-value	p-value	Sig.
Q	-0.008	0.01	-0.83	0.404	
ROA	0.02	0.034	0.57	0.567	
AD	29.34	4.585	6.4	0	***
CAPEX	-0.01	0.003	-3.61	0	***
Leverage	-0.112	0.024	-4.69	0	***
LOGSALES	0.988	0.305	3.24	0.001	***
CSR	3.713	0.701	5.3	0	***
year1	-2.088	0.383	-5.45	0	***
year2	-1.34	0.345	-3.88	0	***
year3	-0.9	0.254	-3.54	0	***
year4	-0.375	0.169	-2.22	0.026	**
o.year5	0	.	.	.	
_cons	-4.405	4.566	-0.96	0.335	
Mean dependent var		12.058	SD dependent var		7.94
Overall r-squared		0.356	Number of obs		736
Chi-square		372.017	Prob > chi2		0
R-squared within		0.281	R-squared between		0.386

*** p<0.01, ** p<0.05, * p<0.1

The p-value of f-statistics shows that the overall model is statistically significant at all confidence interval levels. The R-squared suggests that 36 percent of the variations in CSRLEVEL are brought about by variations in the independent variables.

The relationship we check is between CSRLEVEL and Q (firm value). The relationship between the two is statistically insignificant at a 5 percent confidence interval. AD, CAPEX, Leverage, and LOGSALES are statistically significant control variables. Model 6b is an extension of Model 5b, which represents the relationship between firm value and CSRLEVEL with CSR as one of the control variables. The results suggest the relationship to be statistically insignificant. Thus, we can say that for Pakistani firms, firm value does not have any influence on a firm's level of CSR activities.

Model 7b :

Panel regression:

Hausman specification test:

Hausman Test is used to determine which model between Fixed Effect and Random Effect Model is appropriate for this data.

Table 19: Hausman (1978) specification test

	Coef.
Chi-square test value	8.365
P-value	0.498

HO=Random Effect model is appropriate

H1= Fixed Effect Model is appropriate

As we can see, the Null hypothesis is accepted thus Random Effect Model is proven to be appropriate.

Random effect GLS regression:

Table 20: Random effect GLS regression

Q	Coef.	St.Err	t-value	p-value	Sig.
CSR	-0.346	0.218	-1.59	0.112	
ROA	0.286	0.479	0.6	0.55	
AD	11.274	10.955	1.03	0.303	
CAPEX	0.006	0.007	0.91	0.361	
Leverage	0.064	0.066	0.97	0.332	
LOGSALES	-0.527	0.595	-0.89	0.376	
year1	-0.874	0.268	-3.26	0.001	***
year2	-0.312	0.17	-1.84	0.066	*
year3	-0.081	0.19	-0.43	0.668	
year4	0.586	0.556	1.05	0.292	
o.year5	0	.	.	.	
_cons	10.055	9.401	1.07	0.285	
Mean dependent var		1.824	SD dependent var		5.951
Overall r-squared		0.056	Number of obs		736
Chi-square		59.052	Prob > chi2		0
R-squared within		0.02	R-squared between		0.089

*** p<0.01, ** p<0.05, * p<0.1

The p-value of F-statistics shows that the overall model is statistically significant at all confidence interval levels. The R-squared suggests that 05 percent of the variations in Q are brought about by variations in the independent variables.

We check the relationship between Q (firm value) and CSR. The table suggests that there is a negative relationship between Q and CSR. We can thus say that when a firm tends to engage in CSR, its value decreases. However, the relationship is insignificant at a 5 percent confidence interval.

Model 7b tests "Hypothesis 2," which represents the relationship between CSR and firm value measured through Tobin's Q. The results suggest the relationship to be statistically insignificant. This further accepts our Hypothesis 2b, which states that there is no association between CSR and firm value. The overinvestment hypothesis does not stand true for the described relationship in Model 7b. We can say that for Pakistani firms, CSR does not have any influence on the firm value; thus, CSR is not an agency cost.

Model 8b :

Panel regression:

Hausman specification test:

Hausman Test is used to determine which model between Fixed Effect and Random Effect Model is appropriate for this data.

Table 21: Hausman (1978) specification test

	Coef.
Chi-square test value	19.101
P-value	0.039

HO=Random Effect model is appropriate **H1**=Fixed Effect Model is appropriate

As we can see, the alternate hypothesis is accepted thus Fixed Effect Model is proven to be appropriate.

