

Corporate Social Responsibility and Financial Performance: Does CEO Compensation Really Matter?

Chih-Wei Peng¹ and Yu-Cheng Chen²

Abstract

With the increasing emphasis on environmental protection in the global economy, CEOs are under immense pressure from their stakeholders to improve corporate social responsibility (CSR). However, prior studies have contradictory conclusions about the relationship between CSR and financial performance (FP). We thus extend prior research by investigating whether CEO compensation moderates the CSR-FP link. This study uses US firm data from the *KLD* database for the period 2003-2011. The results of the empirical analysis indicate that CEO compensation with a long-run focus can positively moderate the link between the people aspect of CSR and long-run FP. This is thus consistent with signaling theory, which states that CEO compensation with a long-run focus increases the incentive to hire women and minorities, and enhances the good treatment of employees. As a result, firms engaging more in the people aspect of CSR activities tend to have greater overall long-run profitability.

JEL classification numbers: M14, M12, G30

Keywords: Corporate social responsibility, Long-run performance, CEO incentives, CEO compensation

1 Introduction

Today's business environment is one with intense public, investor, regulatory and media scrutiny. Firms are thus under increasing pressure to be more socially responsible, in part because of new forms of reporting that are related to social performance, with the many independent evaluations and rankings now available making this more transparent. These

¹Associate Professor, Department of Accounting, National Changhua University of Education, Taiwan. E-mail: nqd6281@cc.ncue.edu.tw

² Professor, Department of Finance, National Chung Hsing University, Taiwan. E-mail: yechen@nchu.edu.tw.

range from research databases, such as the Kinder, Lydenberg and Domini (hereafter: *KLD*) social performance ratings data, and its associated Domini Social Fund for investors, to Business Ethics magazine's "Best 100 Corporate Citizens" and the Social Investment Forum, an umbrella organization that provides resources, contacts, and information about socially responsible organizations and investing (Waddock, 2003). Poor social and environmental ratings can harm a firm's reputation and market value. For example, *KLD* Research & Analytics dropped Coca-Cola Co. from its Broad Market Social Index in July 2006 because of concerns about the company's labor and environmental practices in the developing world. As a result, TIAA-CREF, the largest US retirement fund, subsequently sold more than 50 million shares of Coca-Cola Co. stock. Critics of the company also seized on *KLD*'s actions as support for their longstanding complaints against the firm (Chatterji et al. 2009). Companies are thus now seen as having an ethical responsibility to maximize corporate social responsibility (hereafter: CSR).

At issue in the current study is whether CSR investment initiatives negatively or positively affect the firm's bottom line. The operative question in this context is thus as follows: Do firms face a trade-off between increasing their social responsibility and enhancing profitability, or might the two goals be noncompeting? The answer to this question, which relates directly to the issue of sustainable development, has significant implications for both the firm and society at large. Although there has been a considerable amount of empirical research that examines the link between CSR and financial performance (the CSR-FP link, hereafter), these works have contradictory conclusions (Al-Tuwaijri et al., 2004; Ruf et al., 2001). Proponents of stakeholder theory (Freeman, 1984) claim that there is a statistically positive relationship between CSR and FP, thus providing support for managers to carry out such actions (e.g., Simpson and Kohers, 2002; Chien and Peng, 2012; Servaes and Tamayo, 2013). Along this line, firms with better CSR performance also enjoy a reduction in the cost of equity capital (Dhaliwal et al., 2011), and thus such companies are more likely to be seen by financial analysts as having long-run sustainability (Dhaliwal et al., 2012). The opposing, so-called traditionalist view, which is generally credited to Friedman (1962, 1970), suggests that corporate interests should not stray from those of investors, and asserts a negative between link between CSR and FP (e.g., Gollop and Roberts, 1983; Smith and Sims, 1985), although others report that there is no relationship at all between them (e.g., Moore, 2001; Seifert et al., 2003; Soana, 2011).

Margolis and Walsh (2003) summarize over 109 studies regarding the CSR-FP link, and find that one half (54) point towards a positive CSR-FP relationship, 20 show mixed results and 28 report non-significant relationships. Only seven studies show a negative relationship. They suggest that these varied results may be due to various imperfections in the previous studies, such as the validity and reliability of CSR or FP measures, omission of relevant controls, or the lack of a causal theory. As a result, the real impact of CSR efforts on FP is still unclear, although changes in popular attitudes to social responsibility mean that it is increasingly important to clarify this issue, and to examine the impact of CEO incentives in this context.

In addressing the CSR-FP relationship, Rowley and Berman (2000) proposed that some "moderators" and "mediators" between CSR and FP should be considered in the model. We thus investigate how CEO compensation moderates the link between CSR and long-run financial performance. Friedman (1970) first asserts that engaging in CSR is symptomatic of an agency problem or conflict between the interests of managers and shareholders. More recently, Moser and Martin (2012) also report that many accounting studies view the practice of CSR activities as an agency problem. If CEOs engage in CSR practices based

on opportunistic incentives, then they are likely to mislead stakeholders as to the value of the firm and its financial performance (Hemingway and Maclagan, 2004). In contrast, in keeping with this agency theory perspective, greater alignment of CEO incentives would lead to the maximization of owner interests (Jensen, 1983). Prior studies suggest that short- and long-run compensation payments may have different effects with regard to monitoring CEO actions (Jensen et al., 2004), and that shareholder interests will be safeguarded only when the chair of the board is not also the CEO (Williamson, 1985). Therefore, the primary motivation for this study is to draw attention to the importance of CEO compensation structure with regard to the CSR-FP relationship.

This study uses data from US firms for the period 2003-2011, and finds that there is a strong positive relationship between the people aspect of CSR and long-run FP when CEO compensation has a long-run focus. This study thus contributes to the literature in the following three ways. First, the CSR-FP link could be positive or negative, depending on some specific moderating factors, as noted by Rowley and Berman (2000). Loch and Buhay (2011) note that a survey carried out by Gibbs & Soell of both consumers and Fortune 1,000 CEOs indicated that the majority (88%) of business leaders claimed that their companies were making efforts to become greener. However, only 29% of the CEOs and 17% of consumers stated that they believed a majority of businesses are committed to taking action to become more environmentally sustainable. Therefore, this work attempts to extend existing studies by investigating the moderating role of CEO incentives, as seen in CEOs with long-run compensation incentives.

