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Master Thesis Accounting & Finance

'Relative Social Performance Evaluation and Executive Compensation'

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Abstract

I examine the association between chief executive officer (CEO) compensation and corporate social performance (CSR) by considering relative performance evaluation (RPE) as a monitoring tool adopted by corporate boards. Since the MSCI database measures CSR differently over time, I construct time consistent measures of social performance to overcome this issue. After testing the hypotheses, I argue that the MSCI database is not suitable to establish time consistent performance measures of CSR. Subsequently, I tested the hypotheses for each year separately in the sample. Based on the results, I suppose the association between compensation and CSR has become increasingly important over time. By scrutinizing the most recent year in the sample, I found social performance to be positively related to CEO compensation. Moreover, I found the mechanism of RPE on social performance to be positively associated with executive remuneration for the most recent year in the sample. Besides, I found this association to be stronger for firms characterized by strong corporate boards.

Keywords: *Corporate Social Responsibility (CSR), Relative Performance Evaluation (RPE), Executive Compensation, Corporate Governance*

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I. Introduction

Since the equilibrium of the concepts People, Planet, Profit has become increasingly important in business life, companies are attempting to find the most efficient way to embed 'Corporate Social Responsibility'[1] into corporate policies. In prior literature, there is an ongoing discussion about how to define the concept of CSR. However, those definitions are largely compatible according to Dahlsrud (2008). He argues that companies should rather focus on how corporate citizenship is structured in specific contexts and how to embed this in their corporate strategies, than searching for the right definition of CSR. Nevertheless, CSR is widely recognized as a company's social behaviour that goes further than is legally obliged by a company and goes beyond a company's interests (McWilliams & Siegel, 2006). Although the earliest indication of social responsibility dates from the 1930s according to Carroll (1999), the relevancy of the concept of CSR has increased over the last few decades.

In a synthesis of the existing literature on CSR, Malik (2015) outlines the value-enhancing capabilities of social engagement and argues that the advantages outbalance the potential costs. This underlines the importance to strategically implement social initiatives in corporate policies. However, existing literature indicates that investments in CSR can either be value-creating or value-destructing (Jian & Lee, 2015). Therefore, firms should adopt social behaviour to a certain extent to ensure its value-enhancing capabilities. Executives have a major responsibility in strategical implementations and should thus be incentivized to integrate corporate social responsibility into corporate policies.

This thesis empirically examines whether a company's CSR performance affects the compensations of executives. Existing literature shows diverging outcomes concerning this association (Malik, 2015). Some academics found social performance and executive remuneration to be adversely related (Jian & Lee, 2015; Cai et al., 2011). On the other hand, some scholars found that better CSR performance results in increased rewards for executives (Berrone & Gomez-Mija, 2009; Mahoney & Thorne, 2006). This results in the following research question:

RQ (1): *Does CSR performance influences the way executives are compensated?*

Since the increased relevance of corporate social responsibility and the enlarged transparency of information due to technological changes, a board of directors can use the mechanism RPE in assessing a firm's social performance relative to that of its peers (DeFond & Park, 1999). Consequently, this assessment could be contemplated in the compensation

[1] Corporate Social Responsibility', hereafter referred to as 'CSR'.

consideration for executives. I explore the RPE mechanism by comparing a firm's performance on social initiatives to the average industry social performance.

Subsequently, following the value creation and destruction hypothesis (Jian & Lee, 2015), I expect CSR performance to converge to an industry equilibrium level. Through the mechanism of RPE, I propose boards of directors are able identify this equilibrium level. Moreover, the effect of Relative Performance Evaluation on executive compensation may be more pronounced at firms characterized by stronger boards, since the importance of governance strength in compensation and CSR literature is widely presented (Malik, 2015). Consecutively, this leads to the following research questions:

RQ (2): *Does Relative Performance Evaluation on social engagement influence the way executives are compensated?*

RQ (3): *Does Governance Strength affects the association between Relative Performance Evaluation and Executive Remuneration?*

I obtain social performance data from the MSCI database. However, former research extensively argues that this data source suffers from inadequacy in measurement and definition of social performance. The MSCI database does not measure the social indicators consistently over time. Besides, for each dimension, the number of available CSR performance measures vary for each year (McWilliams & Siegel, 2000; Taneja et al., 2011, Chatterji et al., 2009). Therefore, I construct different time consistent measures of social performance to tackle this inefficiency and to examine the effect of CSR engagement on CEO compensation. Using a sample of 11,027 firm-year observations for the period 1996 to 2016, my findings indicate major differences between the time consistent periods, besides the results are largely insignificant. An explanation for this could be that CSR performance does not affect compensation levels. However, I conclude the MSCI database is not an appropriate source for constructing time consistency measures of social performance.

Additionally, I scrutinize the hypotheses by analysing each year in the data sample separately. The results demonstrate a trend in significance levels of the coefficients, which implies corporate social responsibility has become increasingly important over time. By studying the most recent year in the sample(2016), I find support for my first hypothesis. This hypothesis suggests a positive association between CSR performance and CEO compensation. Moreover, I tested the second hypothesis for the most recent year in the data sample and found evidence that RPE based CSR performance positively influences executive remuneration. Furthermore, I found the effect of RPE to be more pronounced under firms characterized by stronger corporate governance for the year 2016.

The main purpose of this thesis is to examine the effect of relative performance evaluation of social performance on CEO compensation as a mechanism that can be used by boards of directors to assess the performance of executives. On the one hand, this thesis contributes to the existing literature as I am the first to consider RPE as a mechanism in the assessment of social performance. On the other hand, given the mixed findings in prior research and the inconsistency in measurement of social performance over time by the MSCI database, I use a different approach in constructing social performance by using time consistent measures.

This thesis is structured as follows. Section II elaborates on the theory behind this research and hypothesis development. Section III describes the sample collection and methodology behind this study. In Section IV, the empirical results are presented and discussed. Section V is devoted to the discussion and conclusion.

II. Theoretical Background and Hypothesis Development

Former CSR research shows considerable inconsistency in findings on various topics, which is mainly attributable to misspecification of econometric models or concerns related to the measurement or definition of CSR (McWilliams & Siegel, 2000; Taneja et al., 2011, Chatterji et al., 2009). Although prior literature shows opposing views between altruistic or strategic[2] perspectives on CSR, it predominantly acknowledges the value-enhancing capabilities of exceptional CSR initiatives (Malik, 2015). Some researchers suggest that socially responsible behaviour can have a negative financial effect on companies. On the other hand, various scholars argue that the potential benefits outweigh the additional costs that go along with CSR investments, both short-term and long-term[3] related. These benefits are suggested to positively influence a company's value.

Since researchers outline the value-maximizing benefits of CSR and executives have a major responsibility in implementing business strategies, CEO's should be incentivized to embed CSR into corporate policies to a satisfactory degree for both inside and outside stakeholders. Therefore, the association between CSR and executive remuneration has increasingly become a relevant topic in corporate governance literature.

In prior literature, the association between Corporate Social Responsibility and CEO compensation is widely examined, which produced diverging outcomes and thus can be

[2] The altruistic perspective illustrates firms to engage in CSR disregarding their self-interest (Fernández-Kranz and Santaló, 2010), The strategic perspective claims firms to engage in CSR as it should be profit-maximizing (McWilliams & Siegel, 2001).

[3] 'Short-term benefits' refers to direct positive impact (e.g. stock returns). 'Long-term benefits' refers to indirect positive impact (e.g. employee productivity, reputation)

exemplified as inconclusive. Some scholars found higher performance on social initiatives causes increased executive payments (Berrone & Gomez-Mija, 2009; Mahoney & Thorne, 2006; Ott, 2017; Hong, Li and Minor, 2015). Mahoney and Thorne (2006) researched the relation between the structure of CEO compensation and Corporate Social Responsibility concerning Canadian firms, where they included CSR as the dependent variable. They separated CSR in strengths and weaknesses. Their findings indicate a positive association between CSR weaknesses and base salary and a positive association between CSR strengths and executive bonus and stock options (Mahoney & Thorne, 2006). This is in line with the idea that CEOs should be incentivized and encouraged to invest in CSR. Moreover, Mahoney and Thorne (2005) researched the relationship between aspects of social practices and long-term incentives in an earlier examination. They found that CSR weaknesses and long-term compensation are adversely associated. They propose that long-term compensation may serve as a disincentive to make risky choices and encourages executives to 'play safe'.

Conversely, other scholars suggest that CEO compensation and corporate social performance are negatively related (Jian & Lee, 2015; Cai et al., 2011; Coombs & Gilley 2005; Stanwick & Stanwick, 2001) Cai et al. (2011) expect a negative association between CSR and executive remuneration, which is following the conflict-resolution hypothesis based on stakeholder theory. This hypothesis is substantiated in three ways. First, engaging in CSR initiatives decreases firm risk due to the reduction of conflicts between management and stakeholder, which in turn lowers executive remuneration. Besides, to reduce conflicts with stakeholders and temper the discussion of equality in compensation distributions, CEO's are assumed to accept lower wages in firms that are socially responsible compared to companies that act less socially. Thirdly, virtue ethics assumes that it is more prevailing to compensate executives who behave in a socially responsible way, more moderately. Using a lagged variable approach, Cai et al.'s (2011) findings indicate that increased levels of CSR indeed results in a reduction of both total and cash compensation for the next fiscal year. However, the data in this research might suffer from inadequacy, since the researchers used a consistent social performance measure for a long sample period, obtained from the KLD database.

Another hypothesis in the CSR literature is the overinvestment hypothesis[4], proposed by Barnea and Rubin (2010). The theory behind this hypothesis argues that managers will use overinvesting in CSR initiatives to enhance their reputation. Reputational improvements will subsequently increase executive remuneration due to enlarged future opportunities and

[4] based on agency theory (Jensen & Meckling, 1976)

bargaining power. On the other hand, Jian and Lee (2015) examined the overinvestment hypothesis differently by distinguishing between the value-creation and value-destruction hypothesis. Under these propositions, a firm can either over- or underinvest in CSR. Therefore, they separated CSR into abnormal and normal CSR in which abnormal CSR is specified as the deviation from the optimal investment level. Their findings demonstrate a positive association between normal CSR and CEO compensation and, in congruence with the overinvestment hypothesis, abnormal CSR results in lower executive payments (Jian and Lee, 2015).