Fixed effect regression:

Table 22: Fixed effect regression

Q	Coef.	St.Err	t-value	p-value	Sig.
CSRLEVEL	-0.045	0.028	-1.61	0.109	*
ROA	0.263	0.466	0.56	0.574	
AD	4.109	8.171	0.5	0.616	
CAPEX	0.003	0.007	0.47	0.635	
Leverage	0.074	0.069	1.07	0.286	
LOGSALES	-0.03	0.159	-0.19	0.852	
year1	-0.962	0.275	-3.5	0.001	***
year2	-0.374	0.158	-2.37	0.019	**
year3	-0.176	0.152	-1.16	0.249	
year4	0.525	0.552	0.95	0.343	
o.year5	0	.	.	.	
_cons	2.959	2.395	1.24	0.219	
Mean dependent var		1.824	SD dependent var		5.951
R-squared		0.025	Number of obs		736
F-test		5.236	Prob > F		0
Akaike crit. (AIC)		3780.658	Bayesian crit. (BIC)		3826.67

*** p<0.01, ** p<0.05, * p<0.1

The p-value of f-statistics shows that the overall model is statistically significant at all confidence interval levels.

The R squared suggests that 02 percent variations in Q are brought about by variations in the independent variables.

We check the relationship between Q (firm value) and CSRLEVEL. The table suggests that there is a negative relationship between Q and CSRLEVEL. We can thus say that when a firm tends to engage in CSR, its value decreases. However, the relationship is insignificant at a 5 percent confidence interval.

DISCUSSION

Friedman's remarks regarding the firm's obligations only to its shareholders and CSR being an agency cost was the main question under study for non-financial firms of Pakistan.

Through a detailed overview of all the models in this study, we can safely say that the overinvestment hypothesis does not apply to Pakistan's non-financial firms. The evidence suggests that CSR and CEO power are independent of each other. Moreover, CSR does not influence the firm value.

For Pakistan's non-financial sector, this study does not find any evidence for the presence of Agency theory by rejecting the overinvestment hypothesis.

If the results are compared with those of Li et al. (2016), we can say that different time zones, industries, and countries show that different dynamics are involved in determining a firm's decision to take on CSR, contrary to those who suggest that the CEO power influences a firm's inclination towards engagement in CSR. They have rejected the overinvestment hypothesis by finding that CEO power and CSR are negatively related; however, this study also rejects the overinvestment hypothesis but through evidence of the nonexistence of any relationship between the two variables. Moreover, the results of this study are in contradiction to Li et al. (2016) in that they have established that CSR and firm value are positively related, but for this study, there is no association between the two variables. However, both studies reject the overinvestment hypothesis of agency theory in terms of CSR's influence on a firm's value.

In the context of the presence of Agency theory in explaining the association between CEO power and CSR, the overinvestment hypothesis based on the said agency theory would suggest the two to be positively related, which is not true for the sample under study. This means that CEOs do not exploit their Power in engaging in CSR for their

image-building, which contradicts the findings by Bernea and Rubin (2010), who argued that reputation-building is the sole purpose of CEOs in exerting their Power to engage in CSR, which advocates for CSR as being an agency cost. Moreover, Jensen and Murphy (1990) have argued that CEOs work in the best interests of the shareholders only when they are offered incentives for doing so. Hong et al. (2016) suggested that compensation contracts of CEOs carry incentives for CSR, which tells us how shareholders view CSR, i.e., as an investment in a firm's goodwill from which it can draw future economic benefits (Hong et al., 2016). Speaking the language of an agency theorist, what greater incentive can there be than to land compensation contracts or receive incentives based on a CEO's reputation and/or accomplishments in the field of social responsibility? However, we do not encounter such agency problems in this study so we can say that despite the influence of CEO power on a firm's key decisions including engaging in CSR and the effect of CSR investments on firm value; Pakistan, a developing country yet to inculcate the concept of social responsibility into its culture as a symbol and representative of good image. The results of this study make us wonder that Pakistan is yet to embark on a paradigm change with regard to the importance of CSR as a contributor towards image building of both the decision maker (CEO in this specific study) and the firm.

CONCLUSION

Instead of mixed results provided by previous studies, firms' motivation to be involved in CSR remains an unresolved issue to date. Some researchers argue that the reason for firms to embark upon CSR activities is to think ahead into the future, looking for the sustainability of the then-firm operations; others are firm believers of agency theory in the context of the influence of managers on CSR, suggest self-reputation building by managers as the sole motivation to engage in CSR.