Second, early research on the CSR-FP link was plagued with measurement problems, because few good measures existed for the multidimensional construct of CSR (Griffin and Mahon, 1997). Recent advances in data collection, particularly the use of the *KLD* database, have provided broader and more encompassing measures of CRP that have been used in many studies (e.g., Hillman and Keim, 2001). The data used in the current work represent a multidimensional and stakeholder-defined assessment of CSR based on *KLD*. This study thus uses a proxy for CSR, aggregating the individual scores into one net social performance measure by subtracting concerns from strengths (Deckop et al., 2006; Graves and Waddock, 1994; Thomas and Simerly 1994). In addition, Walls et al. (2012) argue that combining the strengths and concerns of CSR might lead to non-significant or spurious results. Moser and Martin (2012) also argue that not all CSR activities could be profitable. There are thus inconsistencies in the literature with regard to how simple sum indices of these data should be obtained (Griffin and Mahon, 1997). Johnson and Greening (1999), Mahoney and Thorne (2005) suggest there are at least people (i.e., community relations, employee relations, diversity, and human rights) and product (i.e., environment and production) aspects of CSR. Therefore, this study not only includes a simple sum of the values across *KLD* categories, but also measures these two aspects of CSR (i.e., people and product).

Finally, this study attempts to develop an appropriate statistical method that applies factor analysis to integrate different financial performance (FP) measures into a single index, such as return on assets (ROA), return on equity (ROE), earnings per share (EPS), and cash flows to assets (CFA). This approach is based on the premise that the use of an aggregated indicator prevents the conflicting results characteristic of using different financial indicators. In addition, this study also switches from the focus on short-term financial performance to a longer time frame, because the benefits of CSR are more long-run in nature (Sanders, 2001; Chien and Peng, 2012; Peng and Yang, 2014). This may also prevent the conflicting results shown in prior studies regarding the association between CSR and

short-term FP.

The rest of this paper is organized as follows. Section 2 presents the hypotheses, while Section 3 describes the research method. Section 4 depicts the empirical results, while Section 5 then presents the conclusions of this work.

2 Hypotheses Development

According to agency theory, the separation of ownership and control leads to a conflict of interest between principals and agents, and this is commonly characterized as a divergence in the pursuit of managerial interests (agents) versus owners' interests (principals) (Jensen and Meckling, 1976). To eliminate self-interested behavior by an agent, a principal may monitor managerial decisions that shift some of the performance risk from the principal to the agent, and thus more closely align principal-agent interests (Fama and Jensen 1983). Short- and long-run compensation payments may thus have different effects with regard to monitoring CEO actions (Jensen et al., 2004). The elements of CEO compensation include fixed compensation (salary) and bonuses, stock options, and other forms of market-based compensation (Murphy, 1999). Salary or bonus payments reward executives for achieving short-term performance targets, rather than building the firm's long-run potential (Stata and Maidique, 1980). Such short-term payments may lead to less socially responsible actions (Murphy, 2000) in order to improve the short-term bottom line of the firm (Auperle et al., 1985; McGuire et al. 1988; McKendall et al., 1999; McWilliams and Siegel, 2000).

In contrast, agency theory predicts that the more equity managers hold in the firm, the greater their incentives to pursue value-maximizing behavior. Prior studies find evidence that managerial ownership is related to lower levels of opportunistic behavior (Dhaliwal et al., 1982; Warfield et al., 1995). Finkelstein (1992) argues that a high level of CEO stock ownership encourages managers to create new businesses, increase innovation, and respond more effectively to changing environments. CEO stock ownership may also increase managerial incentives to consider the long-run, and thus may motivate managers to invest in higher quality products and avoid a negative reputation due to bad environmental practices (Johnson and Greening, 1999). Sanders (2001) finds that stock options, the major component of long-run incentives, encourage riskier strategies by focusing managerial attention on potential gains, rather than on losses. Therefore, higher compensation in the form of stock and/or option ownership by CEOs may improve incentives for both CSR and long-run FP. Similarly, Deckop et al. (2006) find evidence that CEO payments with a long-run focus are positively related to CSR.

On the other hand, Walls et al. (2012) argue that combining all kinds of CSR into one indicator might lead to non-significant or spurious results. Griffin and Mahon (1997) also indicate that there are inconsistencies in the literature with regard to in how simple sum indices of these CSR data are formed. Johnson and Greening (1999), Mahoney and Thorne (2005) propose there are at least two aspects of CSR that need to be considered, those related to people and products. This study thus attempts to investigate the moderating role of long-run compensation with regard to the association between these two aspects of CSR and long-run performance.

First, the people aspect of CSR is about employee relations, diversity, community, and

human rights³ (Johnson and Greening, 1999; Mahoney and Thorne, 2005). CEOs may be reluctant to engage in the people aspect of CSR, because forgoing such investments makes it easier to meet short-term earnings goals, rather than maximizing long-run value (Morck et al., 2005). For example, Cai et al. (2011) find an inverse association between employee relations and short-run compensation (e.g. cash compensations). In contrast, long-term compensation attempts to focus executives' efforts on optimizing the longer term, which should direct their attention to factors traditionally associated with CSR (Mahapatra, 1984). In the same vein, the diversity metric of the people aspect of CSR reflects corporate policies on women, minority groups and the disabled, the community metric reflects corporate policies with regard both internal and external community groups, and the human rights metric reflects established relations in both non-US operations and the community category. In a sense, the diversity, community and human rights metrics are similar to the idea of providing fair treatment to employees, and related reasoning applies to all three of these. It is anticipated that a compensation payment plan that emphasizes long-run performance reduces pressure to maximize short-term earnings, which is at odds with CSR, and provides a longer timeframe within which the positive effects of good CSR are more likely to occur (Mahapatra, 1984; Spicer, 1978). Therefore, this study expects that firms with long-term compensation mechanics may encourage CEOs to pursue both the people aspect of CSR and long-run financial performance. The following hypothesis (in alternative form) is thus presented:

Hypothesis 1: A long-run focus in CEO compensation will positively moderate the relationship between the people aspect of CSR and long-run performance.

