

M.Sc. Thesis in Accounting and Financial Management

Does being nice pay?
The Relationship between Company CSR Performance
and Executive Compensation in Sweden

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Abstract

The primary purpose of this paper is to investigate the relationship between CSR performance measures and the compensation levels of the CEO as well as of the average senior executive officer (SEO), while the secondary purpose is to investigate how traditional CEO compensation determinants relate to average SEO compensation. We apply a quantitative robust regression approach using a sample of 710 observations, covering 138 Swedish listed companies throughout 2005-2013. We contribute to executive compensation and CSR literature by finding that very weak and very strong company CSR performance is associated with lower levels of executive compensation for CEOs and SEOs. We identify a non-linear relationship between executive compensation and CSR scores, the effect of which in the CEO case is amplified by company profitability levels when Social CSR scores are low. Looking into the Social and Environmental components of CSR we conclude that Social CSR measures have a stronger connection to SEO compensation than Environmental measures, whereas in the CEO case both CSR component types are significant. We explore industry-level relationships and find potential CSR and executive compensation association differences between industries. Executive, governance and company specific variables generally follow the findings of former research, although board size, institutional ownership and company profitability are not significantly related to average SEO compensation, while both CEO and SEO compensation is associated negatively to presence of blockholders and positively to blockholders' control and ownership detachment. Our findings mainly have practical implications for further research, emphasizing the need for separate investigations in CEO and SEO areas, avoiding generalized (non-industry level) research as well as calling some past executive and CSR research results into question. Potential business implications include CSR effects on executive recruitment decisions and on company strategy decisions due to the effect on executive salaries.

Keywords: Executive compensation, Executive remuneration, Executive salary, Executive pay, CEO compensation, Senior executive officers' compensation, Corporate Social Responsibility, Corporate Social Performance, Stakeholder Theory, Agency Theory, Sweden

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List of abbreviations

Abbreviation	Explanation
CSP	- Corporate Social Performance
CSR	- Corporate Social Responsibility
SEO	- Senior Executive Officer
CEO	- Chief Executive Officer
ESG	- Environmental, Social and Governance areas
DSS	- Dual Share System
P/B	- Price to Book ratio
D/A	- Debt to Assets (financial leverage) ratio
RQ	- Research Question
GICS	- Global Industry Classification Standard
OECD	- The Organization for Economic Co-operation and Development
S&P500	- Standard and Poor's top 500 companies
SFF	- Swedish Society of Financial Analysts (english translation)
Ln (x)	- Natural logarithm of x
App. x	- Appendix number x
Reg. # x	- Regression number x

1. Introduction

In this study we primarily investigate the relationships between company corporate social performance and executive compensation, looking at both CEOs' and other senior executive officers' (SEO) remuneration.

Executive compensation and CSR are two important topics that have gained increased attention over the last couple of decades. Lucrative compensation packages that the top management, and especially CEOs, receive has attracted a lot of public interest. Bebchuk and Fried (2006) noted that from 1992 to 2000 the average inflation-adjusted CEO pay of the S&P500 rose from 3.5 million USD to over 14.7 million USD (320% rise), resulting in a number of scandals in 2001. The increase in pay during this time more than tripled the salary distance from CEO to an average factory worker from 140:1 to 500:1. Abowd and Kaplan (1999) compared real executive compensation in 12 OECD countries throughout 1984-1996 and found dramatic increases all across the board, with the United States, the United Kingdom, Canada and France standing out with around 6 % p.a. increases in salary for a period of twelve years. In addition, there have been numerous large scandals concerning excessive executive pay, such as Skandia scandal in 2003 when it was discovered that the CEO Lars-Eric Petersson had removed the ceiling on an executive bonus programme without authorisation, which resulted in other senior executives receiving an additional bonus of 156 mSEK (21 mUSD) in 2000-2002 (Brown-Humes, 2006, May 25). Indeed, executive salaries and bonus payments remain as one of the most heated discussion topics in corporate world and entail significant research potential.

Over the same period the corporate social responsibility (CSR) area gained considerable attention from the general public, pushing firms to review their policies and actions in the light of new CSR requirements. The increased pressure for CSR compliance motivated companies not only to engage in CSR activities and to monitor corporate social performance (CSP), but also to release CSR reports that complement annual financial reports. According to the KPMG Survey of Corporate Responsibility Reporting 2013, 51 percent of reporting companies worldwide include corporate responsibility information in their annual financial reports, which represents a large increase compared to 20% in 2011 and only 9% in 2008. This indicates that not just CSR activities as such, but also CSR reporting is becoming a global common practice. However, this survey indicates that only a few large companies include the link between CSR performance and executive pay so far, namely *“Only one in 10 G250 companies (10 percent)”*

reports a clear link between CR performance and executive or employee remuneration” (KPMG, 2013). We believe that the fact that some of the Global Fortune 250 companies explicitly state the link between executive compensation and CSP in their annual reports serves as a ground for further investigation into this field. Moreover, despite being a global trend nowadays, CSR reporting is voluntary and has no strictly defined rules for what has to be reported, thus, there is a high chance that the link between CSP and remuneration is actually present in a larger number of companies, including the firms that do not report this information up to this date, or that this link is intrinsic.

Furthermore, reputable journals started to take firm CSR performance into account when making top CEO rankings. Harvard Business Review changed their metrics for defining the best-performing CEOs in the world in 2015: *“We’ve added to the mix a measurement of each company’s environmental, social, and governance (ESG) performance. <...> We now weight long-term financial results at 80% and ESG performance at 20%”* (Harvard Business Review Staff, 2015, November). Such rankings attract a lot of attention and positive publicity, and in this respect, whether high CSR performance pays off becomes an important question not only on the firm-level, but also on the individual executive level, and especially for the CEO. Thus, the first research question (RQ1) we would like to ask is **“What is the relation between corporate social performance and CEO compensation?”**

While a considerable body of literature analyses the relationships between executive compensation and financial performance (Jensen and Murphy, 1990; Abowd, 1990; Hall and Liebman, 1998; Core, Holthausen, Larcker, 1999; Aggarwal and Samwick, 2003; Lilling, 2006; Devers, Cannella, Reilly, & Yoder, 2007; Nystrom, Soofi and Yasai-Ardekani, 2009), corporate governance (Hartzell and Starks, 2003; Lee and Chen, 2011; Reddy, Abidin and You, 2015), and other firm level factors, the relationship between executive compensation and CSR is still under-researched. Only a handful of research look at the link between the executive compensation and corporate social performance. Jian and Lee (2015) find a negative relationship between variation from optimal level of CSR investment and CEO pay, while Cai, Jo, & Pan (2011), Miles and Miles (2013) and Rekker, Benson and Faff (2014) find a negative relation between corporate social performance and CEO compensation. On the contrary, Berrone and Gomez-Mejia (2009) find a positive relationship between environmental performance and CEO total pay, while Mahoney and Thorne (2006) argue for the positive relationship between some of the compensation and CSR components and highlight the importance of executive compensation structure.