Despite the mixed findings in the literature regarding executive remuneration and social performance, some academics argue that providing CEOs with straightforward incentives related to social performance can be an efficient mechanism to increase performance on corporate social responsibility (Hong, Li & Minor, 2015; Ott, 2017). Moreover, increased media attention is suggested to be positively related to CSR strengths (Zyglidopoulos, Carroll, Georgiadis & Siegel, 2012). I expect social and environmental initiatives to be more and more integrated into corporate policies over time due to increased awareness. Besides, extant literature shows the value-enhancing capabilities of social engagement (Malik, 2015). Therefore, I posit executive officers to be encouraged by boards of directors through monetary incentives, both long- and short-term focus. Thus, I predict the association between CSR performance and CEO compensation to be positive, holding other factors constant. This results in the following hypothesis:

Hypothesis 1: *The higher the CSR performance measure of a certain company, the higher is the CEO remuneration, after controlling for confounding effects.*

Moreover, over the last few decades, information transparency has extremely increased due to technological changes and implemented laws (e.g. SOX-act)[5]. A consequence of these changes in information availability is enlarged comparability of companies, which can be used as a strategic tool (Fernández-Kranz and Santaló, 2010) and can be defined as benchmarking. On the one hand, benchmarking increases the accountability of social actions. However, it does not consider the measurement complexity of CSR performance, thus it stays relatively subjective (Graafland, Eijffinger & Smid, 2004).

Fernández-Kranz and Santaló (2010) examined the relationship between CSR and industry competition and found a positive relationship between those concepts. They argue

[5] Sarbanes-Oxley (SOX) act is implemented in 2002 and is intended to protect shareholders from fraudulent information provided by firms concerning financial reporting.

that higher levels of competition in industries are associated with better social performance. Their findings indicate consistency with the strategic perspective of social behavior, which proposes that investing in CSR can be a strategic tool to maximize profits. Although Fernández-Kranz and Santaló (2010) assert that they are unable to fully reject the altruistic view, they suggest that the positive association found in this research demonstrates that CSR engagement is strategically determined.

A monitoring mechanism which can be considered by corporate boards to assess the performance a company is 'Relative performance evaluation[6]'. RPE can be defined as an evaluation of an individual company's financial performance relative to that of its industry peers (DeFond & Park, 1998). Existing literature shows inconclusive results on RPE. Some scholars find a positive association between industry performance and executive remuneration (Janakiraman, Lambert and Larcker, 1992; Albuquerque, 2009), while Aggarwaland & Samwick (1999) do not find an indication of RPE in their research. The absence of support for RPE in prior literature may be caused by not considering market competition (DeFond & Park, 1998). Nonetheless, DeFond & Park accentuate the practicality of RPE in their paper.

As far as I know, the mechanism of relative performance evaluation on social performance and its association with executive remuneration is not yet examined in prior research. This research extends the literature on CSR and helps to further explain the inconclusive findings on CSR and CEO compensation by considering a different mechanism.

I expect that when the CSR performance measure of a certain company exceeds the performance of its peers, it will positively influence the way executives are compensated. The rationale behind this is that boards of directors should be able to identify how a certain company is performing on social involvement compared to its competitors and subsequently include this in the settlement of compensations. Accordingly, this leads to the following hypothesis:

Hypothesis 2: *The higher the CSR performance measure of a certain company is to that of its peers, the higher is the CEO remuneration.*

The optimal social investment level can be identified through an alternative mechanism than proposed by Jian and Lee (2015). As earlier indicated, due to increased transparency of information, the evaluation of a certain company's performance can also be

[6] 'Relative Performance Evaluation' hereafter referred to as: 'RPE'

assessed relative to that of its peers. It is assumed that companies will constantly try to enhance their strategical choices to perform in the most efficient way. Therefore, I expect that RPE is used by companies to find the optimal social investment level by scrutinizing the social behaviour of their peers.

Under this assumption, I propose that the optimal CSR performance level converges to a certain industry-specific equilibrium. I expect that the value- creation and destruction hypotheses (Jian & Lee, 2015) apply for the use of RPE on CSR performance, which proposes that diverging from the industry-specific optimal equilibrium results from either over-investments or under-investments in CSR. I suggest that CSR performance is value-enhancing for a company if it converges to the equilibrium which is optimal for that specific industry. Adversely, it is suggested to be value-destructing if it diverges from the optimal equilibrium. One of the tasks of board members is to reward executives based on past performance and incentivize them for future performance, therefore it is likely that the board of directors will contemplate RPE based CSR performance in the payment consideration. Subsequently, this leads to the following hypothesis:

Hypothesis 3: *The closer the CSR performance measure of a certain company is to that of its peers, the higher the CEO remuneration.*

Furthermore, extant literature highlights the importance of corporate governance strength in the domain of social responsibility (Malik, 2015). The association between CSR and CEO compensation is expected to be stronger for firms with stronger governance structures since strong governance structures induce higher levels of monitoring which are suggested to results in less excess remuneration (Faleye, Hoitash & Hoitash, 2011).

According to Huang (2010), corporate governance strength depends on the dimensions 'Board Control' and 'Ownership'. Board control focusses on whether independent board members are present on the corporate board, while ownership is concerned with the nature of shareholders. Independent board members can enhance the quality of decision-making since they presumably have more diversified backgrounds, which likely contribute to a higher variety of perspectives on debatable matters. This may be favourable for a companies' performance regarding corporate social responsibility (Strandberg Consulting, 2005). Boards with a higher representation of independent directors indicate a higher board strength and show positive influences on CSR performance (Huang, 2010).

Moreover, governmental organizations and institutional companies are likely to invest in highly social performing companies (Beurden & Gössling, 2008). Huang's findings (2010)

illustrate that governmental ownership and institutional ownership have a positive effect on social performance. So, the higher the fraction of governmental and institutional ownership, the better the monitoring of boards regarding social behaviour.

Also, the balance of power within the board of directors is suggested to be an indicator of governance strength. If an executive is also chairman of the board, it may result in the extraction of resources and implies weaker governance structures (Core et al., 1999).

Jian and Lee (2015) found that the negative effect of abnormal CSR investments on CEO compensation is more pronounced for firms characterized by strong corporate governance. This implies that stronger boards are more capable of identifying value-destructing investments in CSR, which results in less CEO compensation. Besides, Arora and Dharwadkar (2011) found that both social strengths and concerns are negatively related to a company's governance structure effectiveness, this can be specified as a symmetrical effect. This effect is in line with the thought I described under hypothesis 3 concerning relative performance evaluation, which implies that boards should be able to identify whether CSR (des)investments are value-destructing.

Predominantly, corporate governance has been acknowledged to have a positive effect on social performance through its monitoring mechanism (Malik, 2015). Therefore, I propose that companies characterized by strong corporate governance are more aware and concerned to perform on corporate social responsibility and are more inclined to use monitoring mechanisms such as RPE. This subsequently should affect the way CEO's are compensated. Thus, I expect the relation suggested under hypothesis 2 to be positively influenced by corporate governance strength, which consequently results in the following hypothesis:

Hypothesis 4: *The positive effect of RPE based CSR performance on CEO remuneration is stronger for companies with strong corporate governance structures than for companies with weaker governance structures.*

III. Data and Methodology

1. Data Collection & Variable construction

Measurement Corporate Social Performance

To construct a social performance measure, I obtained data from the MSCI ESG KLD Stats database[7]. This data source provides positive and negative performance indicators[8] related to different aspects of Corporate Social Responsibility for publicly listed firms in the United States since 1991. Former research on CSR extensively used the KLD Stats database through its extensive availability of data, which covers over 3000 US-companies (Barnea & Rubin, 2010).

In Table 1, I provided an overview of the strengths and concerns components I used in this research. To construct a social performance measure, I included the following categories of CSR in the analysis: environment, community, human rights, diversity, employee relations, and product & quality. Following Jian & Lee (2015), I neglect the corporate governance data from the MSCI database. In prior literature, Riskmetrics (ISS) is predominantly used as the data source to capture corporate governance variables. Besides, to test Hypothesis 4, *'CSR performance'* and *'Corporate Governance Strength'* should be captured independently. The CSR performance measure of an individual company is constructed as the total strengths of the six categories minus the total concerns of the six categories.

However, some scholars argue that the variables in the MSCI database suffer from measurement inconsistencies or model specification problems (McWilliams & Siegel, 2000; Taneja et al., 2011; Chatterji, Levine & Toffel, 2009). The availability and measurement of the CSR indicators vary for each year. To overcome the issues concerning inconsistency in measurement, the sample period is divided into several short panels. For each panel, a time consistent measure of CSR will be used to estimate the regressions. Periods for the time consistent measures are determined through the availability of variables in the MSCI database[9], the construction is outlined in Table 1.

[7] Formerly Kinder, Lydenberg and Domini's (KLD's) Stats database, data obtained through Wharton Research Data Services (WRDS).
[8] These indicators are specified as binary indicators (1,0) for the dimensions: Environment, Community, Diversity, Employee Relations, Human Rights, Product & Quality, Corporate Governance and controversial industries
[9] I consulted the MSCI ESG KLD STATS: 1991-2014 DATA SETS Methodology Report to construct the time consistency measures of social performance (MSCI ESG Research Inc., 2015).