Second, the product aspect of CSR is related to the products the firm offers and the environmental protection efforts it makes (Johnson and Greening, 1999; Mahoney and Thorne, 2005). In general, the product aspect of CSR is concerned with consumer relations, which are improved by offering high quality and/or innovative products, as well as by ensuring their safety. Waddock and Graves (1997) state that positive consumer perceptions of product quality can help firms to achieve increased sales, eventually improving firm profitability. In addition, environmentally proactive firms are expected to enjoy greater profitability due to reduced costs for compliance with environmental regulations and improvements in operational efficiency (Russo and Fouts, 1997). Mahoney and Thorne (2005) indicate that long-term compensation is more likely to mitigate product/environment weaknesses, and thus claim that long-term compensation is associated with better environmental performance. This study thus expects that long-term compensation positively moderates the association between the product aspect of CSR and long-run performance. Accordingly, this study proposes the following hypothesis.

Hypothesis 2: A long-run focus in CEO compensation will positively moderate the relationship between the product aspect of CSR and long-run performance.

³KLD has assessed firms in the areas of human rights since 2002.

3 Research Design

3.1 Sample

The sample was drawn from US companies for the period from 2003⁴ to 2011. Data on CSR are drawn from the *KLD* (Kinder, Lindenberg, and Domini) database, as this approach has been used in previous studies (Graves and Waddock, 1994; Johnson and Greening, 1999). Data on CEO compensation and CEO duality are taken from S&P's *Execucomp* database. Financial data are from the *Compustat* database. The initial sample contains 2,732 CEO observations for the compensation sample for long-run performance analysis. This study eliminates 373 CEO observations with missing financial variables. This study also winsorizes all variables at the 1% and 99% percentile levels to reduce the influence of extreme values, and thus cuts 187 observations. As a result, this study examines a final total of 2,172 CEO observations. Table 1 reports the sample selection criteria.

Table 1: Sample Selection Criteria

<u>Criteria</u>	<u>Observations</u>
Observations with sufficient CEO data available on <i>KLD</i> and <i>Execucomp</i> between 2003-2011	2,732
Minus:	
1. CEO observations that lack sufficient financial variable data.	373
2. This study winsorizes all variables at the 1% and 99% percentile levels to reduce the influence of extreme values.	187
Final CEO observations	2,172

3.2 Empirical Model

The OLS approach is used to estimate the regression parameters, and standard regression diagnostics are carried out to evaluate the reliability of the results (Greene, 1997). All the t-values are estimated based on standard errors adjusted for heteroskedasticity (White, 1980). The empirical regression model is follows:

$$LR_FP_{i,t} = \alpha_0 + \alpha_1 CSR_{i,t} + \alpha_2 LTPF_{i,t} + \alpha_3 CSR_{i,t} \times LTPF_{i,t} + \beta_i ControlVariables + \varepsilon_i \quad (1)$$

where:

LR_FP_i = Long-Run Financial Performance, factor analysis is performed to generate factor scores from four accounting variables (ROE, ROA, EPS and CFA⁵). Following the approach proposed by Megginson et al. (1994), financial performance is measured with three different windows. Let Year (t) be the year of investment; LR_FP_1 then denotes the difference in a firm's factor score between Year(t+3) and Year(t-3). LR_FP_2 then denotes the difference in a firm's factor score between Year(t+5) and Year(t-5).

CSR = Corporate Social Performance, the first measure of CSR is Total CSR, CSR_Total , which is measured using a net score for each dimension by subtracting the total concerns

⁴ The *KLD* database contains complete firm data from 2003.

⁵ CFA denotes operating cash flow divided by average assets.

from total strengths, and then summing the net scores from each dimension. The second and third measures of CSR are the sub-dimensions of Total CSR: (1) CSR people and (2) CSR product. *CSR_People* is measured by the net scores from the people aspect (community relations, employee relations, diversity and human rights). *CSR_Product* is measured by the net scores from the product aspect (product and environment).

LTPF= Long-run Pay Focus, *LTPF* is measured by the percentage of long-run incentive payments (stock options and other long-run incentives) in the CEO’s total short- and long-run compensation.

Control Variables include *MTB*, *SIZE*, *EXFIN*, *PRIOR* and *GDPGW*. *MTB* is the ratio of a firm’s market value of equity to its book value of equity. *SIZE* is the natural logarithm of a firm’s total assets. *EXFIN* is measured as the sum over the succeeding two years of net equity financing and net debt financing, divided by average total assets. *PRIOR* × *CSR* represents whether pre-investment performance affects post-investment performance. *GDPGW* is measured using the annual growth rate of the US GDP.

3.3 Measures

3.3.1 Long-Run Financial Performance (*LR_FP*)

With regard to long-run FP, this study performs factor analysis with varimax rotation to generate factor scores from four performance variables (*ROE*, *ROA*, *EPS* and *CFA*), as in prior works (e.g., Jaggi and Freedman, 1992). More specifically, factor analysis is used to identify the factor patterns that yield only one factor (with an eigenvalue greater than one), and which capture the commonality among these four variables, and the related factor score essentially represents an index that integrates these four performance measures.

The factor analysis model can be stated as follows.

$$Y_i = \mu + Lf_i + \varepsilon_i; i = 1, 2, \dots, n \tag{2}$$

where Y_i is a set of p observable random variables, (f_1, f_2, \dots, f_n) are the factor scores for each observation and the L 's are unobservable factor loadings.

This study aims to find the vector of common factors for subject i , or \hat{f}_i , by minimizing the sum of the squared residuals. In matrix notation the solution is expressed as:

$$\hat{f}_i = (L'L)^{-1}L'(Y_i - \mu) \tag{3}$$

Substituting the estimated factor loadings into this expression, as well as the sample mean for the data, is carried out as follows:

$$\hat{f}_i = (\hat{L}'\hat{L})^{-1}\hat{L}'(Y_i - \bar{y}) \tag{4}$$

The factor score is a standardized number with a mean of zero and a standard error of one. The factor analysis yields only one factor (with an eigenvalue greater than one) that captures the commonality among these four variables, and its factor score essentially represents an index that integrates these four performance measures.

Next, following the approach proposed by Megginson et al. (1994) to measure long-run (three- and five-year windows) financial performance, let $Year(t)$ be the year of investment, LR_FP_1 denotes the difference in the average factor score of $Year(t+1)$ to $Year(t+3)$ and $Year(t-3)$ to $Year(t-1)$, and LR_FP_2 denotes the difference in the average factor score of $Year(t+1)$ to $Year(t+5)$ and $Year(t-5)$ to $Year(t-1)$. It is also worth noting that prior studies have used three- or five-year windows to measure long-run performance (Loughran and Ritter, 1995).