Extant executive compensation research focuses on CEO compensation primarily, however, other senior executive officers also play an important role in the company and are likewise known for receiving high salaries and bonuses. According to Miles and Miles (2013) even though top management compensation is not as visible to the public as the CEO's, it has risen at similar rates to CEO pay and is likely to be visible inside the company. This, in turn, puts some emphasis on keeping a reasonable cap on compensation for all executives, not only the CEO. However, almost all of the existing research focuses on CEOs rather than other senior executives, which indicates a gap in the literature of executive compensation, both in terms of CSP and other explanatory variables. Therefore, in order to fill in this gap in literature, we formulate two additional research questions. In order to see what patterns emerge between CSR performance and executive compensation when studying the pay of senior executives other than the CEO, we ask (RQ2): **“What is the relation between corporate social performance and other senior executive officers’ compensation?”**. Lastly, since other senior executive compensation is not a sufficiently investigated field, we go beyond focusing on CSR performance and frame the third research question (RQ3) as **“How is other senior executive officer’s compensation associated with the variables used for determining CEO compensation?”** Moreover, most of executive compensation studies are based on US companies’ samples, while the number of studies of executive compensation in Sweden is very limited, with the research on other senior executives’ compensation being practically non-existent globally, thus our research on CEO compensation in Sweden greatly contributes to the executive compensation field.

We construct our quantitative regression model while building on the methodologies of Rekker et al (2014) and to an extent to that of Mahoney and Thorne (2006). We include most of the commonly used variables related to specific executive, company and corporate governance characteristics, as well as time and industry-specific control variables. The mixed findings from previous research restrict us from making hypotheses as well as serve as a basis to suspect that there might be a non-linear relationship between company CSR performance and executive compensation, therefore we construct two measures to account for strong and weak CSR performance separately.

We conduct the study based on a sample of Swedish companies and, while studying RQ1 and RQ2, we contribute to the field by (1) finding a negative relationship between both CEO and average CEO compensation and corporate social performance in cases when CSP is very weak or very strong, which also provides evidence that (2) this relationship is curvilinear. Additionally, we identify that when Social CSR performance is weak, the size of its negative

relationship with CEO compensation is amplified by company profitability levels (ROA). We also find that (3) Social CSR measures are more related to CEO compensation than Environmental measures, whereas CEO compensation relationship is significant with both Social and Environmental CSR components. Our findings with respect to RQ3 indicate that (4) both CEO and CEO compensation are negatively related to the presence of blockholders and positively associated with the blockholders' control and ownership detachment variables. We also find that board size, institutional ownership and company profitability are not significantly associated with the compensation of other senior executive officers, while in the CEO case they are related significantly and positively. Moreover, we find that (5) potential different CSR and executive compensation associations may persist in different industries.

These findings entail a number of practical implications for further research, as this study shows the relevance of accounting for the relationship between CSR performance and executive compensation separately for CEOs and CEOs, the need to approach executive compensation studies on an industry-level basis as opposed to a generalized approach, and the necessity to account for the non-linear relationship with CSR when designing the research methodology. If further research on this established link between CSP and compensation could determine the causality, this would consequently lead to more practical implications for company strategy, executive recruitment, and other areas. Normative suggestions beyond the implications for further academic research cannot be drawn since this requires having proof of a causal relationship which is currently not obtainable in the Swedish context due to limited data availability.

The rest of the paper is organized in the following sequence: theoretical background, literature review, methodology and sample, estimation results, discussion of findings and conclusion.

2. Theoretical background

In this section we define what CSR performance is within the scope of this paper, as well as review the theoretical links between executives, shareholders and other stakeholders which serve as a basis for empirical studies in the field of executive compensation, including the papers focusing on the link between CSP and remuneration.

2.1. Corporate Social Performance

CSR does not have a single definition, various research and agencies define and use it differently. The World Business Council for Sustainable Development defines it as: *“the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large”* (Moir, 2001).

Moir (2001) conducted research on the CSR definitions used by most prominent researchers in the 1990's and found over 20 different interpretations. On the company side, there were over 30 CSR reporting standards with competing definitions. Even now there is no strict definition for CSR, although there has been significant convergence to the Global Sustainability Guidelines (MacLean and Rebernak, 2007). There CSR is divided into 3 areas - environmental, social and economic (Global Reporting Initiative, 2015). Alternatively, it can be distinguished into environmental, social and governance areas, or ESG in short, thus taking out the economic area and substituting it with corporate governance (UNEP Finance Initiative, 2005). This split is now used extensively by companies, research agencies and researchers (Jemel-Fornetty, Louche and Bourghelle, 2011). The environmental area deals with climate change, hazardous waste, emissions, energy use and similar issues, social area relates to human rights, labour practices, effect on society and etc., while governance deals with management and ownership structures, compensation, bribery and other additional areas within the company. The measure of implementation and successfulness of these activities is called corporate social performance (CSP), and as of 2011 was used in various formats in more than 90% of Global Fortune 250 companies (KPMG, 2013).

Within the scope of this paper we use ESG (environmental, social and governance areas) as the definition of CSR, and accordingly use company scores which are based on performance in these dimensions as the CSP measures (see Appendix 1). The scoring system against which the companies are assessed to determine ESG performance is further described in the Methodology section.

2.2. Conflict of interests as a basis: agency theory versus stewardship theory

Increased attention to the area of executive compensation was enhanced by the seminal paper of Jensen and Meckling (1976), who proposed the agency theory of the firm and integrated its elements with the theories of finance and property rights to develop a theory of ownership structure. Most of the studies of top management compensation rely on agency theory as the underlying theory for understanding the behaviour patterns of CEOs and their relationships with shareholders. The principal-agent theory suggests that there is a conflict of interest between the principal (shareholders) and the agent (CEOs). Shareholders appoint CEOs to serve their interests in maximizing shareholders' wealth. Meanwhile, CEOs have a self-interest in earning higher compensation and consuming perquisites, which often destroy at least a part of the generated value. The reward systems together with board monitoring play a major role in aligning these conflicting interests of shareholders and CEOs. Namely, considerable compensation packages are designed for attracting and retaining talented CEOs in the company with an expectation that this would lead to the highly satisfactory firm performance and, accordingly, wealth creation for the shareholders. Thus, the shareholders are interested in strongly linking CEO compensation to firm value, this way incentivizing the CEO to work in the interest of the company shareholders rather than engaging in self-serving activities.