Table 1: Construction of time consistency social performance measures

Dimension	Variable	Period				
		1996-1999	2000-2009	2010-2011	2012-2013	2014-2016
Environment	**Strengths**					
	Environmental Opp.	x	x			
	Waste Management	x	x	x	x	x
	Packaging materials & waste	x	x			
	Climate change	x	x	x		x
	Envir. management systems			x		
	Water stress				x	x
	Weaknesses					
	Toxic spills & releases	x	x		x	x
	Hazardous Waste	x	x			
	Regulatory compliance	x	x	x	x	
	Biodiversity & Land use			x	x	x
	Climate change		x	x	x	x
	Supply chain management				x	x
	Water management				x	x
Community	**Strengths**					
	Innovative giving	x	x			
	Support for education	x	x			
	Support for housing	x	x			
	Charitable giving	x	x			
	non us charitable giving	x	x			
	Weaknesses					
	Community Impact	x	x	x	x	x
	Tax disputes	x	x			
	Investment controversies	x	x			
Diversity	**Strengths**					
	Board of directors - Gender	x	x		x	
	Woman/minority contracting	x	x			
	Promotion	x	x			
	Work life benefits	x	x			
	CEO is man or woman	x	x			
	Employment of the disabled	x	x			
	Gay and Lesbian policies	x	x			
	Weaknesses					
	Board of directors Gender			x	x	
	Board of directors Minorities				x	
	Workforce diversity	x	x	x	x	x
	Representation	x	x	x		

Human Capital	**Strengths**					
	Indigenous people relations		x			
	Human rights policies & initiatives	x	x	x		
	Weaknesses					
	Indigenous people's relations		x			
	Freedom of expression/censorship				x	x
	Human rights violations				x	x
	Labor rights concerns		x			
Employee Relations	**Strengths**					
	Union relations	x	x			
	Employee health & safety			x	x	x
	Cash profit sharing	x	x			
	Retirement benefits	x	x			
	Weaknesses					
	Union relations concerns	x	x		x	x
	Employee health & safety	x	x	x	x	x
	supply chain			x	x	x
	Child labor				x	x
	Workforce reductions	x	x			
	Labor management relations					x
	Retirement benefits concerns	x	x			
Product & Quality	**Strengths**					
	Product Quality & safety	x	x	x		
	R&D / Innovation	x	x			
	Social opportunities	x	x			
	Weaknesses					
	Product Quality & Safety	x	x	x		x
	Marketing & Advertising	x	x		x	x
	Anticompetitive practices	x	x	x	x	x

Notes: This table presents the construction of the time consistent measures of social performance.

To test Hypothesis 2, an industry average social performance measure is required to calculate the difference between an individual company's social performance and that of its peers. The industry average CSP measure is obtained and computed through MSCI based on 2-digit SIC codes. 2-digit SIC codes are broadly used by other researchers to specify a company's industry. The RPE based CSP measure is calculated as follows:

$$RPE\ based\ CSP_{i,t} = Individual\ Company\ CSP_{i,t} - Industry\ Average\ CSP_{i,t}$$

Concerning the third hypothesis, the absolute value of relative performance evaluation (RPE) is included in this research as the independent variable which captures the deviation from the optimal social investment level of an industry. This is the absolute value of the difference between an individual companies CSR performance and its industry mean CSR performance.

$$Absolute\ value\ RPE\ CSP_{i,t} = |Individual\ Company\ CSP_{i,t} - Industry\ Average\ CSP_{i,t}|$$

The social performance measures are included in the analysis in two ways. First, as a company's social performance in the fiscal year an executive is rewarded. Secondly as a company's CSR performance in the year prior to the year of CEO compensation. This is already proposed by Deckop, Merriman & Gupta (2006) and by Mahoney & Thorn (2006). The rationale behind this is that executive pay is based on the social performance of the year prior to the payment. So, that there is a lag between identifying the CSP industry equilibrium performance and executive compensation.

Measurement CEO compensation

Executive compensation data is gathered from the Compustat – Execucomp database. Execucomp is the most prominent CEO remuneration data source and is widely used by academics in prior studies. The CEO compensation variable is included as the main independent variable in this research and is divided into two different components, so it might be possible to draw inferences about the effect of CSR on pay structures. Mahoney & Thorne (2006) outline the importance of the composition of incentive plans for CEOs since it might encourage executives to embed CSR behaviour into company policies.

Therefore, following Cai et al. (2011), compensation is covered by two components in this research: total compensation[10] and cash compensation[11]. I took the natural logarithm of the remuneration variables to approximate a normal distribution.

Companies that are operating in financial- or regulated industries[12] are eliminated from the sample (Jian & Lee, 2015), since these industries tend to have extreme compensations. Besides, social performance measures might be biased for regulated companies since they might be 'forced' by governments to embed social behaviour into their policies. Observations that contain CEO turnovers during the fiscal year are also excluded from the analysis. Moreover, I deleted firm-year observations where a CEO switch was present in the given fiscal year of executive remuneration. So, if a CEO did not serve the executive position at a certain company for the entire fiscal year, observations were dropped from the dataset.

Other Control Variables

In this research, I included control variables that could influence the dependent variable. Therefore, these influential factors should be held constant. Following prior executive remuneration research, I obtained variables to control for concerning firm characteristics, governance characteristics and CEO characteristics.

Firstly, firm characteristic data is obtained through the Compustat database and includes the following company-specific variables: Return on Assets (ROA), Investment Opportunities, Leverage, Industry Concentration and Firm Size. Additionally, the CRSP database is used to collect data on stock returns for firms in the sample period. ROA and stock return are included to control for financial performance. Better firm performance is suggested to be positively associated with CEO remuneration. (Core et al., 1999).

Moreover, as prior literature indicates, companies with higher growth potentials are assumed to be more complex to manage and are therefore expected to demand CEOs of higher quality. Electing high-quality executives requires firms to pay higher compensations (Cai et al., 2011; Smith & Watts, 1992). In this research, I covered Investment opportunities as the average 3-year market-to-book ratio[13] for a company in a specific year. Furthermore,

[10] Total Compensation is measured as: Salary + Bonus + Other annual compensation + Total value of restricted stocks granted + total value of stock options granted (Black-Scholes (1973)) + Long term incentive Payouts and all other total compensation.
[11] Cash Compensation is measured as: Salary + Bonus
[12] Financial industries cover SIC codes: 6000-6999, regulated industries cover SIC codes: 4900-4999.
[13] Following Core et al. (1999), which proposed a 5-year average, I include a 3-year average to prevent losing too many observations. See Appendix II for the calculation of this variable.

according to Holmstrom (1982) & DeFond & Park (1999), relative performance evaluation is more likely to be useful in competitive industries than in less competitive industries. To control for competition, I computed the Herfindahl Hirschman Index (HHI)[14] based on 2-digit sic codes for every firm year observation in the sample. To mitigate biased measures of HHI, observations are deleted from the sample if the number of observations for industry classification is less than 4 since the absence of observations for a specific 2-digit industry classification can highly overestimate the HHI measure.

As a proxy for firm size, I incorporated the natural logarithm of total sales to control for in the regression analysis. In the corporate finance literature, firm size is largely acknowledged as an influential factor on the dependent variable (Dang, Li & Yang, 2018). Larger firms are assumed to be more complex and have more resources available to invest, therefore they attract executives with better reputations or higher potentials.

Secondly, CEO characteristic variables are gathered from the Execucomp database. I control for prior executive experience by including the variables Tenure and Age. I expect prior experience of CEOs is pronounced in higher skills and better positions of negotiation which has a positive influence on remuneration (Hogan & McPheters, 1980).

Thirdly, I constructed corporate governance variables to capture board strength. Corporate governance data is obtained through Institutional Shareholder Services (ISS) data[15]. This database provides information on director characteristics since 1996. The following governance variables are included in this research: CEO duality, Board Independence, Insider Ownership and Institutional Ownership. CEO duality is a binary variable which indicates whether a CEO is also chairman of the board. Furthermore, I control for governance strength by including 'Board Independence' as the percentage of independent directors serving on the corporate board of a certain company and 'Institutional Ownership' as the percentage of total stocks held by institutional organizations. Institutional ownership data is gathered from the WRDS Thomson Reuters Stock Ownership database. As a final control variable concerning corporate governance. 'Inside Ownership' is included as a measure of total shares held by the CEO, directors on the board and other important management functions. Concerning the two ownership variables, I replaced observations that exceeded 100% ownership by 100%, since exceeding the maximum ownership value is impossible in practice. This issue is presumably attributable to the fact that beneficial ownership and direct ownership is mixed up. To test the fourth hypothesis, I constructed a

[14] The HHI measure displays the concentration of a market, which is commonly used to indicate competitiveness. See Appendix II for the calculation of this variable.
[15] Institutional Shareholder Services (ISS), formerly RiskMetrics, data obtained through WRDS.

corporate governance indicator[16], which indicates the strength of board structures of a company.

After merging all the datasets, the final sample consists of 11,027 firm-year observations for 1,584 unique companies for the period 1996 - 2016. Remarkably, after 2003, the availability of data drastically increased. This is attributable to the extension of the Universe of companies in the database. The final sample has an unbalanced panel data structure.

2. Methodology

The proposed method to test the relationship between social behaviour and executive remuneration is a multiple regression including several control variables. These variables are assumed as important determinants of CEO compensation and are based on findings in prior literature. The panel data structure is advantageous as it captures differences between firms over time and it accounts for individual specific heterogeneity. To test the first hypothesis, the following empirical model (1) is used, where I expect the coefficients β_1 and β_2 to be positive for both cash total compensation:

$$\begin{aligned}\log\left(CEO\ Compensation_{Total,cash\ i,t}\right) &= \alpha + \beta_1 * Individual\ Company\ CSP_{i,t} + \beta_2 \\ &* Individual\ Company\ CSP_{i,t-1} + \beta_3 * \log\left(Firmsize_{i,t}\right) + \beta_4 * ROA_{i,t} + \beta_5 \\ &* StockReturn_{i,t} + \beta_6 * InvestmentOpportunity_{i,t} + \beta_7 \\ &* IndustryConcentration_{i,t} + \beta_8 * Leverage_{i,t} + \beta_9 * Tenure_{i,t} + \beta_{10} \\ &* Age_{i,t} + \beta_{11} * CEOduality_{i,t} + \beta_{12} * BoardIndependence_{i,t} + \beta_{13} \\ &* InsideOwnership_{i,t} + \beta_{14} * InstitutionalOwnerhip_{i,t} + \delta_t + \varepsilon_{i,t}\end{aligned}$$

Appendix I & II provide a detailed overview of the calculations and definitions of the variables used in the analysis.