3.3.2 Corporate Social Responsibility (CSR).

KLD rates companies on a number of CSR indicators on dimensions including corporate governance, community relations, diversity, employee relations, human rights, environment, product, alcohol, gambling, military contracting, nuclear power, and tobacco. Following Kim et al. (2012), the last five dimensions are exclusionary screening categories, as these do not pertain to managers' discretionary behavior. In addition, corporate governance would be expected to have a bearing on aspects or sub-dimensions of CSR that could be directly impacted by the CEOs' decisions, while other sub-dimensions may be more impacted by the general business or cultural context in which a firm operates (Mahoney and Thorne, 2005). The CSR scores are thus based on the six remaining dimensions, excluding corporate governance. Each major area contains a set of "strength" and "concern" ratings, with the former often used to represent exemplary social performance, and the latter to represent poor CSR (Mahoney and Thorne, 2005; McGuire, et al., 2003). Many academic studies that use *KLD* ratings as a proxy for CSR aggregate the individual scores into one net social performance measure by subtracting concerns from strengths (Deckop et al., 2006; Graves and Waddock, 1994; Thomas and Simerly 1994). Therefore, we also calculate a net score for each dimension by subtracting total concerns from total strengths, and then sum the net scores from each dimension for the Total CSR variable (CSR_Total). In addition, Johnson and Greening (1999), Mahoney and Thorne (2005) argue that combining all of the CSR dimensions in the *KLD* database into one construct is inappropriate, as there appear to be at least two dimensions, one related to people and the other to product. The total CSR is thus separated into two dimensions (e.g. CSR_People and $CSR_Product$). The CSR people (CSR_People) is measured by the net scores from the people aspect (community relations, employee relations, diversity and human rights). The CSR product ($CSR_Product$) is measured by the net scores from the product aspect (product and environment).

3.3.3 Long-run Pay Focus (LTPF).

Following Deckop et al. (2006), this study computes long-run pay focus for CEOs by dividing the dollar value of restricted stocks and stock options (valued using the Black-Scholes method) granted to the CEO during the year by the total dollar value of pay, including salary, bonus, and stock options.

3.3.4 Control Variables

Earlier studies generally use the market-to-book ratio and firm size as control variables (e.g., Al-Tuwaijri et al., 2004). In this study, *MTB* denotes the ratio of the market value of equity to the book value of equity, while *SIZE* is the natural logarithm of total assets. This study also includes financial demand as a control variable, and *EXFIN* is measured as the

sum over the succeeding two years of net equity financing and net debt financing, from the statement of cash flows, divided by average total assets. In addition, since firms with greater FP in the previous year are more likely to engage in CSR, because they can afford to, and such investments in CSR can lead to even greater FP returns, this study also examines whether pre-investment performance affects post-investment performance. To investigate this in more detail, an interactive variable of pre-investment financial performance and CSR ($PRIOR \times CSR$) is used in the regression models as a control variable. Finally, this study also include growth ratio of US GDP $GDPGW$ variables in the regressions.

4 Empirical Results

4.1 Descriptive statistics

Table 2 provides descriptive statistics for the sample observations. First, the three-year window long-run financial performance (LR_FP_1) has a mean of 0.01, and the five-year window long-run financial performance (LR_FP_2) has a mean of 0.03, suggesting, on average, that most firms exhibited slightly positive long-run financial performance during the sample years. Second, the average total CSR (CSR_Total) is -0.17, while the CSR product aspect ($CSR_Product$) is -0.28, and the CSR people aspect (CSR_People) is -0.32. This means that most firms' total concerns with regard to CSR are greater than their total strengths, indicating most firms have poor CSR ratings. Chen et al. (2011) also find that CSR strengths minus concerns is -0.467 by using *KLD* data for the period 2000-2008. The CSR assessments used in this study are thus similar to those in prior works. In addition, the average long-run compensation to total compensation ($LTPF$) is 0.61, which is similar to the results (0.608) in McGuire et al. (2003) and (0.63) Deckop et al. (2006). In addition, the means of *SIZE*, *EXFIN* and *MTB* are 7.56, -0.02 and 2.83, respectively.

Table 2 also shows the Pearson correlation matrix of all the variables, indicating the highest correlation (absolute value) between the independent variables is -0.28 (the correlation between *CSR Product* and *SIZE*). Gujarati (1995) suggests that correlations in excess of 0.5 may indicate collinearity, and thus this study does not expect collinearity to be a serious problem for the multivariate estimations.

Table 2: Descriptive Statistics (N=2,172)

Variable	Mean	Std. dev.	LR_FP ₁	LR_FP ₂	CSR Total	CSR People	CSR Product	LTPF	SIZE	EXFIN	MTB
<i>LR_FP₁</i>	0.01	0.78	-	0.67**	-0.02	0.01	-0.05**	0.06**	-0.01	-0.06**	0.26**
<i>LR_FP₂</i>	0.03	1.13		-	-0.04	-0.01	-0.06**	0.04	-0.04	-0.09**	0.25**
<i>CSR Total</i>	-0.17	0.39			-	0.72**	0.55**	-0.01	-0.04**	-0.08**	0.13**
<i>CSR People</i>	-0.28	2.02				-	0.11**	0.05	0.18**	-0.09**	0.12**
<i>CSR Product</i>	-0.32	1.10					-	-0.07*	-0.28**	-0.01	0.08**
<i>LTPF</i>	0.61	0.27						-	0.24**	0.01	0.09**
<i>SIZE</i>	7.56	1.71							-	-0.04**	0.06**
<i>EXFIN</i>	-0.02	0.11								-	0.13**
<i>MTB</i>	2.83	2.24									-

Note: This study performs factor analysis to generate factor scores from four accounting variables (*ROE*, *ROA*, *EPS* and *CFA*). Following the approach proposed by Megginson et al. (1994), financial performance is measured with three different windows. Let Year(t) be the year of investment, *LR_FP₁* denotes the difference in the average factor score of Year(t+1) to Year(t+3) and Year(t-3) to Year(t-1), and *LR_FP₂* denotes the difference in the average factor score of Year(t+1) to Year(t+5) and Year(t-5) to Year(t-1). *Total CSR* is measured by a net score for each dimension by subtracting total concerns from total strengths and then summing the net scores from each dimension for a grand total in the *KLD* database. *CSR People* is measured by the net scores from the *people aspect* (community relations, employee relations, diversity and human rights). *CSR Product* is measured by the net scores from the *product aspect* (product and environment). *LTPF* is measured by the percentage of long-run incentive payments (stock options and other long-run incentives) in the CEO's total short- and long-run compensation. *SIZE* is the natural logarithm of a firm's total assets. *EXFIN* is measured by the sum over the succeeding two years of net equity financing and net debt financing, from the statement of cash flows, divided by average total assets. *MTB* is the ratio of a firm's market value of equity to its book value of equity. ** and * represent significance at the 1% and 5% levels using the two-tailed test, respectively.