Agency theory, however, is often criticized for the narrow and mostly negative view of the actor relationships, and some opposing evidence has been found. Several studies have found that companies that have CEOs as chairmen of the board perform better than their peers *ceteris paribus* (Berg and Smith, 1978; Davis and Donaldson, 1991). Stewardship theory has emerged as one of the alternative models to explain the interrelations between CEOs and shareholders. While agency theory favours the opportunistic behaviour of CEOs, stewardship theory suggests that CEOs have moral values that make them act in the interest of company owners (Davis, Schoorman, & Donaldson, 1997). Stewardship is seen as a set of behaviours and attitudes that places long-term interests of the group higher than the self-interests of an individual. Strictly defined, the theory relates solely to the relationship between the CEOs and the shareholders, but it has not been well defined in its inception and thus sometimes is interpreted quite loosely, encompassing elements of stakeholder theory (Davis et al., 1997). Using the loose definition, in firm organizational context stewardship translates into taking responsibility for the effects that individual's actions cause on the stakeholders, and that often implies balancing the shareholders' interests with the interests of the internal company parties involved (Davis et al., 1997; Godos-Díez, Fernández-Gago & Martínez-Campillo, 2011; Hernandez, 2008). This

theory becomes particularly prominent in the context of corporate social responsibility, as the promotion of CSR practices within the company could be driven considerably by the moral values of the CEO. Godos-Díez et al (2011), by conducting a study on 149 CEOs in Spain, find that based on the CEO profile, those CEOs who have profile characteristics closer to stewardship model are to a greater extent promoting CSR practices in their firms. CEOs with profiles closer to stewardship attach higher significance to the role of social responsibility and ethics, the importance of which is used as a mediating variable in this research.

Agency theory and stewardship theory emerge as two different perspectives when looking at the role of the top executives of the firm, given that company ownership and control are separated. From a more global perspective, this interest-conflict-based tension could be likened to the impasse between the shareholder wealth maximization theory and the stakeholder theory.

2.3. Shareholder theory versus stakeholder theory

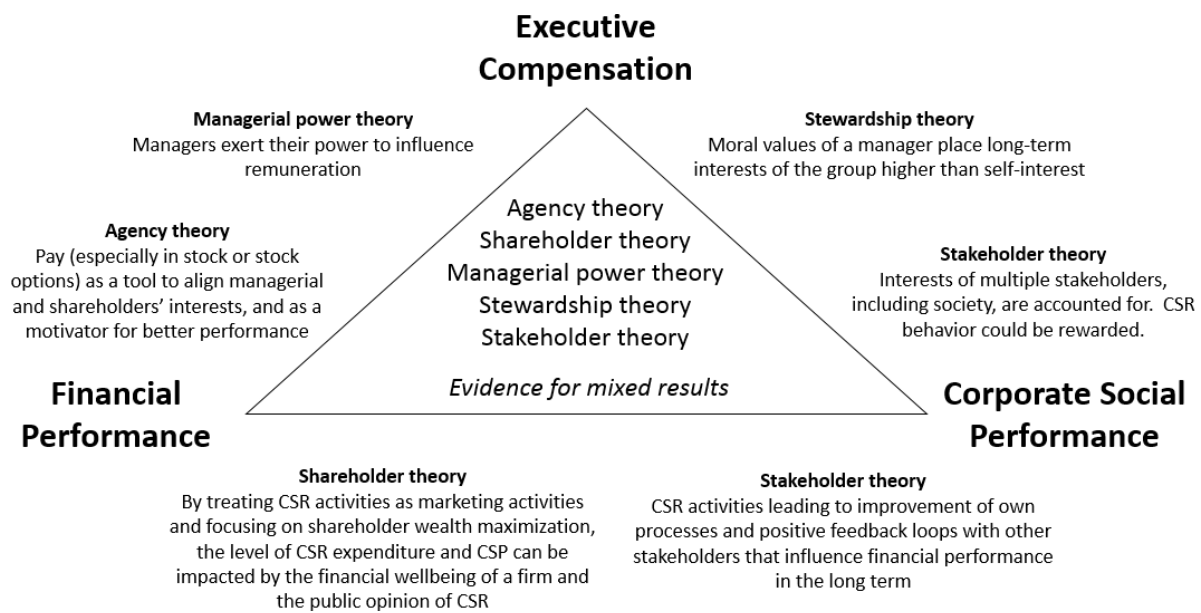
Shareholder theory positions shareholders' wealth maximization as the key objective of a firm, and the primary focus of managerial attention accordingly. Even though this theory acknowledges that the firm has a network of contracts with different stakeholders, there is clear dominance of interests of a particular group, namely, the shareholders' interests (Fama, 1980; McGuire, Dow, & Arghy, 2003). On the contrary, the stakeholder theory takes a broader perspective and implies that the interests of any one given stakeholder should not dominate the interests of others (Jones & Wicks, 1999; McGuire et al., 2003), which goes together with and expands the stewardship theory from an intra-company level to encompass the whole society. One of the ways to accommodate for the interests of broader stakeholder groups, such as the society, is to look at the integration and performance of CSR activities within a company and the effects thereof.

3. Literature review

3.1. The connection between executive compensation, CSP and CFP

We review the literature that connects executive compensation, company financial performance and company social performance in the following section. The connections between these research areas are visualized in the graph below.

Figure 1: Relationships triangle between executive compensation, CSP and financial performance



Even though our primary focus is on empirical research that links CSP to executive compensation, both globally and in Sweden, it is important to account for corporate financial performance as this variable might play a significant role in the relationship between executive compensation and CSP.

3.2. Link between company financial performance and executive compensation

Numerous studies have attempted to determine the relationship between executive compensation and the financial performance of a company, though until this day there is no consensus on the matter. Guided by the principal-agent theory that argues for the conflict of interests between the CEOs and the shareholders and suggests mitigating it through linking CEO compensation to firm value, multiple studies try to address the effects of different components of executive compensation. Particular attention is drawn to the stock-based CEO compensation and other long-term incentive plans that rely on the financial performance of the company, as well as other important determinants, such as company size, corporate governance structures of firms, foreign ownership, legal enforcement and strength of shareholder rights in the country and so on.

Studies of the relationship between executive compensation and financial performance of the firm largely emerged after Jensen and Murphy (1990) published their study on pay-performance sensitivity, concluding that on average CEO compensation increases only by \$3.25 for every \$1,000 positive change in shareholder wealth. The authors hypothesized that limits imposed by public and private political forces reduce the pay-performance sensitivity, suggesting that the sensitivity of CEO pay to firm performance is quite low. A considerable

number of research papers has been published on the topic since then, providing mixed evidence for the pay-performance relationship in different setups, depending on the timeframe, sample and variables used (Devers, Cannella, Reilly, & Yoder, 2007).