This study was based on checking the presence of classical agency theory in explaining the association of CEO power with CSR as well as the association of CSR with firm value. For this purpose, the overinvestment hypothesis based on agency theory was tested.

This study commenced with Friedman's comments that characterized CSR to be the selfish attitude of managers by taking decisions related to CSR which benefit only them and harm the firm while costing shareholders their money (Hong et al., 2016) saying that the only responsibility s firm has is to make a profit, nothing else. This study provides evidence that CSR is not an agency cost and is not being exploited by CEOs for personal gains. Thus we can say that socially responsible practices are not necessarily exploited or put a firm at some sort of economic disadvantage, thus based on the evidence provided by this study, we find ourselves in agreement with the comments by Kenneth Mason in 1979 opposing Friedman's philosophy calling it "a dreary and demeaning view of the role of business and business leaders in our society. . ..Making a profit is no more the purpose of a corporation than getting enough to eat is the purpose of life. Getting enough to eat is a requirement of life; life's purpose, one would hope, is somewhat broader and more challenging. Likewise, with business and profit."

Implications

The practical implications stemming from this study are multifaceted. Firstly, it highlights that the common assumption linking CEO power to corporate social responsibility (CSR) may not be as straightforward as previously believed. Organizations, particularly in Pakistan, should approach CSR from a broader perspective, emphasizing collective responsibility rather than concentrating decision-making power within the CEO's domain.

Moreover, the study sheds light on the fact that the impact of CSR on firm value may not be as immediate or direct as anticipated. Firms aspiring to enhance their financial performance through CSR initiatives should adopt a more measured, long-term approach. This implies that the quest for financial benefits should be accompanied by a genuine commitment to social responsibility rather than merely viewing CSR as a tool for short-term profit generation.

The rejection of the overinvestment hypothesis from agency theory raises questions about the applicability of traditional corporate governance paradigms. Consequently, organizations must reassess their corporate governance structures to foster a balanced distribution of Power and responsibilities within the firm.

In summary, this study urges organizations to adopt a more holistic, long-term approach to CSR, emphasizing the need for genuine commitment to social responsibility. It also encourages a reevaluation of existing corporate governance practices, with a view toward a more balanced and diversified power structure. By doing so, firms can

better navigate the intricate relationships between CEO power, CSR, and firm value.

Possible Future Research

Since CSR is a multidimensional phenomenon with various implications for all stakeholders, I say we keep exploring it until we have reached a standard consensus regarding its influence on a firm's value and the underlying factors driving a key manager to take on CSR-rich ventures.

More specifically, as mentioned in my rationale for this study, the association of CEO power with CSR needs further exploration. The decision to engage in CSR may be due to a variety of other factors apart from Power dynamics, which we did not consider in this study.

The study examined the association of CEO power with CSR as well as the association of CSR and firm value; one can also check the association between CEO power and firm value, which could also give us insights into the influence a CEO has on firm value and see if the value fluctuates through his/her involvement in CSR or are there other CEO attributes that help a firm succeed.

REFERENCES

Aaker, D. A. (1994). Building a Brand: The Saturn Story. California Management Review , 36 (2), 114-133.

Abernethy, M. A., Kuang, Y. F.,& Qin, B. (2015). The Influence of CEO Power on Compensation Contract Design. The Accounting Review , 90 (4), 1265-1306.

Adams, R. B., Almeida, H., & Ferreira, D. (2005). Powerful CEOs and their Impact on Corporate Performance. The Review of Financial Studies , 18 (4), 1403–1432.

Alexander, G. J., & Buchholz, R. A. (1978). Corporate Social Responsibility and Stock Market Performance. Academy of Management Journal , 21 (3), 479-486.

Aras, G., Aybars, A., & Kutlu, O. (2010). Corporate Governance and Financial Performance with A Perspective on Institutional Ownership: Empirical Evidence from Turkey. International Journal of Productivity and Performance Management , 39 (3), 229-254.

Arlow, P., & Gannon, M. J. (1982). Social Responsiveness, Corporate Structure, and Economic Performance. Academy of Management Review , 7 (2), 235-241.

Aupperle, K. E., Carroll, A. B., & Hatfield, J. D. (1985). An Empirical Examination of the Relationship between Corporate Social Responsibility and Profitability. The Academy of Management Journal , 28 (2), 446-463.

Barnea, A., & Rubin, A. (2010). Corporate Social Responsibility as a Conflict Between Shareholders. Journal of Business Ethics , 97 (1), 71–86.