The model proposed to predict the second hypothesis is slightly different than the model above. This model (2) includes the average social performance of the peers of a certain company and therefore captures RPE. Under hypothesis 2, the coefficients for β_1 and β_2 are predicted to be positive. Additionally, this model forms the basis to test the fourth hypothesis, in which I excluded the governance controls and separated the sample in strong and weak governance subsamples. Under this hypothesis I expect the effects of β_1 and β_2

[16] See Appendix II for the calculation of the corporate governance indicator.

to be more pronounced for the strong governance subsample compared to those for the weak governance subsample.

$$\log\left(CEO\ Compensation_{Total,cash\ i,t}\right) = \alpha + \beta_1 * RPE\ based\ CSP_{i,t} + \beta_2 * RPE\ based\ CSP_{i,t-1} + \beta_3 * \log\left(Firmsize_{i,t}\right) + \beta_4 * ROA_{i,t} + \beta_5 * StockReturn_{i,t} + \beta_6 * InvestmentOpportunity_{i,t} + \beta_7 * IndustryConcentration_{i,t} + \beta_8 * Leverage_{i,t} + \beta_9 * Tenure_{i,t} + \beta_{10} * Age_{i,t} + \beta_{11} * CEOduality_{i,t} + \beta_{12} * BoardIndependence_{i,t} + \beta_{13} * InsideOwnership_{i,t} + \beta_{14} * InstitutionalOwnerhip_{i,t} + \delta_t + \varepsilon_{i,t}$$

To test the third and the fourth hypothesis, the empirical model (3) below is proposed. For these hypotheses, the absolute value of the difference between an individual company's social behaviour and that of its industry is included, which captures relative performance evaluation. I predict the coefficients of β_1 and β_2 to be negative.

$$\log\left(CEO\ Compensation_{Total,cash\ i,t}\right) = \alpha + \beta_1 * |RPE\ CSP_{i,t}| + \beta_2 * |RPE\ CSP_{i,t-1}| + \beta_3 * \log\left(Firmsize_{i,t}\right) + \beta_4 * ROA_{i,t} + \beta_5 * StockReturn_{i,t} + \beta_6 * InvestmentOpportunity_{i,t} + \beta_7 * IndustryConcentration_{i,t} + \beta_8 * Leverage_{i,t} + \beta_9 * Tenure_{i,t} + \beta_{10} * Age_{i,t} + \beta_{11} * CEOduality_{i,t} + \beta_{12} * BoardIndependence_{i,t} + \beta_{13} * InsideOwnership_{i,t} + \beta_{14} * InstitutionalOwnerhip_{i,t}\ \delta_t + \varepsilon_{i,t}$$

To the best of my knowledge, this is the first study that considers relative performance evaluation as a mechanism that is used by corporate boards when compensating executives based on social performance. Besides, as already mentioned earlier in this paper, prior literature acknowledges the data issues concerning the MSCI KLD database. Therefore, in contrast to other literature, I divide the sample period into several short panels including time consistency social performance measures, to overcome the issues regarding measurement inconsistency through MSCI. Additionally, compared to the literature, I use the most recent data which may result in different results as I expect CSR to be embedded more deeply inside corporate strategies in more recent years. However, the research design will be largely similar to that of prior research on the association between CSR and executive remuneration. The intention of this research is explaining a correlation between CSR performance relative to competitors and CEO performance. The results might be of interest to executives, financials, boards of directors determining executive pay and societal stakeholders.

IV. Empirical Results

1. Univariate Analysis

Table 2 presents descriptive statistics for the sample data. The mean and standard deviation of total compensation for a CEO are respectively 6.2 million and 6.486 million US dollars. The maximum statistic suggests extreme values concerning compensation variables ($47.190 million & $6.442 million), which illustrates the right skewness of the compensation data in the sample. The table shows that approximately only 20% of total compensation is covered by cash compensation, which indicates that executive remuneration largely contains long term incentives. Skewness is also pointed out in the Firm Size statistics since the maximum sales revenue of $482.154 million can be labelled as an extreme value given a mean and standard deviation of respectively $8.422 million and $25.375 million. The mean social performance measure is negative with a value of -0,141. This might be attributable to the composition of CSP measures, some of the time consistent variables are

Table 2: Descriptive statistics

	N	Mean	Min	Median	Max	SD
Compensation variables						
Total Compensation (`,000)	11,027	6,200	366	4,205	47,190	6,486
Cash Compensation (`,000)	11,027	1,263	300	978	6,442	1,015
Social Performance measures						
CSP	11,027	-0.141	-9.000	0.000	11.000	1.880
Industry Mean CSP	11,027	-0.304	-4.200	-0.250	3.000	0.765
RPE based CSP	11,027	0.163	-8.111	0.000	11.326	1.710
|RPE CSP|	11,027	1.192	0.000	0.857	11.326	1.237
Firm Characteristics						
Firm Size (`,000)	11,027	8,422	3.181	2,016	482,154	25,375
ROA	11,027	0.060	-0.133	0.060	0.212	0.066
Stock Return	11,027	0.101	-0.972	0.081	1.174	0.376
Investment Opportunity	11,027	3.210	-0.394	2.563	9.276	2.170
Leverage	11,027	0.505	0.031	0.513	1.150	0.203
IndustryConcentration(HHI)	11,027	0.065	0.020	0.046	0.211	0.048
CEO Characteristics						
Age (years)	11,027	56.32	32	56	96	7.038
Tenure (years)	11,027	8.102	1	6	61	7.512
Governance variables						
CEO Duality [1,0]	11,027	0.446	0	0	1	0.497
Board Independence (%)	11,027	74.738	0.000	77.778	100.000	14.175
Inside Ownership (%)	11,027	6.217	0.003	2.340	31.901	8.642
Institutional Ownership (%)	11,027	78.164	31.292	80.853	100.000	16.535

Notes: This table presents the summary statistics for the full sample data. The sample data consists of 11,027 firm-year observations for the period 1996 – 2016.

Table 3: Spearman Correlation Matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Log(total compensation)	1.000														
2	Log(cash compensation)	0.616***	1.000													
3	CSP	0.044***	0.063***	1.000												
6	Log(Firm Size)	0.638***	0.593***	0.051***	1.000											
7	ROA	0.125***	0.129***	0.092***	0.101***	1.000										
8	Stock Return	0.024**	0.028**	-0.036***	-0.031***	0.107***	1.000									
9	Investment Opportunity	0.154***	0.072***	0.203***	0.061***	0.359***	-0.107***	1.000								
10	Leverage	0.306***	0.313***	0.006	0.479***	-0.158***	-0.016	0.070***	1.000							
11	Industry Concentration	-0.036***	0.027***	-0.139***	0.156***	0.017*	-0.002	-0.066***	0.114***	1.000						
12	Tenure	-0.095***	-0.042***	-0.050***	-0.134***	0.009	-0.003	-0.004	-0.132***	-0.003	1.000					
13	Age	0.045***	0.141***	-0.051***	0.086***	0.002	0.002	-0.075***	0.047***	0.056***	0.430***	1.000				
14	CEO duality	0.112***	0.115***	0.000	0.157***	-0.023**	-0.021**	0.030***	0.122***	0.014	0.243***	0.207***	1.000			
15	Board Independence	0.257***	0.013	-0.033***	0.171***	-0.005	0.026***	-0.031***	0.157***	-0.018*	-0.121***	-0.037***	0.094***	1.000		
16	Inside Ownership	-0.277***	-0.127***	-0.048***	-0.211***	0.009	0.018*	-0.020**	-0.131***	0.076***	0.223***	0.061***	-0.129***	-0.397***	1.000	
17	Institutional Ownership	0.073***	-0.162***	-0.106***	-0.136***	-0.035***	0.028**	-0.095***	-0.025***	0.054***	-0.053***	-0.073***	-0.113***	0.342***	-0.325***	1.000

Notes: This table presents the correlation coefficients of the variables in the sample data. The *s are indicators for statistical significance. *,** and *** represent respectively 10, 5 and 1% significance levels.

measured containing more social concern than strength variables. Furthermore, the companies in the sample are relatively profitable given the positive mean statistics for return on assets (0.060), investment opportunity (3.210) and stock return (0.101). The average age of a CEO is approximately 56 years and the average tenure 8 years.

Table 3 shows the Spearman Correlation Matrix for the variables concerning executive compensation, social performance, CEO characteristics, firm characteristics, and corporate governance. In this table, certain outcomes are remarkable. Firm size and Leverage are highly positively correlated with both total and cash compensation, this is consistent with the expectation that more complex firms pay their CEO's more. Besides, the financial performance measures are positively associated with CEO compensation as expected.

Furthermore, tenure is surprisingly negatively correlated with executive remuneration significant at a 1% level. One should expect the higher a CEO serves, the higher the compensation. Also, Board Independence and Institutional Ownership are positively associated with total compensation which is not in line with the expectation that higher levels of independence and institutional ownership will cause lower value extraction through rents. Although it appears that some variables are highly correlated, the variance inflation factor (VIF) shows that the variables do not suffer from issues concerning multicollinearity.

Table 3: Difference T-test			
	Above median Diff CSP	Below median Diff CSP	t-statistic
	mean	mean	
Total Compensation	5607.447	5119.452	(-1.913)*
Cash Compensation	1152.907	1104.038	(-1.289)
CSP	0.600	-1.066	(-31.511)****
Industry Mean CSP	-0.255	-0.269	(-0.488)
RPE CSP	1.088	0.964	(-2.978)***
Difference in CSP	0.855	-0.797	(-38.064)****
Firm Size	5892.111	5704.101	(-0.211)
ROA	0.056	0.051	(-2.062)**
Stock Return	0.102	0.108	(0.643)
Investment Opportunity	3.321	2.990	(-3.421)****
Leverage	0.500	0.488	(-1.157)
Industry Concentration	0.065	0.063	(-0.711)
CEO Duality	0.417	0.405	(-0.642)
Board Independence (%)	74.037	73.300	(-1.205)
Inside Ownership (%)	6.530	7.105	(1.400)
Institutional Ownership (%)	78.011	78.943	(1.193)
N	794	793	1.587

*Notes: This table provides an overview of the difference test between subsamples in social performance. The sample is separated in an above-median Diff CSP and a below-median Diff CSP sample. The Diff CSP is represented by the difference between a company's social performance measure relative to the industry average performance. The *'s are indicators for statistical significance. * ,** ,*** ,**** represent respectively 10, 5, 1 and 0.1% significance levels.*

Subsequently, I separated the sample in below- and above-median social performing companies relative to their peers, to examine whether the means of the compensation variables significantly differ between these subsamples. Since CSP is not consequently measured throughout the full sample period, by means of the time consistency measures, it is not suitable to split the sample by this variable. Although it is not a perfect measure to separate the sample either, I use the RPE based CSP measure to split the sample, despite it has extremer potential values for some of the time consistency periods. The sample is therefore separated in companies that perform better than their industry average level versus firms that perform worse or inherent to the industry mean. As the sample data includes multiple firm observations which are highly correlated, I constructed single firm observations by collapsing the data into variable averages for multiple firm observations.