A number of studies argue for the positive relationship between the executive compensation and firm financial performance. For instance, Hall and Liebman (1998) provide evidence for significantly higher pay-performance sensitivity than Jensen and Murphy (1990). Lilling (2006) draws attention to the simultaneity problem of CEO pay and financial performance. Controlling for endogeneity and firm-specific effects, the author finds that the relationship between the market value of a company and the CEO's compensation is positive and stronger than previously estimated. However, Abowd (1990) finds that while market measures are usually quite strong, accounting performance measures have either no or weak significance in the compensation-performance link.

Multiple studies find no significant relationship between executive compensation and financial performance or even argue for a negative association between executive pay and financial performance. Factors such as corporate governance, level of management responsibility and others play a role in determining the significance of the pay-performance relationship. For instance, Core, Holthausen, Larcker (1999) find that weak governance structures lead to higher CEO pay, but lower financial performance. Speaking of the effects that corporate governance structures exert on executive pay, Reddy, Abidin and You (2015), by studying the effects of corporate governance on CEO compensation, conclude that companies that have their CEO on the board pay them more than those who do not have the CEO sit on the board. While Lee and Chen (2011) analyse corporate governance and firm value as determinants of CEO compensation and find that firm size, board size, firm value, institution ownership and CEO ownership are positively associated with CEO compensation while firm age, research and development expenditure rates and firm risk are negatively associated with CEO compensation. The authors also note the interdependence between CEO compensation, CEO ownership and firm value. Corporate ownership also proves to play a significant role, as, according to Hartzell and Starks (2003), institutional ownership concentration is positively related to the pay-for-performance sensitivity of executive compensation and negatively related to the level of compensation as measured by either salary or by total direct compensation.

Nystrom, Soofi and Yasai-Ardekani (2009), by analysing the salaries of 50 top-paid CEOs in the US as of 2007 find a negative relation between the extremes of CEO pay and extremes of performance among top-paid CEOs. This evidence goes together with the so-called Managerial power theory that argues that managers hold sufficient power to influence their

remuneration in a way that executive compensation is not optimal and not sufficiently correlated with performance. Lambert, Larcker and Weigelt (1993), as based on Finkelstein (1992), define managerial power as “*the ability of managers to influence or exert their will or desires on the remuneration decisions made by the board of directors, or perhaps the compensation committee of the board*”.

Aggarwal and Samwick (2003) argue for CEO pay-performance sensitivity being much higher than for other senior executive officers (SEOs) as managerial incentives vary depending on responsibilities. The authors show that managers with explicit divisional responsibilities have lower pay-performance sensitivities than the managers with broad oversight authority, while CEOs have highest pay-performance sensitivities among all of the top management team members.

Indeed, it is not just CFP that can have an effect on executive pay, but the reverse is also possible - executive salary level can influence firm performance. According to Devers et al. (2007), most of the studies on the influence of executive pay on CFP view compensation as a motivation tool for executives that leads to achieving better results. However, the results produced are ambiguous due to a large number of firm-performance-influencing factors that are outside of managerial control. Overall, there is little consensus on the pay-performance relationship and its significance is highly dependent on a number of firm-specific factors, particular country settings and the model used.

3.3. Exploring the link between firm financial and corporate social performance

Based on the stakeholder theory, the management of a firm accounts for the interests of multiple stakeholders, including the society, and thus gets engaged in CSR activities in daily company operations. This, in turn, leads to improvement of own processes and positive feedback loops with other stakeholders that influence financial performance in the long term (Wilson, 2013).

McGuire, Sundgren and Schneeweis (1988) find a positive relationship between firm performance and CSR activities by predicting corporate social responsibility using prior and subsequent financial performance, both in accounting and market performance terms. The positive CSP-CFP relationship is further supported by Waddock and Graves (1997) who also look into CSP relation and find a positive link for CSP and prior financial performance and for CSP and future financial performance, suggesting that causality of CSP-CFP relationship goes both ways.

Despite the number of studies supporting the relationship between CSR performance and financial performance, McWilliams and Siegel (2000) argue that these models have a major flaw of not controlling for investment in R&D, as when it is included in the model specification, CSR has a neutral impact on financial performance.

Corporate governance is one of the major aspects of CSR that is also often looked into by researchers. Bhagat and Bolton (2008) find that corporate governance measures, such as board stock ownership and CEO-Chairman separation, have significant positive correlation with both current and future company operating (accounting) performance. Their findings also contradict the results of Gompers, Ishii and Metrick (2003) as well as Bebchuk, Cohen and Ferrel (2009), as Bhagat and Bolton (2008) do not find a significant link between governance measures and future stock performance. Javed, Iqbal and Hasan (2006) find a positive link between the quality of firm-level corporate governance and firm performance by studying non-financial firms in Pakistan.

Looking at more industry-specific studies, Soana (2011) explores the CSP-CFP link in the banking sector of Italy, using an ethics rating as a proxy for corporate social performance, and finds no significant relationship between the two. The difference in results from previous research (McGuire et al, 1988) could also be attributed to the specifics of the industry and country setting, highlighting the importance of controlling for these factors.

In this light, looking into Sweden-specific evidence on CSP-CFP relation is of paramount importance. Semenova, Hassel and Nilsson (2009) study the impact of social and environmental factors on firm value relevance by studying a sample of Swedish companies. The authors expect ESG to have an effect as “*since 1996, the importance of extra-financial information to the investor has been highlighted by SFF*” (SFF as cited in Semenova et al. (2009)). The authors find a significantly positive relation between the environmental performance of a firm and the market value of equity. The evidence obtained from social performance provided heterogeneous results with specifically community and supplier indicators being positively related to market value. Overall, companies with higher environmental and social performance on average achieve higher returns, while firms with low performance in these areas tend to underperform the market (Semenova, Hassel, & Nilsson, 2009).

In addition, Scott (2007) argues that CSR often tends to be reduced to a range of marketing techniques. He finds strong support for corporate profitability acting as a fetter to authentic social responsibility, irrespective of the subjective will of CEOs. That is, once the profitability of a firm is threatened, the company reconsiders its CSR activities as CSR does

not always bring a competitive advantage and socially responsible investors tend to have significantly reduced returns (Scott, 2007). This finding can be seen as in line with the rationale behind shareholder theory, i.e. if CSR is viewed as a mere marketing tool that potentially destroys value, then CSR performance might get hindered in the pursuit of shareholder wealth maximisation.

The evidence of the relationship between CSP and financial performance is mixed and the effect of multiple CSR components can be viewed separately as potentially important financial performance determinants.