Bebchuk, L. A., Cremers, M. K., & Peyer, U. (2011). The CEO Pay Slice. Journal of Financial Economics , 102 (1), 199-221.

Boli, J., & Hartsuiker, D. (2001). World Culture and Transnational Corporations: Sketch of a Project. An International Conference on Effects of and Responses to Globalization. Istanbul.

Boulding, W., & Kirmani, A. (1993). A Consumer-Side Experimental Examination of Signaling Theory: Do Consumers Perceive Warranties as Signals of Quality? Journal of Consumer Research , 20 (1), 111-123.

Bowman, E. H., & Haire, M. (1975). A Strategic Posture toward Corporate Social Responsibility. California Management Review , 18 (2), 49-58.

Brown, T. J., & Dacin, P. A. (1997). The Company and the Product: Corporate Associations and Consumer Product Responses. Journal of Marketing , 61 (1), 68-84.

Cespa, G., & Cestone, G. (2007). Corporate Social Responsibility and Managerial Entrenchment. Journal of Economics and Management Strategy , 16 (3), 741-771.

Chapple, W., & Moon, J. (2005). Corporate Social Responsibility (CSR) in Asia: A Seven-country Study of CSR Web Site Reporting. Business & Society , 44 (3), 415-441.

Chatterji, A. K., Levine, D. I., & Toffel, M. W. (2009). How Well Do Social Ratings Actually Measure Corporate Social Responsibility? 18 (1), 125-169.

Cochran, P. L., & Wood, R. A. (1984). Corporate Social Responsibility and Financial Performance. Academy of Management Journal , 26 (1), 42-56.

Core, J. E., Holthausen, R. W., & Larcker, D. F. (1999). Corporate Governance, Chief Executive Officer Compensation, and Firm Performance. Journal of Financial Economics , 371-406.

Crisostomo, V. L., Freire, F. S., & Vasconcellos, F. C. (2011, June). Corporate Social Responsibility, Firm Value and Financial Performance in Brazil. Social Responsibility Journal , 295-309.

Donaldson, T., & Preston, L. E. (1995). The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications. Academy of Management Revie , 20 (1).

Fernandez, M. R. (2016). Social Responsibility and Financial Performance: The Role of Good Corporate Governance. Business Research Quarterly , 19 (2), 137-151.

Ferrell, A., Liang, H., & Renneboog, L. (2016). Socially Responsible Firms. Journal of Financial Economics , 122 (3), 585-606.

Finkelstein, S. (1992). Power in Top Management Teams: Dimensions, Measurement, and Validation. Academy of Management Journal , 35 (3), 505-38.

Freedman, M., & Jaggi, B. (1982). Pollution Disclosures, Pollution Performance and Economic Performance. Omega , 10 (2), 167-176.

Freeman, R. E. (1984, 2010). Strategic Management: A Stakeholder Approach. Cambridge University Press, New York.

Friedman, M. (1970, September 13). The Social Responsibility of Business is to increase its profits. The New York Times Magazine , 32-33.

Gildea, R. L. (1994). Consumer Survey Confirms Corporate Social Action Affects Buy. Public Relations Quarterly , 39 (4).

Goel, A. M., & Thakor, A. V. (2008). Overconfidence, CEO Selection, and Corporate Governance. Journal of Finance , 63 (6), 2737-2784.

Gompers, P., Ishii, J. L., & Metrick, A. (2003). Corporate Governance and Equity Prices. The Quarterly Journal of Economics , 118 (1), 107–156.

Graves, S. B., & Waddock, S. A. (1994). Institutional Owners and Corporate Social Performance. The Academy of Management Journal , 37 (4), 1034-1046.

Hall, B. J., & Liebman, J. B. (1998). Are CEOS Really Paid Like Bureaucrats? The Quarterly Journal of Economics , 113 (3), 653-691.

Hong, B., Li, Z. (., & Minor, D. (2016). Corporate Governance and Executive Compensation for Corporate Social Responsibility. Journal of Business Ethics , 136 (1), 199–213.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics , 3 (4), 305-360.

Jensen, M. C., & Murphy, K. J. (1990). Performance Pay and Top-Management Incentives. Journal of Political Economy , 98 (2), 225-264.

Jia, S., Dou, J., & Wang, Q. (2016). A Meta-Analytic Review of Corporate Social Responsibility and Corporate Financial Performance: The Moderating Effect of Contextual Factors. Business and Society , 55 (8), 1083-1121.