In Table 4, I reported the results of the difference test. Means of the compensation variables appear to be both higher for the highly socially performing firms, which is in support of the hypotheses. Although this finding is statistically significant at the 10% level for the total compensation variable, it is not significant for cash compensation. Additionally, companies in the above-median subsample have significantly higher ROA and Investment Opportunities, respectively at the 5% and 0.1% level, which likely positively influence the payment level of executives. Surprisingly, the means of Stock Return, Inside Ownership and

Institutional Ownership are higher for the below-median sample, as one should expect this to be the opposite. Nevertheless, the t-statistics concerning these variables show no statistical significance.

2. Multivariate Analysis

Regressions of time consistent measures of CSR performance on CEO compensation

As outlined in the methodology section, I separated the total sample into several short panels to regress time consistent measures of social behaviour on executive remuneration. I included an overview of the regression results in Table 4, this table presents the findings based on the first hypothesis. The estimation models on different time consistent measures produced considerably diverging outcomes. The coefficients show substantial inconsistencies between the periods in terms of sign and demonstrate the absence of statistical significance in almost all the outcomes. The inconsistency in sign and significance also appeared in the analysis concerning Hypothesis 2 and Hypothesis 3, consequently, I solely included the result table for the first hypothesis in the appendix to keep the analysis concise.

Additional to the time consistent measures presented in Appendix I, I constructed a social performance variable for the full sample period based on 8 MSCI variables[17]. These variables possessed (nearly) complete availability of data throughout the sample period. Besides, I separated the sample in a before and after 2010 samples and created separate CSR measures[18]. However, after running the regressions I found inconsistent and insignificant results, those results are not presented in this paper. Therefore, I argue that the MSCI KLD database is not suitable for having a time consistent measure of social performance.

In the research of Cai et al. (2011), a lagged variable approach is used. They included the social performance and financial performance of the year preceding the fiscal year compensation is awarded in the model as explanatory variables, to find an association between CSR and executive compensation. With this model, they found evidence of a negative relation between lagged social performance and remuneration. In the preceding tests, I solely added the lagged variable of corporate social performance. Therefore, following the research of Cai et al., I estimated the regression models containing lagged

[17] The 8 variable time consistent CSP measure for the full sample period consists of the following CSR strengths (see Table 1): *Waste Management, Climate Change* and *Board of directors – Gender*. And the following weaknesses: *Community impact, Workforce Diversity, Employee Health & Safety, Marketing & Advertising* and *Anticompetitive practices*. Observations were deleted from the sample data if the variables contain missing values.
[18] See Table 1 for the variables used for the before 2010 and after 2009 CSR measures.

Table 4: Regressions of time consistent measures of CSP on CEO compensation

	(1) log totcomp	(2) log_cashcom	(3) log_totcomp	(4) log_cashcom	(5) log_totcomp	(6) log_cashcom	(7) log_totcomp	(8) log_cashcom	(9) log_totcomp	(10) log_cashcom
CSP	0.0154	0.0216	-0.0033	-0.0131*	0.0340**	0.0155	0.0111	0.0040	0.0420*	-0.0031
	(0.508)	(1.207)	(-0.289)	(-1.792)	(2.104)	(1.267)	(0.587)	(0.255)	(1.892)	(-0.174)
CSP (t-1)	-0.0416	-0.0239	-0.0112	0.0040	-0.0167	-0.0164**	0.0264*	0.0048	-0.0102	-0.0141
	(-1.298)	(-1.141)	(-0.928)	(0.526)	(-1.632)	(-2.202)	(1.780)	(0.473)	(-0.555)	(-1.111)
Log (Firmsize)	0.3760****	0.2722****	0.4142****	0.2487****	0.4009****	0.2036****	0.3856****	0.1968****	0.3458****	0.1655****
	(8.753)	(9.760)	(23.152)	(25.513)	(18.419)	(12.477)	(16.347)	(11.470)	(15.665)	(10.400)
ROA	-0.8934	0.6764	0.4899*	0.9720****	0.3298	0.3323	0.2121	0.4847	-0.3738	-0.0099
	(-1.164)	(1.407)	(1.776)	(5.405)	(0.745)	(0.841)	(0.391)	(1.320)	(-0.790)	(-0.036)
Stock Return	0.3618****	0.2459****	0.1297****	0.1055****	0.1547***	0.0115	0.2177***	0.0107	0.0964	-0.0534
	(3.949)	(4.237)	(3.909)	(5.323)	(2.630)	(0.238)	(2.872)	(0.201)	(1.517)	(-1.374)
Investment Opp.	0.1135****	0.0238	0.0622****	0.0002	0.0127	-0.0173	0.0242	-0.0176	0.0333**	-0.0058
	(4.769)	(1.477)	(6.070)	(0.037)	(0.811)	(-1.303)	(1.389)	(-1.508)	(2.011)	(-0.641)
Leverage	-0.1837	0.2050	-0.1216	0.2233****	0.1405	0.0986	0.0107	0.1267	0.1585	0.1452*
	(-0.545)	(0.925)	(-1.116)	(3.411)	(1.086)	(1.024)	(0.082)	(1.295)	(1.155)	(1.846)
IndustryConcentration	-2.6228**	-0.3891	-3.0855****	-1.1276****	-2.057****	-0.1831	-1.6113***	-0.5689	-2.716****	-0.4412
	(-1.996)	(-0.428)	(-7.243)	(-4.084)	(-4.778)	(-0.539)	(-3.302)	(-1.555)	(-6.021)	(-1.315)
Tenure	-0.0033	0.0004	0.0021	0.0015	-0.0014	-0.0015	-0.0091	-0.0023	0.0008	-0.0013
	(-0.384)	(0.073)	(0.583)	(0.586)	(-0.289)	(-0.422)	(-1.638)	(-0.601)	(0.138)	(-0.342)
Age	0.0073	0.0072	0.0002	0.0070****	0.0015	0.0064**	0.0048	0.0089***	0.0087*	0.0133****
	(0.825)	(1.516)	(0.083)	(3.557)	(0.409)	(2.271)	(1.101)	(2.743)	(1.922)	(3.716)
_cons	4.0953****	4.1305****	4.4109****	4.5980****	4.3925****	4.9602****	4.3905****	4.8233****	4.6506****	4.8712****
	(9.426)	(14.466)	(17.493)	(29.835)	(12.625)	(19.727)	(9.474)	(17.294)	(10.124)	(18.888)
N	560	560	4238	4238	1194	1194	882	882	1300	1300
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	0.411	0.439	0.463	0.541	0.576	0.414	0.565	0.387	0.503	0.385

Notes: t statistics in parentheses. Corporate governance variables are not presented in the table to keep the table concise. Standard errors are clustered by firm to control for heteroskedasticity. Model (1) & (2) are for the period 1996-1999, model (3) & (4) are for the period 2000 – 2009, model (5) & (6) are for the period 2010-2011, model (7) & (8) are for the period 2012-2013, model (9) & (10) are for the period 2014 – 2016 * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

measures of corporate social performance and financial performance. Also, the use of lagged variables mitigates endogeneity issues regarding reverse causality. Using the lagged variable approach, I found inconsistent and insignificant results. The results of these tests are not reported in this paper.

Static Regressions of CSP on executive remuneration

Whereas I argue that the MSCI database suffers from inadequacy concerning a time consistent social performance measures, I attempt to answer the hypotheses by performing static regressions and to analyse the differences in years concerning the regression models. This is formalized by analysing each year in the sample separately. The findings point out that the coefficient of the CSP measure becomes more significant over time for the first and second hypotheses. Therefore, I examined and described the results of the most recent year in the sample data. In Table 10, I incorporated a summary of the static regression results for each year in terms of significance and sign, model (2) of Table 5, 6 & 7 form the basis of this table.

Table 5 presents the static regression results of executive remuneration on corporate social performance for the fiscal year 2016, which is the last year of my sample data. For each dependent variable, I estimated the model in three different ways. In model (1), I ran the regression excluding governance variables and the lagged variable of CSP. In the second model, I added variables concerning corporate governance and in model (3) I included the lagged measure of social performance in addition to the second model. In congruence with the first hypothesis, the coefficients in model (1), (2) and (3) suggest a positive association between corporate social performance and CEO compensation. In other words, after controlling for firm characteristics, CEO characteristics and governance variables, executives receive higher total compensations if the firm performs better on CSR initiatives. These findings are significant at the % level for the second and third models. The coefficient in model (2) shows a 1 unit increase in a firm's social performance will cause compensation to increase by 5.09%. This effect can be described as highly economically significant. The adjusted R-squared indicates that model (2) explains 51.6% of the variance in total compensation. Anyhow, since I performed static regressions and presented the results of the year 2016, the number of observations is relatively low relative to the full sample. More observations would dramatically increase the power of the tests, therefore the need for a consistent and generally accepted measure of corporate social performance is considerably large.

Table 5: Regression of CSR performance on Executive Compensation for the year 2016 (H1).