3.4. Relationship between the corporate social performance and executive compensation

This field of research is relatively new and the findings in the area are heterogeneous. Current studies primarily look at the CEO compensation relation to firm CSP, not focusing on other senior executives. A considerable number of researches argue for a negative relationship between CSP and CEO compensation relying on the intrinsic motivation of CEOs to perform CSR activities. They assume that CEOs are ready to trade-off some of their income for the satisfaction derived from leading a socially responsible firm. This argumentation is in line with the previously described stewardship and stakeholder's theories, as in this case the personal characteristics of the CEO motivate him/her to work in the interests of the biggest stakeholder, the society.

Jian and Lee (2015) study the relationship between CSR investment levels and CEO pay in the US throughout 1992-2011, covering over 1000 companies. They find that there is an optimal investment level for CSR activities that maximizes shareholder value. Executives that stray from this optimal level have their compensation reduced, i.e. there is a negative relationship between variation from optimal level of CSR investment and CEO pay. This shows that CSR investments are viewed as any other type of investment and thus are made only if they generate additional value to the owners. This paper supports the shareholder theory by showing that CSR activities are not treated as a way to maximise potential total outcome to all stakeholders, but rather as a tool to increase shareholder returns.

Cai, Jo, & Pan (2011) study US firms from 1996 to 2010 and find that the lag of CSP adversely affects both total compensation and cash compensation. Their results show that an interquartile increase in CSP is followed by a 4.35% (2.78%) decrease in total (cash) compensation, thus suggesting a negative relation between CSP and CEO compensation. Rekker, Benson and Faff (2014) look further into this issue by trying to account for the impact of CEO gender and the financial crisis on the CSP-compensation relationship. While their

findings are in line with Cai et al (2011), suggesting a negative relation between total compensation and more socially responsible firms, Rekker et al. (2014) argue that this effect weakens once the effects of the financial crisis and CEO gender are accounted for in the model. The authors also look into the subcomponents of CSR, arguing for the great importance of employee relations, environment and diversity dimensions, as increases in these measures lead to significant decreases of 5.2%, 4.5% and 2.3% in total CEO compensation respectively.

Another study that discovers the negative relationship between executive compensation and CSP contrasts a group of high (“good”) CSP firms to a group with low CSP. Miles and Miles (2013) discover that companies identified as “good corporate social performers” have lower levels of executive compensation, similarly to the previous studies. These findings are in line with the stakeholder theory and with stewardship theory as managers in companies with high CSP may be willing to sacrifice a part of their financial compensation for non-monetary motives such as being seen as good corporate citizens and treating all employees fairly and other intangible rewards. Miles and Miles (2013) also look into the link between social and financial performance of the firm, and find a positive relationship between the two, which is in line with McGuire et al. (1988), Waddock and Graves (1997) and Bhagat and Bolton (2008).

Indeed, the relationship between CSR and executive compensation is quite complex and, as opposed to the previously described scheme of CEO intrinsic motivation being the source for CSR activities in the firm, there could be external factors influencing CEO decisions regarding CSR. For instance, incorporation of firm CSR performance metrics into the evaluation of CEO performance and according impact on the salary is one of the options that board members could use. Kruse and Lundbergh (2010) argue for the inclusion of CSP metrics into both executive incentive design and board agenda due to a shifting public attention to ESG issues, while Kruse (2008) found that over 30% out of 174 pan-European companies had already implemented it to a varying extent. A study by Berrone and Gomez-Mejia (2009) provides evidence for environmental performance having a positive effect on CEO total pay. At the same time they discover that, contrary to expectations, the companies that have an explicit environmental pay policy, as well as a special environmental committee, do not reward CEOs for environmental strategies more than the companies without environmental pay and a committee in place, proving the role of these mechanisms as more of a symbol. This study contradicts the findings of Rekker et al. (2014), who find that better environmental performance has a significant negative effect on compensation.

Mahoney and Thorne (2006) use a sample of largest Canadian companies to investigate how boards use executive compensation in order to promote the firms acting in accordance

with environmental and social objectives. They find that different components of the CEO compensation are used for influencing different parts of CSR as defined by Total CSR, CSR strengths (positive aspects of CSR) and CSR weaknesses (negative aspects accordingly). Positive significant relationship is determined between “(1) *Salary and CSR Weaknesses*, (2) *Bonus and CSR Strengths*, (3) *Stock Options and Total CSR*; and (4) *Stock Options and CSR Strengths*” (Mahoney & Thorne, 2006). Accordingly, this study argues for the positive relationship between some of the compensation and CSR components and highlights the importance of executive compensation structure.

Frye, Nelling and Webb (2006) conduct a study on 800 US firms by looking at separate groups of socially responsible and non-responsible firms. CEO compensation analysis provides evidence for a positive link between CEO total pay and firm performance, which, according to obtained results, is weaker in socially-responsible firms as compared to the non-responsible firms.

Overall, previous research provides mixed results depending on the setup of the model and the sample used to determine the relationship between CSP and executive compensation and various other factors.

3.5. International and Swedish executive pay and corporate social responsibility research

Historically executive pay research has been carried out predominantly in the US. This is due to the facts that (1) most countries did not have sufficient executive pay reporting requirements until the turn of the millennia, (2) corporate sustainability research agencies, such as the US-specific Kinder, Lydenberg, and Domini’s Research and Analytics, started appearing not so long ago and (3) because corporate social responsibility research has only recently emerged as a major research topic. Nevertheless, there has been a new wave of executive pay and CSR research. From the 1990’s to the 2000’s the publication number increased from 24 to over 70 publications, with the majority of research being done after 2007. The focus has also shifted from the US as more than 70% of studies are now conducted in other countries (Goyal, Rahman and Kazmi, 2013).

Tosi and Greckhamer (2004) were one of the first ones to examine the cross-country culture effects on executive pay, arguing that executive research was grounded in assumptions and values of the national culture of the US, such as emphasized capitalism and individualism, and thus did not provide significant insight on other countries’ executive compensation inner workings. They use cultural dimensions (uncertainty avoidance, power distance, individualism and masculinity-femininity) developed by Hofstede (1980) and relate them to different parts of

CEO compensation - total pay, ratio of variable pay to total pay and ratio of total CEO pay to low level employee pay. Using a sample enveloping 23 developed and emerging countries throughout 1997-2001, they conclude that both power distance and individualism within a society have a significant positive influence on both the amount of total executive compensation and the variable proportion of total executive pay. While the levels of power distance and individualism in Sweden are fairly similar to the US according to the latest research results by Hofstede, the scores for masculinity show the opposite picture. The US, with a high score of 62 for masculinity, is characterised as a society that is *“driven by competition, achievement and success, with success being defined by the winner / best in field – a value system that starts in school and continues throughout organisational life.”* While Sweden with a score of 5 shows the traits of a feminine society – *“the dominant values in society are caring for others and quality of life. A Feminine society is one where quality of life is the sign of success and standing out from the crowd is not admirable”*. (Hofstede, 2015) This drastic cultural difference in what motivates people might play a significant role in determining executive compensation and corporate social performance, and thus questions the applicability of US-based executive research in a Swedish environment.