4.2 Empirical Results

The results for three-year long-run financial performance are presented in Table 3. The coefficients of *CSR* are negative and insignificant in almost all the equations, and the coefficients for long-run compensation focus (*LTPF*) are all positive and insignificant.

The results of the regression analysis testing the relations of the composite measure of total *CSR* indicate that the coefficient for *CSR*×*LTPF* is insignificant. In addition, the results of

the regression analysis testing the relations with regard to the composite measure of CSR people indicate the coefficient for $CSR \times LTPF$ is positive and significant (coefficient=0.019, $p < 0.05$, the third column in Table 3), which supports hypothesis 1. This suggests that firms with long-term compensation mechanisms may encourage CEOs to pursue both the people aspect of CSR and long-run financial performance. On the other hand, the results of the regression analysis testing the relations with regard to the composite measure of CSR product indicate the coefficient for $CSR \times LTPF$ is negative and insignificant (coefficient=-0.022, $p > 0.05$, the fourth column in Table 3), which does not support hypothesis 2. Finally, Table 3 also shows the results based on five-year windows of the long-run financial performance (coefficient=0.046, $p < 0.05$, the seventh column in Table 3 regarding hypothesis 1 and coefficient=-0.052, $p > 0.05$, the eighth column in Table 3 regarding hypothesis 2). The results are consistent with those obtained with three-year windows.

Table 3: The Effect of CEO Compensation on the association between CSR and Performance

Performances Variables \ CSR	Three year long-run FP (LR_FP ₁) (N=2,172)				Five year long-run FP (LR_FP ₂) (N=918)			
	Not Included	CSR_ Total	CSR_ People	CSR_ Product	Not Included	CSR_ Total	CSR_ People	CSR_ Product
<i>Intercept</i>	-0.510** (-4.63)	-0.300** (-5.52)	-0.273** (-4.86)	-0.246** (-4.42)	-0.644 (-1.52)	-0.494* (-2.37)	-0.420* (-1.99)	-0.409 (-1.95)
<i>CSR</i>	-0.027 (-1.57)	-0.077 (-1.75)	-0.120 (-1.48)	-0.105 (-1.29)	-0.048 (-1.75)	-0.179 (-1.79)	-0.244 (-1.35)	-0.178 (-1.06)
<i>LTPF</i>		0.031 (0.93)	0.036 (1.06)	0.032 (0.94)		0.041 (0.56)	0.045 (0.63)	0.023 (0.31)
$CSR \times LTPF$		0.002 (0.26)	0.019* (2.03)	-0.022 (-1.02)		0.012 (0.48)	0.046* (2.06)	-0.052 (-1.05)
<i>SIZE</i>	-0.010 (-0.85)	0.008 (1.37)	0.003 (0.61)	0.001 (0.24)	-0.014 (-0.59)	-0.004 (-0.32)	-0.014 (-1.02)	-0.016 (-1.21)
<i>EXFIN</i>	0.105 (0.63)	-0.070 (-0.84)	-0.062 (-0.75)	-0.059 (-0.71)	0.027 (0.06)	-0.944** (-4.23)	-0.918** (-4.12)	-0.913** (-4.12)
<i>MTB</i>	0.131** (16.18)	0.085** (18.62)	0.085** (18.46)	0.085** (18.62)	0.216** (10.84)	0.101** (8.58)	0.099** (8.45)	0.102** (8.71)
<i>GDPGW</i>	3.341** (2.77)	0.490 (0.82)	0.487 (0.82)	0.450 (0.75)	1.758 (0.28)	4.361 (1.41)	4.313 (1.40)	4.721 (1.54)
$CSR \times$ <i>PRIOR</i>	0.001 (0.84)	0.001 (1.61)	0.001 (1.58)	0.001 (1.85)	-0.001 (-0.07)	0.001 (0.57)	0.001 (0.56)	0.001 (0.89)
F-statistic (p- value)	17.84 (p<0.01)	19.92 (p<0.01)	20.14 (p<0.01)	20.33 (p<0.01)	9.11 (p<0.01)	7.94 (p<0.01)	8.15 (p<0.01)	8.26 (p<0.01)
Adjusted R ²	11.46%	16.67%	16.86%	17.00%	12.49%	14.83%	15.21%	15.40%

Note: Definitions of variables appear in Table 2. *PRIOR* is the difference in factor scores between the investment year and prior investment year. **, and * represent significance at the 1% and 5% levels using the two-tailed test, respectively. The t-values based on standard errors are adjusted for heteroskedasticity (White, 1980).

In addition, Surroca et al. (2010) and Dowell et al. (2000) suggest that Tobin's q is an appropriate indicator to measure the effects of a firm's CSR investments over the long-run. Therefore, it is also used in this work as a measure of market performance with a long-run focus. This is calculated as the market value of common stock plus the book value of the preferred stocks and total liabilities deflated by total assets (Chung and Pruitt, 1994), and

the hypotheses in this work are then re-examined by replacing the dependent variable of financial performance with Tobin's q. The results are reported in Table 4. For hypothesis 1, this study finds that there is positive relationship between *CSR People* and long-run FP when CEO compensation has a long-run focus (coefficient=0.078, $p < 0.05$, the second column in Table 4). Therefore, replacing the financial performance measure with Tobin's q does not influence the results reported above.