	(1) log_totcomp	(2) log_totcomp	(3) log_totcomp	(4) log_cashcomp	(5) log_cashcomp	(6) log_cashcomp
CSP	0.0484*	0.0509*	0.0832**	-0.0084	-0.0077	0.0199
	(1.811)	(1.954)	(2.061)	(-0.562)	(-0.514)	(0.875)
CSP(t-1)			-0.0477			-0.0368*
			(-1.265)			(-1.729)
Log(FirmSize)	0.3564****	0.3602****	0.3514****	0.1753****	0.1684****	0.1607****
	(19.877)	(18.864)	(16.368)	(17.474)	(15.328)	(13.257)
ROA	-0.5153	-0.3730	-0.1128	-0.0198	0.0192	0.1023
	(-1.255)	(-0.929)	(-0.248)	(-0.086)	(0.083)	(0.398)
Stock Return	-0.0133	-0.0143	0.0061	-0.0372	-0.0448	-0.0483
	(-0.171)	(-0.187)	(0.069)	(-0.858)	(-1.019)	(-0.968)
InvestmentOpportunity	0.0187*	0.0217**	0.0254**	-0.0040	-0.0053	-0.0065
	(1.671)	(1.975)	(2.025)	(-0.630)	(-0.834)	(-0.913)
Leverage	0.2465*	0.1504	0.1003	0.1180*	0.1208*	0.1574*
	(1.938)	(1.206)	(0.696)	(1.658)	(1.682)	(1.934)
Industry Concentration	-3.025****	-2.965****	-3.025****	-0.3773	-0.3754	-0.4460*
	(-7.188)	(-7.143)	(-6.386)	(-1.602)	(-1.572)	(-1.668)
Tenure	0.0001	0.0006	-0.0023	0.0010	-0.0005	-0.0015
	(0.015)	(0.131)	(-0.457)	(0.413)	(-0.184)	(-0.519)
Age	0.0083**	0.0071*	0.0108**	0.0099****	0.0089****	0.0113****
	(2.136)	(1.841)	(2.463)	(4.576)	(3.973)	(4.563)
CEO Duality		0.0934*	0.0403		0.0595*	0.0383
		(1.748)	(0.689)		(1.936)	(1.161)
Board Independence		0.0067***	0.0073**		0.0009	0.0006
		(2.615)	(2.536)		(0.605)	(0.356)
Inside Ownership		-0.0029	-0.0064		0.0003	0.0002
		(-0.745)	(-1.424)		(0.113)	(0.094)
InstitutionalOwnership		0.0070****	0.0072***		-0.0007	-0.0003
		(3.421)	(3.091)		(-0.591)	(-0.263)
Constant	5.3238****	4.2252****	4.1047****	4.8582****	4.9515****	4.8736****
	(21.993)	(11.171)	(9.660)	(35.869)	(22.760)	(20.318)
N	666	666	546	666	666	546
R^2	0.495	0.526	0.516	0.428	0.433	0.429
adj. R^2	0.488	0.516	0.504	0.420	0.421	0.414
rmse	0.5955	0.5788	0.5876	0.3332	0.3329	0.3317

Notes: t statistics in parentheses. ** p<0.10, ** p<0.05, *** p<0.01, **** p<0.001*

When I include cash compensation in the regression analysis as the dependent variable, I find differences both in sign and significance. Model (4) and (5) suggest that CSP and cash compensation are negatively associated. Nonetheless, the coefficients in the three models are all statistically insignificant.

Moreover, as expected, the coefficients of the variables 'Firm Size' and 'Age' appear to be positively related to the dependent variable and are highly significant. Additionally, the

coefficients of Industry Concentration appears to be highly negatively statistically significant in the first three models. As expected, this indicates that higher competition in industries results in higher compensations for executives. Surprisingly, the results on the variables 'Institutional Ownership' and 'Board Independence' are significantly positive in model (2) and (3). I would predict higher levels of those variables to indicate stronger governance structures and therefore should result in less value extraction through rents.

In Table 6, the results are presented concerning the second hypothesis. In this regression, the difference between an individual company's social performance and that of its peers is covered as the independent variable. The estimated models in this table are the same as those used to test Hypothesis 1, including firm characteristics, governance variables and CEO characteristics. The coefficients of the total compensation models suggest the association between executive remuneration and RPE based social performance to be positive. The findings for model (2) and (3) are statistically significant at the 5% level. Specifically, these results demonstrate that the better the social performance of a certain company relative to that of its peers, the higher the total compensation for executives. An increase of 1 unit in the difference of corporate social performance between a company and its industry implies an increase in executive compensation of 5.77%. Hence, the results in model (1), (2) and (3) appear to be highly economically significant and are supportive to the second hypothesis. These findings suggest that relative performance evaluation is used in corporate social responsibility since the performance of competitors is considered by providing executives with compensation.

Again, the coefficients of the models including cash compensation as the dependent variable are all insignificant, comparable to the findings under Hypothesis 1. Also, in contrast to the second hypothesis, the signs of model (4) and (5) are negative.

In Table 7, the effect of the absolute value of RPE based CSP on executive remuneration is examined. Following Hypothesis 3, I expect the signs of the coefficients to be negative, since boards of directors are expected to compensate CEOs for identifying and behave towards the industry optimal CSR level. In other words, the closer a company's social performance compared to the industry specific performance equilibrium, the higher the payments. However, the signs of the coefficients of the absolute value of RPE based CSP are mainly positive. The models that estimate the effect of the absolute value of RPE based social performance on total compensation are insignificant, while model (4) and (5) demonstrate significant outcomes.

Table 6: Regression of RPE based social performance on Executive Compensation for the year 2016 (H2).

	(1) log_totcomp	(2) log_totcomp	(3) log_totcomp	(4) log_cashcom	(5) log_cashcom	(6) log_cashcom
RPE CSP	0.0533*	0.0577**	0.0867**	-0.0053	-0.0040	0.0127
	(1.932)	(2.150)	(2.082)	(-0.342)	(-0.257)	(0.538)
RPE CSP (t-1)			-0.0454			-0.0219
			(-1.155)			(-0.984)
Log(Firm Size)	0.3558****	0.3593****	0.3525****	0.1753****	0.1683****	0.1627****
	(19.839)	(18.812)	(16.534)	(17.458)	(15.308)	(13.489)
ROA	-0.5053	-0.3626	-0.1567	-0.0245	0.0142	0.0379
	(-1.232)	(-0.905)	(-0.349)	(-0.107)	(0.062)	(0.149)
Stock Return	-0.0118	-0.0127	0.0135	-0.0367	-0.0442	-0.0414
	(-0.152)	(-0.166)	(0.153)	(-0.845)	(-1.005)	(-0.831)
Investment Opportunity	0.0184	0.0213*	0.0250**	-0.0040	-0.0053	-0.0067
	(1.644)	(1.940)	(1.990)	(-0.631)	(-0.838)	(-0.939)
Leverage	0.2422*	0.1457	0.0892	0.1186*	0.1213*	0.1508*
	(1.905)	(1.168)	(0.620)	(1.667)	(1.689)	(1.853)
Industry Concentration	-3.0264****	-2.9621****	-3.0166****	-0.3707	-0.3681	-0.4405
	(-7.200)	(-7.146)	(-6.370)	(-1.575)	(-1.543)	(-1.644)
Tenure	0.0001	0.0006	-0.0024	0.0011	-0.0004	-0.0015
	(0.027)	(0.144)	(-0.479)	(0.437)	(-0.159)	(-0.528)
Age	0.0083**	0.0071*	0.0109**	0.0099****	0.0089****	0.0114****
	(2.134)	(1.832)	(2.497)	(4.576)	(3.972)	(4.617)
CEO Duality		0.0950*	0.0402		0.0595*	0.0365
		(1.779)	(0.687)		(1.935)	(1.103)
Board Independence		0.0067***	0.0073**		0.0009	0.0006
		(2.636)	(2.545)		(0.612)	(0.345)
Inside Ownership		-0.0029	-0.0065		0.0003	0.0001
		(-0.755)	(-1.451)		(0.120)	(0.046)
Institutional Ownership		0.0070****	0.0071***		-0.0007	-0.0004
		(3.412)	(3.073)		(-0.589)	(-0.337)
Constant	5.3356****	4.2390****	4.1079****	4.8565****	4.9490****	4.8688****
	(22.051)	(11.218)	(9.668)	(35.855)	(22.752)	(20.251)
N	666	666	546	666	666	546
R^2	0.495	0.526	0.517	0.428	0.433	0.427
adj. R^2	0.488	0.517	0.504	0.420	0.421	0.412
rmse	0.5953	0.5784	0.5874	0.3333	0.3330	0.3324

*Notes: t statistics in parentheses. * p<0.10, ** p<0.05, *** p<0.01, **** p<0.001*

Table 7: Regression of the absolute value of RPE based CSP on Executive compensation for the year 2016 (H3).

	(1) log_totcomp	(2) log_totcomp	(3) log_totcomp	(4) log_cashcomp	(5) log_cashcomp	(6) log_cashcomp
| RPE CSP |	0.0254	0.0301	-0.0122	0.0469**	0.0434**	0.0554*
	(0.665)	(0.796)	(-0.232)	(2.206)	(2.006)	(1.881)
| RPE CSP (t-1) |			0.0755			0.0021
			(1.550)			(0.078)
Log(Firm Size)	0.3515****	0.3555****	0.3429****	0.1639****	0.1594****	0.1516****
	(17.457)	(17.272)	(14.872)	(14.632)	(13.537)	(11.690)
ROA	-0.4509	-0.3036	-0.0797	-0.0020	0.0365	0.0491
	(-1.097)	(-0.755)	(-0.178)	(-0.009)	(0.159)	(0.195)
Stock Return	-0.0237	-0.0233	0.0032	-0.0385	-0.0440	-0.0385
	(-0.306)	(-0.305)	(0.036)	(-0.892)	(-1.006)	(-0.778)
Investment Opportunity	0.0186	0.0216*	0.0244*	-0.0055	-0.0065	-0.0085
	(1.643)	(1.950)	(1.934)	(-0.878)	(-1.025)	(-1.194)
Leverage	0.2476*	0.1517	0.0838	0.1255*	0.1263*	0.1510*
	(1.941)	(1.212)	(0.583)	(1.768)	(1.763)	(1.868)
Industry Concentration	-3.093****	-3.039****	-3.148****	-0.3263	-0.3389	-0.4259
	(-7.364)	(-7.341)	(-6.670)	(-1.396)	(-1.430)	(-1.605)
Tenure	-0.0007	-0.0001	-0.0025	0.0014	-0.0002	-0.0010
	(-0.153)	(-0.029)	(-0.487)	(0.573)	(-0.061)	(-0.357)
Age	0.0083**	0.0073*	0.0109**	0.0100****	0.0090****	0.0116****
	(2.139)	(1.864)	(2.497)	(4.619)	(4.025)	(4.718)
CEO Duality		0.0914*	0.0285		0.0583*	0.0325
		(1.707)	(0.488)		(1.901)	(0.987)
Board Independence		0.0064**	0.0068**		0.0007	0.0003
		(2.485)	(2.365)		(0.488)	(0.211)
Inside Ownership		-0.0028	-0.0065		0.0006	0.0005
		(-0.714)	(-1.441)		(0.289)	(0.181)
Institutional Ownership		0.0073****	0.0074***		-0.0003	-0.0001
		(3.494)	(3.163)		(-0.261)	(-0.057)
Constant	5.3632****	4.2588****	4.1866****	4.9161****	4.9702****	4.9038****
	(21.686)	(11.222)	(9.833)	(35.728)	(22.891)	(20.481)
N	666	666	546	666	666	546
R^2	0.493	0.523	0.516	0.432	0.436	0.433
adj. R^2	0.486	0.514	0.503	0.424	0.425	0.418
rmse	0.5968	0.5802	0.5881	0.3321	0.3320	0.3307

*Notes: t statistics in parentheses. * p<0.10, ** p<0.05, *** p<0.01, **** p<0.001*

In model (5), a 1 unit increase in |RPE CSP| is followed by a 4.34% increase in cash compensation, statistically significant at the 5% level contrary to my expectations.