Some research into the Nordic markets, specifically Sweden and Norway, was done by Randoy and Nielsen (2002), who investigated the relationship between CEO compensation and various company metrics, including novel measures of corporate governance, such as foreign board membership. They find that foreign board membership and the size of the board positively correlate with total CEO pay, implying that foreign directors tolerate higher executive salaries and that larger boards lose the ability to control (lead to higher) CEO compensation, *ceteris paribus*. Additionally, they discover no significant relationship between CEO compensation and company financial performance, regardless of the choice of performance metrics. However, the research is limited by a small sample of 200 companies throughout 1996-1998, as well as lack of data on long-term and stock compensation plans. Randoy and Oxelheim (2005) continue the research on the same dataset, but decide to focus on the effects of foreign sales intensity, proportion of Anglo-American board membership and company cross-listing on Anglo-American stock markets. They find all three variables to have a positive and highly significant relationship with CEO compensation, supporting the findings of Tosi and Greckhamer (2004). They argue that *“higher CEO compensation found in firms exposed to Anglo-American financial influence – as compared with firms not subject to such influence – reflects institutional contagion, the demand for and supply of viable CEO candidates, and a pay premium for increased risk of dismissal.”*

Elsilä, Kallunki, Nilsson, and Sahlström (2012) look at the connection between firm performance and the elasticity of CEO wealth. Using a data set comprising 915 firm-year observations of 335 Swedish CEOs throughout 2000-2007, the authors find that firm size and CEO age affect CEO wealth elasticity negatively, while higher firm risk environments are associated positively. Furthermore, they observe a positive relationship between higher equity incentives and future accounting returns, but do not identify a significant relationship with future stock returns.

Lastly, Collin, Gustafsson, Pertersson and Smith (2012) investigate the effect of ownership concentration on the use of CEO option compensation. They find that higher ownership concentration leads to less frequent use of options in the executive remuneration package, although it does not influence the level of total compensation. The results of the study are once again limited due to a small number of observations.

It can be seen that the Swedish CEO compensation research is particularly limited in the corporate social responsibility field, where past studies mostly relate to cultural and corporate governance areas. Therefore, there is considerable potential for new investigation that would contribute to existing research.

3.6. Senior executive compensation, company profitability and social performance

Undoubtedly, CEOs play an important role in running the business and accordingly receive a relatively high compensation for their work. However, they are not the only executives who share such characteristics, as so do the other senior executives. Even though the compensation of CEOs gets more public attention, the compensation of other senior executives is also important, particularly since their remuneration levels are usually known among other company employees (Miles and Miles, 2013). This salary visibility makes it important to sustain reasonable compensation levels for not only CEOs, but all of the senior executives.

To the best of our knowledge, there has been only a single article directly investigating the link between senior executive (other than the CEO) compensation and financial and social company performance. This lack of research is attributed to the dominance of CEOs in the US culture, which redirects the focus from other senior executives. However, there have been several articles that have touched upon the theme.

Studies have detailed that the fraction of CEO compensation compared to the total compensation of other senior executives within a company has been increasing (Bebchuk and Grinstein, 2005; Murphy & Zabochnik, 2007). The effects of this trend were investigated by

Bebchuk, Martijn and Peyer (2011), who use a novel measure of CEO pay slice, which equals to the CEO compensation divided by the total compensation of 5 top paid executives in the company. They use over 12,011 firm year observations from the US throughout 1993-2003, spanning 3256 different CEOs. They find that the CEO pay slice was “*correlated with lower (industry-adjusted) accounting profitability, lower stock returns accompanying acquisitions announced by the firm and higher likelihood of a negative stock return accompanying such announcements, higher odds of the CEO receiving a lucky option grant at the lowest price of the month, lower performance sensitivity of CEO turnover, and lower stock market returns accompanying the filing of proxy statements for periods when CEO pay slice increases.*” In short, when CEOs are paid much more than their senior executive colleagues, agency problems arise, which can be seen through lower accounting and stock returns.

Hemingway and MacLagan (2004) argue that the company’s corporate values are driven by the managers’ personal values, i.e. that corporate responsibility is not truly corporate, but rather a collection of managers’ selfless and unrewarded personal effort, thus implying that there should be some sort of correlation between corporate responsibility of the company and the managers’ compensation. There has also been a multitude of research arguing that corporate social responsibility is either egoism of managers (Baier, 1993) or that it is sincere altruism (Drumwright, 1994; Mosley et al, 1996; Macalister, 2001). While there have been a few papers looking into the relationship between executive values and company financial and social performance (Agle, Mitchell, Sonnenfeld, 1999; Berson, Oreg and Dvir, 2008), there has been little to no quantitative research that would connect specific executive personal values to both levels of corporate social responsibility and executive compensation.

Nevertheless, Jiraporn and Chintrakarn (2013) make an effort to connect CEO power (i.e. CEO pay slice in Bebchuk et al, 2011) and corporate social responsibility investments, arguing that a positive association would be in line with the conflict resolution theory, while a negative connection would support the agency theory. Using 4489 firm-year observations from the US throughout 1995-2007, the authors find that the relationship between CEO pay slice and CSR investment is curvilinear, with the optimal point being around 0.33. This means that when CEOs are not that powerful in regard to other senior executives (less than 0.33 CEO pay slice), increasing CEO pay usually increases corporate sustainability investments and the CSR score, while having a relatively overpaid CEO (over 0.33) means a disproportionately large decrease in both CSR investments and CSR score.

The most direct link between corporate social performance (CSP) and senior executives was made by Miles and Miles (2013), who contrast good and bad socially performing company

groups and look at the differences in average CEO pay and average top management team member pay. They find that there are significant differences in both compensation measures between the groups - both CEOs and other executives are paid less if their company was doing well in CSP. The study, however, is extremely limited due to a low number of observations (114), non-scale ranking of CSP (dummy variable), only two control variables (sales and return on sales), low explanatory power of the model (R^2 below 0.07) and etc. Thus, the findings should be used with caution and would benefit from further testing.

The research area of the non-CEO senior executive compensation link to corporate social responsibility has only recently been touched upon in the global context and is virtually non-existent in Swedish research. We therefore see a possibility to contribute by researching the links between CSP and compensation of both CEO and other senior executives. The potential contribution is further bolstered by the lack of non-CEO executive compensation research in general and in particular the lack of executive compensation research on the Swedish market, especially considering that some of Swedish cultural and corporate values are significantly different from the US, thus bringing into question the applicability of US-focused executive compensation research to Sweden (Tosi and Greckhamer, 2004).