Table 4: The Effect of CEO Compensation on the Link between CSR and Tobin's q

<i>CSR</i>	<i>CSR_Total</i>		<i>CSR_People</i>		<i>CSR_Product</i>	
<i>Intercept</i>	1.824** (12.07)	-0.704** (-5.58)	1.989** (13.03)	-0.554** (-4.27)	1.950** (12.49)	-1.044** (-8.00)
<i>CSR</i>	0.046* (2.02)	0.076** (3.78)	0.031 (1.09)	0.054** (2.19)	0.537** (8.69)	0.200** (4.06)
<i>LTPF</i>		0.172* (2.06)		0.167* (1.97)		0.090 (1.06)
<i>CSR</i> × <i>LTPF</i>		0.052 (1.84)		0.078* (2.16)		0.001 (0.02)
<i>SIZE</i>	-0.066** (-4.90)	0.293** (17.90)	-0.089** (-6.48)	0.267** (15.80)	-0.072** (-5.07)	0.344** (19.92)
<i>ROE</i>	3.335** (26.63)	1.979** (15.45)	3.335** (26.71)	2.024** (15.58)	3.378** (27.03)	1.983** (15.30)
<i>SALE</i>	0.001 (1.69)	0.275** (4.67)	0.001 (1.72)	0.286** (4.78)	0.001 (1.80)	0.239** (4.01)
<i>GDPGW</i>	15.670** (10.72)	11.784** (8.13)	15.490** (10.62)	11.888** (8.09)	15.608** (10.68)	11.869** (8.10)
<i>CSR</i> × <i>PRIOR</i>	0.844** (3.73)	-0.001** (-2.57)	0.848** (3.76)	-0.001** (-2.62)	0.859** (3.80)	-0.001** (-3.05)
F-statistic	136.11	173.06	138.98	160.64	136.71	163.77
(p-value)	($p < 0.01$)	($p < 0.01$)	($p < 0.01$)	($p < 0.01$)	($p < 0.01$)	($p < 0.01$)
Adjusted R ²	24.50%	40.43%	24.89%	38.64%	24.58%	39.1%
N	2,172	2,172	2,172	2,172	2,172	2,172

Note: This study follows Chung and Pruitt (1994), who define Tobin's q as (Market Value of Equity+Preferred Stocks+Debt)/Total Assets. *ROE* is defined as the net income to average equity. *SALE* is defined as a sales growth percentage from the prior three year's sales. Definitions of other variables appear in Table 2. *PRIOR* is the difference in factor scores between the investment year and prior investment year. **, and * represent significance at the 1% and 5% levels using the two-tailed test, respectively. The t-values based on standard errors are adjusted for heteroskedasticity (White, 1980).

In addition, this study also tests the aggregate "strengths" and "concerns" for a CSR measure. Each domain can represent distinct constructs, because *KLD* environmental strengths and total *KLD* environmental concerns are positively correlated, suggesting that aggregation might cloak the underlying factors (Mattingly and Berman, 2006). In other words, existing studies tells us little about the factors that encourage exemplary social performance, or the implications of these. Table 2 shows that the average total CSR (*CSR_total*) is -0.17, the product aspect (*CSR_Product*) is -0.28 and the people aspect (*CSR_People*) is -0.32, indicating most firms' total concerns with regard to CSR are greater than their total strengths with regard to CSR. To resolve this potential problem in measuring CSR, this study also examines its hypotheses by including both the strengths and concerns dimensions. Table 5 shows the empirical results based on three-year windows, and these

are generally consistent with prior findings, while the result for $CSR \times LTPF$ is only positive and significant for *Total Strength in CSR People* (coefficient=0.035, $p < 0.01$), which supports hypotheses 1. The untabulated results based on five-year windows, are consistent with those based on three-year windows.

Table 5: The Effects of CEO Compensation Structure on Strengths or Concerns of CSR and Long-run FP

Independent variables	CSR		CSR_People		CSR_Product			
	Total Strengths		Total Concerns		Total Strengths		Total Concerns	
	Parameter	t-value	Parameter	t-value	Parameter	t-value	Parameter	t-value
<i>Intercept</i>	-0.382**	-4.65	-0.434**	-5.39	-0.408**	-5.12	0.470	1.00
<i>CSR</i>	-0.044	-1.87	0.070	1.12	-0.048	-1.25	0.143	1.59
<i>LTPF</i>	-0.037	-1.16	0.020	0.51	-0.005	-0.18	0.080	0.45
$CSR \times LTPF$	0.035**	3.71	-0.016	-0.64	0.037	0.88	0.084	0.63
<i>SIZE</i>	-0.001	-0.08	-0.002	-0.26	0.007	1.04	-0.111**	-3.27
<i>EXFIN</i>	-0.198	-1.92	-0.176	-1.71	-0.190	-1.84	0.716	1.45
<i>MTB</i>	0.091**	17.27	0.089**	16.97	0.088**	16.85	0.138**	6.87
<i>GDPGW</i>	2.003*	2.45	2.096**	2.56	1.914*	2.32	-2.002	-0.31
$CSR \times PRIOR$	-0.040*	-1.97	-0.039	-1.92	-0.038	-1.90	-0.001	-0.02
F-statistic	18.93		18.17		16.77		9.47	
(p-value)	(p<0.01)		(p<0.01)		(p<0.01)		(p<0.01)	
Adjusted R ²	8.30%		7.98%		7.38%		6.13%	

Note: Definitions of variables appear in Table 2. *PRIOR* is the difference in factor scores between the investment year and prior investment year. **, and * represent significance at the 1% and 5% levels using the two-tailed test, respectively. The t-values based on standard errors are adjusted for heteroskedasticity (White, 1980).

5 Conclusion

Although many prior studies have investigated the CSR-FP link, little is known about how CEO incentives affect this relationship. This work is thus the first to examine whether CEO incentives (long-run compensation structure) moderate the relationship between various measures of CSR and long-run financial performance. The results show that the relationship between the CSR people aspect (i.e., community relations, employee relations, diversity and human rights) and long-run FP is positively moderated by CEO compensation with a long-run focus, which is consistent with the related hypothesis, but this is not the case for the CSR product aspect.

The results of this study have the following business implications. There have been few studies that investigate whether CEO compensation with a long-run focus moderates the relationship between CSR and long-run FP. This is of interest, as CEO compensation is a visible and potentially important managerial mechanism through which owners and the board of directors can direct managerial attention to specific objectives that have both financial and social implications. The results of this study show that the relationship between the CSR people aspect and long-run FP is positively moderated by CEO compensation with a long-run focus, which is consistent with the proposal in signaling

theory that hiring individuals from underrepresented groups sends a positive signal regarding a firm's reputation and legitimacy (Mahoney and Thorne, 2005; Turban and Greening, 1997), and thus CEOs might not interpret the costs of hiring of women and minorities, and the good treatment of employees, as unnecessary short-term expenses if their compensation has a long-run focus.