Furthermore, I see that the variables 'Age' and 'Firm Size' again are highly positively significant.

An explanation for the positive association of '|RPE CSP|' on 'Cash Compensation' could be that there is no industry optimal level of social performance. This might be attributable to a flawed assumption that performance levels go along with investment levels. The absolute value of RPE based CSP initially consists of higher performing and lower performing companies relative to the industry equilibrium performance level. The positive coefficients suggest that the more a company's social performance level diverges from the industry equilibrium, the higher the executive remuneration. Concerning the firms that perform better than the industry equilibrium, it is explainable that CEOs get compensated for better social performance relative to their peers. However, worse performance relative to the industry equilibrium surprisingly also insinuates higher rewards for executives. Consequently, an explanation for the positive coefficients can be that the regression is mis-specified and therefore the results are not interpretable.

Nevertheless, the above-mentioned static regression outcomes for the year 2016 indicate some evidence of RPE to be a monitoring tool considered by corporate boards in the executive compensation consideration for social performance.

The influence of corporate governance strength on the relation between RPE based CSP and Executive Remuneration.

To test Hypothesis 4, I constructed an indicator[19] variable based on the four governance measures: *CEO duality, Board Independence, Inside Ownership and Institutional Ownership*. I separated the sample in strong versus weak corporate governance firms to examine whether governance strength has an influence on the association between RPE based social performance and CEO compensation. It is important to test whether corporate governance has a moderating effect on the association between RPE based CSP and executive remuneration. In this way, we may be able to claim whether the mechanism of RPE is used by corporate boards.

Table 8 presents the findings of this test. The coefficients of RPE CSP are insignificant, except for the strong corporate governance subsample with total compensation as the dependent variable. Compared to the weak corporate governance subsample, the coefficients indicate that the effect of RPE based CSP on total compensation is stronger and

[19] See Appendix II for the calculation of this indicator

statistically significant for the strong CG group. Yet, the coefficient of 0.0246 in the second column is insignificant. The difference in significance between the coefficients may be attributable to the fact that weak corporate boards do not consult RPE as a mechanism in the process of payment consideration. However, given the stronger statistically significant coefficient for the strong CG subsample on total compensation, I claim governance strength to have a positive influence on the association between RPE based CSP and total CEO compensation.

Table 8: Regression of CEO compensation on RPE CSP for strong vs weak CG subsamples for 2016.

	Strong CG	Weak CG	Strong CG	Weak CG
	log_totcomp	log_totcomp	log_cashcomp	log_cashcomp
RPE CSP	0.0885**	0.0246	0.0182	-0.0229
	(2.293)	(0.604)	(0.891)	(-0.962)
Log(FirmSize)	0.3590****	0.3232****	0.1745****	0.1590****
	(15.257)	(10.916)	(14.036)	(9.178)
ROA	-0.2717	-0.6100	-0.1562	0.3145
	(-0.529)	(-0.880)	(-0.575)	(0.776)
Stock Return	0.0200	-0.0592	-0.0500	0.0278
	(0.229)	(-0.389)	(-1.085)	(0.313)
Investment Opportunity	0.0109	0.0197	-0.0033	-0.0062
	(0.747)	(1.101)	(-0.421)	(-0.594)
Leverage	0.1878	0.3692	0.1075	0.1392
	(1.263)	(1.582)	(1.368)	(1.019)
Industry Concentration	-2.8011****	-3.0418****	-0.2033	-0.3776
	(-5.467)	(-4.201)	(-0.751)	(-0.891)
Tenure	0.0098	-0.0127*	0.0081**	-0.0081**
	(1.545)	(-1.867)	(2.410)	(-2.033)
Age	0.0012	0.0119*	0.0046*	0.0129****
	(0.224)	(1.918)	(1.668)	(3.547)
Constant	5.6308****	5.5108****	5.0959****	4.9122****
	(17.860)	(12.409)	(30.602)	(18.904)
N	393	273	393	273
R^2	0.501	0.470	0.457	0.373
adj. R^2	0.489	0.452	0.444	0.351
rmse	0.5499	0.6527	0.2904	0.3819

*Notes: t statistics in parentheses, * p<0.10, ** p<0.05, *** p<0.01, **** p<0.001*

Table 9: Regression Executive Compensation on CSP time consistent measure 2010-2011 (H1, 2 & 3)

	(1) Log totcomp	(2) Log cashcomp	(3) Log totcomp	(4) Log cashcomp	(5) Log totcomp	(6) Log cashcomp
CSP	0.0101	0.0028				
	(0.756)	(0.265)				
RPE based CSP			0.0122	0.0015		
			(0.856)	(0.143)		
|RPE CSP|					-0.0090	-0.0293*
					(-0.465)	(-1.870)
Log(Firm Size)	0.3953****	0.1993****	0.3949****	0.1994****	0.3978****	0.3953****
	(19.489)	(13.136)	(19.393)	(13.029)	(19.680)	(19.489)
ROA	0.0348	0.3014	0.0418	0.3061	0.0668	0.0348
	(0.079)	(0.858)	(0.095)	(0.869)	(0.150)	(0.079)
Stock Return	0.1912****	0.0201	0.1916****	0.0198	0.1884***	0.1912****
	(3.317)	(0.462)	(3.326)	(0.457)	(3.243)	(3.317)
Investment Opportunity	0.0337**	-0.0089	0.0335**	-0.0088	0.0351**	0.0337**
	(2.164)	(-0.740)	(2.152)	(-0.728)	(2.320)	(2.164)
Leverage	0.0775	0.0991	0.0773	0.0996	0.0825	0.0775
	(0.648)	(1.121)	(0.645)	(1.126)	(0.683)	(0.648)
Industry Concentration	-2.116****	-0.1555	-2.1191****	-0.1615	-2.1763****	-2.1161****
	(-5.173)	(-0.505)	(-5.196)	(-0.526)	(-5.329)	(-5.173)
Tenure	-0.0037	-0.0016	-0.0037	-0.0016	-0.0039	-0.0037
	(-0.823)	(-0.493)	(-0.823)	(-0.499)	(-0.857)	(-0.823)
Age	0.0012	0.0060**	0.0012	0.0060**	0.0013	0.0012
	(0.363)	(2.384)	(0.362)	(2.385)	(0.370)	(0.363)
CEO Duality	0.0496	0.0658**	0.0497	0.0658**	0.0491	0.0496
	(1.072)	(2.069)	(1.075)	(2.072)	(1.063)	(1.072)
Board Independence	0.0051**	-0.0009	0.0050**	-0.0009	0.0052**	0.0051**
	(2.170)	(-0.566)	(2.156)	(-0.558)	(2.234)	(2.170)
Inside Ownership	-0.0052	-0.0014	-0.0052	-0.0014	-0.0054	-0.0052
	(-1.441)	(-0.567)	(-1.438)	(-0.570)	(-1.467)	(-1.441)
Institutional Ownership	0.0064****	-0.0004	0.0064****	-0.0004	0.0064****	0.0064****
	(3.813)	(-0.329)	(3.806)	(-0.332)	(3.774)	(3.813)
Constant	4.3736****	4.9749****	4.3677****	4.9702****	4.3451****	4.9637****
	(13.425)	(21.761)	(13.526)	(21.965)	(13.577)	(22.399)
N	1404	1404	1404	1404	1404	1404
R^2	0.567	0.421	0.567	0.420	0.567	0.423
adj. R^2	0.563	0.415	0.563	0.415	0.563	0.417
rmse	0.5834	0.3964	0.5834	0.3964	0.5836	0.3956

Notes: t statistics in parentheses * *p < 0.1,* ** *p < 0.05,* *** *p < 0.01,* **** *p < 0.001. Standard errors are clustered by firm in this model. Model (1) & (2) present the results on H1, Model (3) & (4) present the results on H2 and Model (5) & (6) present the results on H3.*

Social performance measures over time

Table 9 presents a summary of the regression results of the time consistent social measure for the years 2010 & 2011 on both compensation variables. Variables concerning the three hypotheses are incorporated in this table. I notice that the signs of the CSP coefficients are in congruence with the hypotheses. However, except for model (6), none of them is statistically significant. The coefficient of |RPE CSP| in model (6) is statistically negatively significant at the 10% level and suggests that a 1 unit increase in the absolute difference between a company's social performance and that of its peers, would lead to a decrease in cash compensation of 2.93%. This finding is in line with the third hypothesis, contrary to the findings related to the year 2016.