4. Methodology and Sample

This section includes the general research approach explanation, the main regression formulas and their brief descriptions, which are then followed by detailed variable definition and construction explanations. Descriptions of the sample, main data characteristics, basic variable correlations and research constraints are also included in this section.

4.1. Research approach

The quantitative approach we use could be considered to be a mix of both deductive and inductive approaches. The deductive part of our approach includes: relying on shareholder, stakeholder, agency and other theories to choose explanatory variables and to explain the observed relationships; and applying a quantitative method. The inductive part of our approach includes: testing the relationships between executive compensation and CSR without forming hypotheses due to the mixed results and lack of robust theories from previous research; and extending the research to a previously untested field of other senior executive compensation and CSR.

The deductive approach allows us to make generalizable conclusions, whereas the addition of inductive side allows us to apply a more creative approach and make additional insights into SEO compensation.

We use a quantitative robust regression method to determine the relationships between the model variables. We employ a methodology similar to that of Rekker et al (2014) and to an extent to that of Mahoney and Thorne (2006), although with the main differences that (1) we only use executive compensation measures as dependent variables, (2) we include variables accounting for Swedish dual share systems and (3) we use additional explanatory variables from other research. Furthermore, we apply a non-linear definition of CSR total Strength/Weakness variables (see CSR variable description later on) in order to account for potential curvilinear relationship between executive compensation and CSR. This is a somewhat novel approach, as such a definition of CSR variables is usually used when the dependent variable is not executive compensation, but CSR measures, e.g. in the paper by Mahoney and Thorne (2006). Traditionally, a numerical CSR scale of 1 to 7 is used when executive compensation is the dependent variable (Callan and Thomas, 2014), but the mixed results of previous research indicate a need for alternative approaches.

In terms of research credibility, we base our choice of quantitative method on previous research in order to establish relationships rather than causations, as well as to achieve a high level of generalizability and comparability of our results, thus our method choice should be considered highly credible. We address transparency concerns by carefully describing all variables' choice, data collection, construction and transformation steps, as well as detailing all methodology steps, deviations, concerns and their fixes, thus making the process as transparent as possible. We account for methodological validity by using primary data sources, i.e. using executive compensation data as stated by the companies, and CSR scores as evaluated by GES Investment Services, which use globally accepted CSR evaluation practices and calculate sustainability indexes for the NASDAQ OMX. We also base most of our methodology, choice and construction of variables on previous research. Finally, the transferability of our study results might be limited due to choice of Swedish and listed companies only, although it does increase the applicability in those specific areas.

4.2. Model specification

Different types of variables were added to the regressions step by step in order to check for potential variable collinearity, robustness of signs and significance levels. The 2 main regressions used in the paper are detailed below.

Equation 1 (CEO):

$$\ln(\text{CEO compensation})_{i,t} =$$

$$\begin{aligned} & \beta_0 + \beta_1 \cdot \text{WeaknessesSocial}_{i,t} + \beta_2 \cdot \text{StrengthsSocial}_{i,t} \\ & + \beta_3 \cdot \text{WeaknessesEnv}_{i,t} + \beta_4 \cdot \text{StrengthsEnv}_{i,t} + \beta_5 \cdot \text{ROA}_{i,t} * \text{WeaknessesSocial}_{i,t} \\ & + \beta_6 \cdot \text{CEO age}_{i,t} + \beta_7 \cdot \text{CEO tenure}_{i,t} + \beta_8 \cdot \text{CEO equity dummy}_{i,t} \\ & + \beta_9 \cdot \ln(\text{Assets})_{i,t} + \beta_{10} \cdot \text{ROA}_{i,t} + \beta_{11} \cdot \frac{P}{B_{i,t}} + \beta_{12} \cdot \frac{D}{A_{i,t}} + \beta_{13} \cdot \text{Board size}_{i,t} \\ & + \beta_{14} \cdot \text{Institutional ownership}_{i,t} + \beta_{15} \cdot \text{Blockholders}_{i,t} + \beta_{16} \cdot \text{DSS}_{i,t} + \gamma_t + \delta_i \\ & + \varepsilon_{i,t} \end{aligned}$$

where $\ln(\text{CEO compensation})_{i,t}$ is the natural logarithm of the total compensation of a CEO, consisting of fixed salary, variable pay and benefits; $\text{WeaknessesSocial}_{i,t}$ – the total number of sub-scores in the Social dimension of CSR in which the company scores poorly, takes values from 0 to 3; $\text{StrengthsSocial}_{i,t}$ – the total number of sub-scores in the Social dimension of CSR in which the company scores high, takes values from 0 to 3; $\text{WeaknessesEnv}_{i,t}$ – the total number of sub-scores in the Environmental dimension of CSR in which the company scores poorly, takes values from 0 to 2; $\text{StrengthsEnv}_{i,t}$ – the total number of sub-scores in the Environmental dimension of CSR in which the company scores high, takes values from 0 to 2; $\text{ROA}_{i,t} * \text{WeaknessesSocial}_{i,t}$ – interaction variable between return on assets (ROA) and Social Weaknesses number; $\text{CEO age}_{i,t}$ – the age of a CEO; $\text{CEO tenure}_{i,t}$ – number of years a CEO has been the head of a specific company; $\text{CEO equity dummy}_{i,t}$ – a dummy which takes the value of 1 when the CEO is compensated via various long-term instruments or plans (stocks, options, warrants, convertibles, etc.), 0 otherwise; $\ln(\text{Assets})_{i,t}$ – a natural logarithm of total assets; $\text{ROA}_{i,t}$ – return on assets (multiplied by 100 to correspond to percentage changes); $P/B_{i,t}$ – price-to-book ratio; $D/A_{i,t}$ – debt-to-assets ratio (multiplied by 100 to correspond to percentage changes); $\text{Institutional ownership}_{i,t}$ – a dummy, takes the value of 1 if the sum of all institutional owners in a company exceeds 20% of capital, 0 otherwise; $\text{Blockholders}_{i,t}$ – a dummy, takes the value of 1 if an individual owner has over 20% of the votes in the company, 0 otherwise; $\text{DSS}_{i,t}$ – a dual share system use dummy, takes the value of 1 when blockholders that have over 20% of votes have over 2 times less capital than votes; γ_t – year dummies; δ_i – industry dummies and $\varepsilon_{i,t}$ – error term.