Some limitations of this work should be noted when interpreting the results and considering future studies. First, one direction for future work is that the findings of this study may not generalize to other countries. It is thus necessary to use cross-country data to investigate the CSR-FP link. Second, this study focuses on whether CEO compensation structure moderates the association between CSR and FP. In fact, various firm- and national-level corporate governance mechanisms might mitigate opportunism regarding the link between CSR and FP. Therefore, this study encourages future works to investigate the effects of corporate governance mechanisms.

References

- [1] S. A. Al-Tuwaijri, T. E. Christen and K. E. Hughes, The Relations Among Environmental Disclosure, Environmental Performance and Financial Performance: A Simultaneous Equations Approach, *Accounting, Organizations and Society*, **29**(5/6), (2004), 447-471.
- [2] K. E. Auperle, A. Carroll and J. Hatfield, An Empirical Examination of the Relationship between Corporate Social Responsibility and Profitability, *Academy of Management Journal*, **28**(2), (1985), 446-463.
- [3] T. Cai, J. Hoje and C. Pan, Vice or Virtue? The Impact of Corporate Social Responsibility on Executive Compensation, *Journal of Business Ethics*, **104**(2), (2011), 159-173.
- [4] A. K. Chatterji, D. I. Levine and M. W. Toffel, How Well Do Social Ratings Actually Measure Corporate Social Responsibility? *Journal of Economics and Management Strategy*, **18**(1), (2009), 125-169.
- [5] C. C. Chien and C. W. Peng, Does Going Green Pay Off in the Long-run? *Journal of Business Research*, **65**(11), (2012), 1636-1642.
- [6] K. H. Chung and S. W. Pruitt, A Simple Approximation of Tobin's Q, *Financial Management*, **23**(3), (1994), 70-74.
- [7] J. R. Deckop, K. K. Merriman and S. Gupta, The Effects of CEO Pay Structure on Corporate Social Performance, *Journal of Management*, **32**(3), (2006), 329-342.
- [8] D. Dhaliwal, G. Solomon and E. Smith, The Effect of Owner Versus Management Control on the Choice of Accounting Methods, *Journal of Accounting and Economics*, **4**(1), (1982), 41-53.
- [9] D. S. Dhaliwal, L. Zhen, A. Tsang and Y. Yong, Voluntary Nonfinancial Disclosure and the Cost of Equity Capital: The Initiation of Corporate Social Responsibility Reporting, *The Accounting Review*, **86**(1), (2011), 59-100.
- [10] D. S. Dhaliwal, S. Radhakrishnan A. Tsang and Y. Yong, Nonfinancial Disclosure and Analyst Forecast Accuracy: International Evidence on Corporate Social Responsibility Disclosure, *The Accounting Review*, **87**(3), (2012), 723-759.
- [11] G. Dowell, S. Hart and B. Yeung, Do Corporate Global Environmental Standard Create or Destroy Market Value?" *Management Science*, **46**(8), (2000), 1059-1074.

- [12] E. Fama and M. Jensen, The Separation of Ownership and Control, *Journal of Law and Economics*, **26**(2), (1983), 301-325.
- [13] S. Finkelstein, Power in Top Management Teams: Dimensions, Measurement, and Validation, *Academy of Management Journal*, **35**(3), (1992), 505-538.
- [14] R. E. Freeman, *Strategic Management: A Stakeholder Approach*. Boston: Pitman. 1984.
- [15] M. Friedman, *Capitalism and Freedom*. The University of Chicago Press: Chicago. 1962.
- [16] M. Friedman, A Friedman Doctrine: The Social Responsibility of Business Is to Increase Its Profits, *New York Times Magazine*, **13**, (1970), 33.
- [17] F. Gollop and M. J. Roberts, Environmental Regulation and Productivity Growth: The Case of Fossil-Fuel Electric Power Generation, *Journal of Political Economy*, **91**(4), (1983), 654-674.
- [18] S. B. Graves and S. A. Waddock, Institutional Owners and Corporate Social Performance, *Academy of Management Journal*, **37**(4), (1994), 1034-1046.
- [19] W. H. Greene, *Econometric Analysis*. New Jersey: Prentice Hall. 1997.
- [20] J. J. Griffin and J. F. Mahon, The Corporate Social Performance and Corporate Financial Performance Debate: Twenty-five Years of Incomparable Research, *Business & Society*, **36**(5), (1997), 5-31
- [21] D. Gujarati, *Basic Econometrics*, 3rd ed., New York: McGraw-Hill. 1995.
- [22] C. Hemingway and P. Maclagan, Managers' Personal Values As Drivers of Corporate Social Responsibility, *Journal of Business Ethics*, **50**(1), (2004), 33-44.
- [23] B. Jaggi and M. Freedman, An Investigation of the Pollution Performance on Economic and Market Performance: Pulp-and-Paper Firms, *Journal of Business Finance and Accounting*, **15**(5), (1992), 607-713.
- [24] M. C. Jensen, Organization Theory and Methodology, *The Accounting Review*, **58**(2), (1983), 319-338.
- [25] M. C. Jensen and W. H. Meckling, Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics*, **3**(4), (1976), 305-360.
- [26] M. C. Jensen, K. J. Murphy and E. G. Wruck, Remuneration: Where We've Been, How We Got to Here, What Are the Problems, and How to Fix Them, *Harvard NOM Working paper*. (2004).
- [27] R. A. Johnson and D. W. Greening, The Effects of Corporate Governance and Institutional Ownership Types on Corporate Social Performance, *Academy of Management Journal*, **42**(5), (1999), 564-576.
- [28] Y. Kim, M. Park and B. Wier, Is Earnings Quality Associated with Corporate Social Responsibility? *The Accounting Review*, **87**(3), (2012), 761-796.
- [29] R. Loch and M. C. Buhay, *Perspectives on Corporate Sustainability Among Consumers and Fortune 1000 Executives*. available at: <http://www.gibbs-soell.com/wp-content/uploads/2010/08/2010-Gibbs-Soell-Sense-Sustainability-Study.pdf>. 2011.
- [30] T. Loughran and J. R. Ritter, The New Issues Puzzle, *Journal of Finance*, **50**(1), (1995), 23-51.
- [31] S. Mahapatra, Investor Reaction to A Corporate Social Accounting, *Journal of Business Finance and Accounting*, **11**(1), (1984), 29-40.