Table 10: Summary of Static Regression outcomes

	Hypothesis 1				**Hypothesis 2**				**Hypothesis 3**			
	Total Comp		Cash Comp		Total Comp		Cash Comp		Total Comp		Cash Comp	
year	signif	sign	signif	sign	signif	sign	signif	sign	signif	sign	signif	sign
1996	No	No	No	No	No	No	No	No	No	Yes	No	Yes
1997	Yes**	No	No	No	Yes**	No	No	No	No	No	No	Yes
1998	No	No	No	No	No	No	No	No	No	No	No	No
1999	No	Yes	No	Yes	No	Yes	No	Yes	No	No	Yes*	No
2000	No	No	Yes***	No	No	No	Yes***	No	No	Yes	No	Yes
2001	No	No	Yes***	No	No	Yes	Yes***	No	No	Yes	Yes**	Yes
2002	Yes*	No	No	No	No	No	No	Yes	No	Yes	No	Yes
2003	No	No	No	No	No	No	No	No	No	No	No	No
2004	No	Yes	No	No	No	Yes	No	Yes	No	No	No	No
2005	No	Yes	No	No	No	Yes	No	No	No	No	No	Yes
2006	No	No	No	No	No	No	No	No	No	Yes	No	Yes
2007	No	No	No	No	No	No	No	No	No	Yes	No	Yes
2008	No	No	Yes*	No	No	No	No	No	No	Yes	No	Yes
2009	No	No	No	No	No	No	No	No	No	No	No	Yes
2010	No	Yes	No	Yes	No	Yes	No	No	No	No	No	Yes
2011	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	Yes**	Yes
2012	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
2013	Yes*	Yes	No	No	Yes**	Yes	No	Yes	No	Yes	No	Yes
2014	No	Yes	No	No	No	Yes	No	No	No	Yes	No	No
2015	No	Yes	No	No	No	Yes	No	No	No	No	No	No
2016	Yes**	Yes	No	No	Yes**	Yes	No	No	No	No	Yes**	No

*Notes: This table provides an overview of the static regression outcomes for each year separately in the sample in terms of significance and sign. The columns under sign indicate whether the results are in congruence with the hypotheses proposed in this paper. Significance is indicated by *, ** and ***. These stars respectively represent 10%, 5% and 1% levels. Models (2) and (5) of table 5, 6 & 7 form the basis of this static regression table.*

When I compare the outcomes in Table 9 with those of the most recent static regression for the year 2016[20], I recognize that the results became more significant over time. Besides, the overall trend related to the static regressions, presented in Table 10 demonstrates a transformation in sign of coefficients. From 2008 onwards, the regressions demonstrate significance in outcomes and more consistency in coefficient signs. Therefore, I assume that corporate social performance has become increasingly important and popular over time. I argue that firms more and more embed CSR in their corporate policies and subsequently compensate CEOs for it.

V. Conclusion & Discussion

In this research, I examine the association between executive compensation and corporate social performance and the influence of relative performance evaluation on this relation. The data sample consists of a large set of US companies over the period 1996 to 2016. Due to the inefficiency in measurement of the MSCI database and mixed findings in existing literature, I separated the total sample into several short panels including time consistency measures of social performance. After controlling for firm, CEO and board characteristics, I did not find any significant consistent association between time consistent social performance measures and CEO compensation for the hypotheses. An explanation for this could be that social performance does not affect executive remuneration. However, I argue that the MSCI database is not suitable for constructing a time consistency measure of CSR performance. I suggest that there is an urgent demand for consistency in measurement and definition of CSR data over time and between firms to be able to test the concept of social performance.

Subsequently, I ran the regressions for each year separately in the sample to examine how the association between executive remuneration and social engagement evolves in terms of sign and significance. The findings indicate a trend in significance of coefficients over time, which suggests that corporate social responsibility from 2008 and onwards has become more prominent and popular. Furthermore, I found social performance to be positively associated with total compensation for the most recent year in the data sample, 2016. For 2016, I also found, the better a company performs on social initiatives relative to its peers, the higher the total compensation for executives and contrary to the third hypothesis, the results indicate a positive effect of the absolute value of RPE on total

[20] Presented in Tables 4, 5 and 6.

compensation. Furthermore, I found that relative performance evaluation is more pronounced in total compensation for firms characterized by strong governance structures.

However, this study also has its limitations. To capture social performance, I collect data from the MSCI ESG database. Extensive literature indicates the shortcomings of this data source. Academics argue that this MSCI database suffers from inadequacy in measurement and model specification issues (McWilliams & Siegel, 2000; Taneja et al., 2011; Chatterji, Levine & Toffel, 2009). Nevertheless, I use this database to construct time consistent social performance measures due to the high availability and variety of social CSR variables, besides the data captures approximately 85% of the US stock market. The findings may not apply for firms that do not operate on the US stock market.

Furthermore, the assumption made under the third hypothesis might be flawed given the regression outcomes. Following Jian & Lee (2015), I hypothesized that the value-destruction and value-creation hypothesis apply for RPE based social performance. Within this, I assume that social performance goes along with social investment levels and subsequently will converge to a certain industry equilibrium performance level. Diverging from this equilibrium is suggested to be value-destructing, converging to this equilibrium is suggested to be value-creating. However, the significant positive association of RPE CSP on total compensation for 2016 rejects this hypothesis. The assumption of social performance that goes along with social investments may be faulty, since the findings suggest the better a company performs on social initiatives, the higher the compensations. Hence, it would be an avenue for future research to examine the relationship between relative performance evaluation based on CSR investments and executive remuneration. However, it is relatively difficult to capture the exact level of social investments for a certain company.

Additionally, in this thesis, relative performance evaluation is captured as the difference between the performance of a company and its industry peers. It is questionable whether the industry average social performance measure is the most appropriate approach to capture RPE. A more subjective measure could have been more applicable to this research. For instance, carrying out a survey in which directors of corporate boards are asked whether they consider social performance of competitors in the assessment of their own company's social performance. Yet, this would be extensively time-consuming. Additionally, a more subjective way to capture social performance could have been to measure how social engagement of a certain company is perceived by its different stakeholders. However, this would also be extensively time-consuming.

Although the adjusted R-squared indicates that approximately 50% of the variance is explained by the model, an omitted variable test suggests that there is presence of an

endogeneity issue concerning omitted variable bias. Nonetheless, based on prior research, I included fourteen variables in the model. Adding more variables may cause overfitting of the model. Therefore, future research could make use of a different set of control variables.

This study contributes in two ways to the existing literature. Firstly, I selected a different approach concerning the measurement of CSR performance by devising time consistent measures of social performance, since extant literature argues that the MSCI database suffers from inefficiency as it measures the social indexes differently over time. Secondly, I am the first to examine the mechanism relative performance evaluation in social performance and its influence on CEO compensation.

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VII. Appendix

Appendix I: Variable descriptions

Table 10: Variable Descriptions

Variable	Definition
CSP	An individual company's Corporate Social Performance measure calculated as the total strengths minus total concerns items for a certain fiscal year
Diff CSP	The difference between a company's CSP and the average performance measure of its industry, based on 2-digit SIC codes.
RPE CSP	The absolute value of *'Diff CSP'*
ROA	Return on Assets
Stock Return	Stock return in the fiscal year the compensation is given
Investment Opportunity	3-year average market to book ratio for the most recent years
Industry Concentration	Herfindahl-Hirschman Index (HHI) which is a proxy for industry competition
Leverage	Book value of debt over book value of assets
Tenure	Total number of years served as CEO at the company
Age	The age of the chief executive officer in the fiscal year
CEO Duality	Indicator variable which indicates whether a CEO is also chairman of the board [0,1]
Board Independence	Percentage of independent directors on the board
Inside Ownership	Percentage of shares held by 1) CEO 2) Directors 3) Other management functions
Institutional Ownership	Percentage of total shares held by Institutional owners
CG strength indicator	Variable that indicates the strength of governance structure for a certain company
Inverse CEO Duality	Indicator variable which indicates the inverse of variable 'CEO Duality', in order to construct a CG strength indicator (1=0 & 0=1). Absence of duality indicates CG strength.
Indicator Independence	Equals 1 if value is > sample median of Board Independence, otherwise 0.
Indicator Institutional Ownership	Equals 1 if value is > sample median of Institutional Ownership, otherwise 0.
Indicator Inside Ownership	Equals 1 if value > sample median of Inside Ownership, otherwise 0.

Notes: This table presents the definitions of the variables used in this research

Appendix II: Formulas & Calculations

$$CSP_{i,t} = Total\ Strength\ Items_{i,t,d} - Total\ Concern\ Items_{i,t,d}$$

$$Industry\ Mean\ CSP_{i,t} = {\sum_{i=1}^{n} CSP_{i,t}}/{n}$$

$$Difference\ in\ CSP_{i,t} = Individual\ Company\ CSP_{i,t} - Industry\ Average\ CSP_{i,t}$$

$$RPE\ based\ CSP_{i,t} = |Individual\ Company\ CSP_{i,t} - Industry\ Average\ CSP_{i,t}|$$

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

$$Stockreturn = \frac{(Stock\ Price_{t} - Stock\ Price_{t-1}) + Dividends}{Stock\ Price_{t-1}}$$

$$Investment\ Opportunities = \frac{MB\ ratio_{i,t} + MB\ ratio_{i,t-1} + MB\ ratio_{i,t-2}}{3}$$

$$Industry\ Concentration(HHI) = \sum_{i=1}^{n} s_n^2,\ in\ which\ s = market\ share\ of\ a\ company\ (as\ 0, \dots)$$

$$Leverage_{i,t} = \frac{Book\ value\ of\ Debt_{i,t}}{Book\ value\ of\ Assets_{i,t}}$$

$$Board\ Independence_{i,t} = \frac{Number\ of\ independent\ board\ members_{i,t}}{Board\ Size_{i,t}} * 100\%$$

$$Inside\ Ownership_{i,t} = \frac{CEO\ Ownership_{i,t} + Board\ Ownership_{i,t} + Management\ Ownership_{i,t}}{Total\ shares\ outstaning_{i,t}} * 100\%$$

$$Institutional\ Ownership_{i,t} = \frac{Shares\ held\ by\ institutional\ owners_{i,t}}{Total\ shares\ outstanding_{i,t}} * 100\%$$

$$GOV\ Strength\ indicator = ((Inverse\ CEO\ duality * 100) + Indicator\ Independence + Indicator\ Institutional\ Ownership + Indicator\ Inside\ Ownership)\ /4$$

Notes: Indicators of Corporate Governance variables are 1 if the value is above the sample median, 0 otherwise.