Jo, H., & Harjoto, M. A. (2011). Corporate Governance And Firm Value: The Impact Of Corporate Social Responsibility. Journal of Business Ethics , 103 (3), 351-383.

o, H., & Harjoto, M. A. (2012). The Causal Effect of Corporate Governance on Corporate Social Responsibility. Journal of Business Ethics , 106 (1), 53-72.

Jo, H., & Harjoto, M. (2014). Analyst Coverage, Corporate Social Responsibility, and Firm Risk. Business Ethics: A European Review , 33 (3), 272-292.

Kaplan, R. S., & Norton, D. P. (2001). Transforming the Balanced Scorecard from Performance Measurement to Strategic Management: Part I. Accounting Horizons , 15 (1), 87-104.

Kaplan, R. S., & Norton, D. P. (2001). Transforming the Balanced Scorecard from Performance Measurement to Strategic Management: Part II. Accounting Horizons , 15 (2), 147–160.

Kirmani, A. (1997). Advertising Repetition as a Signal of Quality: If It's Advertised So Much, Something Must Be Wrong. Journal of Advertising , 26 (3), 77-86.

Liburd, H. B., & Zamora, V. L. (2015). The Role of Corporate Social Responsibility (CSR) Assurance in Investors' Judgments When Managerial Pay is Explicitly Tied to CSR Performance. Auditing: A Journal of Practice & Theory , 34 (1), 75-96.

Lins, K. V., Servaes, H., & Tamayo, A. (2017). Social Capital, Trust, and Firm Performance: The Value of Corporate Social Responsibility during the Financial Crisis. The Journal of Finance , 72 (4), 1785-1824.

Lu, W., Chau, K., Wang, H., & Pan, W. (2014). A Decade's Debate on the Nexus between Corporate Social and Corporate Financial Performance: a Critical Review of Empirical Studies 2002–2011. Journal of Cleaner Production , 79, 195-206.

Maignan, I., & Ferrell, O. (2001). Corporate Citizenship as a Marketing Instrument Concepts, Evidence and Research Directions. European Journal of Marketing , 35 (3), 457-484.

Malmendier, U., & Tate, G. (2005). CEO Overconfidence and Corporate Investment. The Journal of Finance , 60 (6), 2661-2700.

Mcwilliams, A., & Siegel, D. S. (2001). Corporate Social Responsibility: A Theory of the Firm Perspective. The Academy of Management Review , 26 (1), 117-127.

Milbourn, T. T. (2003). CEO Reputation and Stock-Based Compensation. Journal of Financial Economics , 68 (2), 233-262.

Mischel, W. (1977). On the Future of Personality Measurement. American Psychologist , 34 (4), 246-254.

Mishra, S., & Suar, D. (2010). Does Corporate Social Responsibility Influence Firm Performance of Indian Companies? Journal of Business Ethics , 95

O'Reilly, C. A., Doerr, B., Caldwell, D. F., & Chatman, J. A. (2014). Narcissistic CEOs and Executive Compensation. The Leadership Quarterly , 25 (2), 218-231.

Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate Social and Financial Performance: A Meta-Analysis. Organization Studies , 24 (3).

Pfeffer, J. (1997). New Directions for Organization Theory: Problems and Prospects. New York: Oxford University Press .

Pfeffer, J. (1992). Understanding Power in Organizations. California Management Review; Berkeley , 34 (2) .

Prior, D., Surroca, J., & Tribo, J. A. (2008). Are Socially Responsible Managers Really Ethical? Exploring the Relationship Between Earnings Management and Corporate Social Responsibility.

Sah, R. K., & Stiglitz, J. E. (1991). The Quality of Managers in Centralized Versus Decentralized Organizations. The Quarterly Journal of Economics , 106 (1), 289-295.

Sen, S., & Bhattacharya, C. B. (2001). Does Doing Good Always Lead to Doing Better? Consumer Reactions to Corporate Social. Journal of Marketing Research , 38 (2), 225-243.

Sen, S., Bhattacharya, C., & Korschun, D. (2006). The Role of Corporate Social Responsibility in Strengthening Multiple Stakeholder Relationships: A Field Experiment. Journal of the Academy of Marketing Science , 34 (2), 158-166.

Servaes, H., & Tamayo, A. (2013). he Impact of Corporate Social Responsibility on Firm Value: The Role of Customer Awareness. 59 (5), 1045-1061.

Waddock, S. A., & Graves, S. (1997). The Corporate Social Performance-Financial Performance Link. Strategic Management Journal , 18 (4), 303-319.