- [32] L. S. Mahoney and L. Thorne, Corporate Social Responsibility and Long-Run Compensation: Evidence from Canada, *Journal of Business Ethics*, **57**(3), (2005), 241-253.
- [33] J. D. Margolis and J. P. Walsh, Misery Loves Companies: Rethinking Social Initiatives by Business, *Administrative Science Quarterly*, **48**(2), (2003), 268-305.
- [34] J. E. Mattingly and S. Berman, Measurement of Corporate Social Action: Discovering Taxonomy in the Kinder Lydenburg Domini Ratings Data, *Business and Society*, **45**(1), (2006), 1-27.
- [35] J. McGuire, S. Dow and K. Archgeyd, CEO Incentives and Corporate Social Performance, *Journal of Business Ethics*, **45**(4), (2003), 341-359.
- [36] J. McGuire, T. Schneeweis and A. Sundgren, Corporate Social Responsibility and Firm Financial Performance, *Academy of Management Journal*, **31**(4), (1988), 854-872.
- [37] M. McKendall, C. Sanchez and P. Sicilian, Corporate Governance and Corporate Illegality: The Effects of Board Structure on Environmental Violations, *International Journal of Organizational Analysis*, **7**(3), (1999), 201-223.
- [38] A. McWilliams and D. Siegel, Corporate Social Responsibility and Financial Performance: Correlation or Misspecification? *Strategic Management Journal*, **21**(5), (2000), 603-610.
- [39] W. L. Megginson, R. C. Nash and M. V. Randenborgh, The Financial and Operating Performance of Newly Privatized Firms: An International Empirical Analysis, *Journal of Finance*, **49**(3), (1994), 403-452.
- [40] D. Morck, D. Wolfenzon and B. Yeung, Corporate Governance, Economic Entrenchment and Growth, *Journal of Economics Literature*, **43**(3), (2005), 655-721.
- [41] G. M. Moore, Corporate Social Performance: An Investigation in the U.K. Supermarket Industry, *Journal of Business Ethics*, **34**(3-4), (2001), 299-315.
- [42] D. V. Moser and P. R. Martin, A Broader Perspective on Corporate Social Responsibility Research in Accounting, *The Accounting Review*, **87**(3), (2012), 797-806.
- [43] K. J. Murphy, *Executive Compensation*, in Orley Ashenfelter and David Card, eds., *Handbook of Labor Economics*. Vol. III. North Holland. 1999.
- [44] K. J. Murphy, Performance Standards and Incentive Contracts, *Journal of Accounting and Economics*, **30**(3), (2000), 245-278.
- [45] C. W. Peng and M. L. Yang, The Effect of Corporate Social Performance on Financial Performance: The Moderating Effect of Ownership Concentration, *Journal of Business Ethics*, **123**(1), (2014), 171-182.
- [46] T. Rowley and S. Berman, A Brand New Brand of Corporate Social Performance, *Business and Society*, **39**(4), (2000), 397-418.
- [47] B. M. Ruf, K. Muralidhar R. M. Brown J. J. Janney and K. Paul, An Empirical Investigation of the Relationship between Change in Corporate Social Performance and Financial Performance: A Stakeholder Perspective, *Journal of Business Ethics*, **32**(2), (2001), 143-156.
- [48] M. V. Russo and P. A. Fouts, A Resource-Based Perspective of Corporate Environmental Performance and Profitability, *Academy of Management Journal*, **40**(3), (1997), 534-559.
- [49] W. G. Sanders, Behavioral Responses of CEO's to Stock Ownership and Stock Option Pay, *Academy of Management Journal*, **44**(3), (2001), 477-492.

- [50] H. Servaes and A. Tamayo, The Impact of Corporate Social Responsibility on Firm Value: The Role of Customer Awareness, *Management Science*, **59**(5), (2013), 1045-1061.
- [51] B. Seifert, S. A. Morris and B. R. Bartkus, Comparing Big Givers and Small Givers: Financial Correlates of Corporate Philanthropy, *Journal of Business Ethics*, **45**(3), (2003), 195-211.
- [52] W. G. Simpson and T. Kohers, The Link between Social and Financial Performance: Evidence from the Banking Industry, *Journal of Business Ethics*, **35**(2), (2002), 97-109.
- [53] J. B. Smith and W. A. Sims, The Impact of Pollution Charges on Productivity Growth in Canadian Brewing, *Rand Journal of Economics*, **16**(3), (1985), 410-423.
- [54] M. A. Soana, The Relationship between Corporate Social Performance and Corporate Financial Performance in the Banking Sector, *Journal of Business Ethics*, **104**(1), (2011), 133-148.
- [55] B. H. Spicer, Investors, Corporate Social Performance and Information Disclosure: An Empirical Study, *The Accounting Review*, **53**(1), (1978), 94-111.
- [56] J. Surroca, J. A. Tribo and S. Waddock, Corporate Responsibility and Financial Performance: The Role of Intangible Resources, *Strategic Management Journal*, **31**(5), (2010), 463-490.
- [57] R. Stata and M. Maidique, Bonus System for A Balanced Strategy, *Harvard Business Review*, **58**(6), (1980), 158-183.
- [58] A. S. Thomas and R. L. Simerly, The Chief Executive Officer and Corporate Social Performance: An Interdisciplinary Examination, *Journal of Business Ethics*, **13**(12), (1994), 959-969.
- [59] D. B. Turban and D. W. Greening, Corporate Social Performance and Organizational Attractiveness to Prospective Employees, *Academy of Management Journal*, **40**(3), (1997), 658-672.
- [60] S. Waddock, Myths and Realities of Social Investing, *Organization & Environment*, **16** (3), (2003), 369-380.
- [61] J. L. Walls, P. Berrone and P. H. Phan, Corporate Governance and Environmental Performance: Is There Really A Link? *Strategic Management Journal*, **33**(8), (2012), 885-913.
- [62] T. D. Warfield, J. J. Wild and K. L. Wild, Managerial Ownership, Accounting Choices, and Informativeness of Earnings, *Journal of Accounting and Economics*, **20**(1), (1995), 61-91.
- [63] H. White, A heteroskedasticity-Consistent Covariance Matrix Estimator and A Direct Test for Heteroscedasticity, *Econometrica*, **48**(4), (1980), 817-838.
- [64] O. Williamson, *The Economic Institutions of Capitalism*, New York, Free Press. 1985.