Equation 2 (av. senior executive officer):

$$\ln(\text{Av. SEO compensation})_{i,t} =$$

$$\begin{aligned} & \beta_0 + \beta_1 \cdot \text{WeaknessesSocial}_{i,t} + \beta_2 \cdot \text{StrengthsSocial}_{i,t} \\ & + \beta_3 \cdot \text{WeaknessesEnv}_{i,t} + \beta_4 \cdot \text{StrengthsEnv}_{i,t} + \beta_5 \cdot \text{SEO number}_{i,t} \\ & + \beta_6 \cdot \text{SEO equity dummy}_{i,t} + \beta_7 \cdot \ln(\text{Assets})_{i,t} + \beta_8 \cdot \text{ROA}_{i,t} + \beta_9 \cdot \frac{P}{B_{i,t}} \\ & + \beta_{10} \cdot \frac{D}{A_{i,t}} + \beta_{11} \cdot \text{Board size}_{i,t} + \beta_{12} \cdot \text{Institutional ownership}_{i,t} \\ & + \beta_{13} \cdot \text{Blockholders}_{i,t} + \beta_{14} \cdot \text{DSS}_{i,t} + \gamma_t + \delta_i + \varepsilon_{i,t} \end{aligned}$$

where $\ln(\text{av. SEO compensation})_{i,t}$ is the natural logarithm of the average compensation of senior executive officers, consisting of fixed salary, variable pay and benefits; $\text{SEO number}_{i,t}$ – the total number of senior executive officers in a company; $\text{SEO equity dummy}_{i,t}$ – a dummy which takes the value of 1 when senior executive officers are compensated via various long-term instruments or plans (stocks, options, warrants, convertibles, etc.), 0 otherwise; $\text{ROA} * \text{WeaknessesSocial}$ interaction dummy is not used, while all other variables are as in Equation 1.

We checked the main regressions for residual normality (see App. 6) and found slight heteroscedasticity (at 10% level), therefore robust regressions were used. Residual scatterplots showed a slight positive trend, indicating that a small bias might be present, but no variable transformations or additional variables managed to invalidate the trend. Therefore, as the methodology of this paper follows already established research and the bias is small, we decided to proceed without making further adjustments.

4.3. Variable descriptions

Dependent variables

We use two dependent variables in the regressions - CEO compensation and average SEO compensation. The CEO compensation measure includes fixed salary, variable pay and benefits, essentially showing current compensation. Benefits rarely exceed 3% of current compensation, thus the compensation measure can be regarded as very similar to cash compensation. In some cases CEOs were even allowed to choose between cash compensation and benefits, exemplifying their interchangeability. The average SEO compensation measure contains identical constituents, but is derived differently. Most companies only disclosed the total number of SEOs and the size of the different elements of their compensation (excluding the CEO). The average SEO compensation was calculated by dividing the total compensation for all SEOs by the SEO number. This approach has a potential drawback, as the senior executive officer number is freely defined by the company, leading to a downward remuneration bias if more employees are defined as senior executive officers. However, the bias is accounted for with a SEO number control variable, thus it should not impact the results. Both variables were transformed using natural logarithms for use in the regression.

CSR score variables

We use Corporate Social Responsibility ratings compiled by GES Investment Services. The ratings cover two major areas: Environment and Social, and their sub-areas: Environmental preparedness and Environmental performance, and Social employee, customer and supplier relations areas (see App. 1 for detailed components). In total, five sub-scores are used in this paper. Governance ratings are not available during the whole sample period, thus appropriate governance variables are used instead. GES CSR scores are rated between A and C, specifically A, A-, B+, B, B-, C+ and C, with A being the best and C the worst.

The treatment of CSR ratings in this paper is identical to the vast majority of previous US-based research using KLD (now MSCI ESG) CSR scores (Mahoney and Thorne, 2006; Callan and Thomas, 2014; Jiraporn and Chintrakarn, 2013; Rekker et al, 2014). Each CSR sub-

score is divided into three parts, with scores of C to C+ meaning a Weakness, B- to B+ being neutral and A- to A meaning a Strength. The number of Weaknesses and Strengths is then counted and summed up to an appropriate total Strength or Weakness variable. For example, a company might have an employee rating of C+, a community rating of B- and a supplier rating of A. In this case, the score of C+ would add 1 to Weaknesses, the score of B- would not be added to any variable, while a score of A would add 1 to Strengths, resulting in total Social Weaknesses and Strengths of 1 and 1 accordingly. The same is done in the case of Environmental sub-scores. Splitting each score into two variables allows to account for non-linearity of the CSR measures to some extent. Due to a different number of sub-scores, Social Weakness and Strength variables range from 0 to 3, while Environmental range from 0 to 2.

Contrary to prior research, the Strengths and Weaknesses of each score are not added up to total CSR Strengths and Weaknesses or net CSR values, as doing so infers some kind of subjective weighing between the Social and Environmental scores, and also often combines significant and insignificant variables, leading to the insignificance of the total CSR measure. Recent research has also found that separate components of CSR often have much higher and more significant effect on executive compensation than the sum of CSR constituents (Berrone and Gomez-Mejia, 2009; Rekker et al, 2014), with some researchers directly recommending foregoing the use of net scores (Cho, Lee and Pfeiffer, 2013).

We made an additional assumption regarding some of the missing sub-score values. In case of missing a single sub-score for either Social or Environmental scores, the assumption was made that the sub-score is equal to the general Social or Environmental score accordingly. This was done in order to maximise the number of observations, otherwise specific industry analysis would be very hard to conduct. In 80% of the cases where all sub-scores were present all of them were equal to the general area score, thus allowing to make assumptions regarding the missing scores. As for the other 20% of cases, multiple regressions were run with the equal sub-score assumption, setting the missing values to neutral (value of 3-5) and excluding observations with missing values altogether. The results yielded only marginally different coefficients, while the signs and the significances of the independent variables stayed the same and the explanatory power of the model increased slightly due to a higher observation number. Therefore, we run all regressions with the assumption that single missing sub-scores were equal to general area scores.

We added an additional interaction variable between return on assets (ROA) and Social Weaknesses variable to the CEO regression after checking for various potential CSR dependencies. It shows the relationship between poor Social CSR scores and executive

compensation on different levels of company profitability (ROA). This variable proved to be the only consistently significant interaction variable between ROA and CSR measures in the CEO regressions, whereas others were insignificant CEO regressions, and all were insignificant in the av. SEO case.

Executive variables

We use five executive variables, three pertaining to the CEO and two to the SEOs. The CEO variables include CEO age (Godos-Díez et al, 2011; Jian and Lee, 2015), tenure (O'Reilly III, Main and Crystal, 1988; Mallette, Middlemist and Hopkins, 1995; Lee and Chen, 2011) and an equity (non-cash) compensation dummy (McGuire et al, 2003; Cai et al, 2011). The CEO age variable is meant to capture past CEO experience and other related effects, while the CEO tenure variable shows how many years the CEO has been the head of a specific company. The tenure numbers were calculated from the year 1999 (6 years before the analysis period), while the tenure for CEOs who were already employed in 1999 and for CEOs in newly listed companies throughout 1999-2013 was checked with various public sources and adjusted manually. The CEO equity compensation dummy takes the value of 1 when the CEO is compensated via various long-term instruments or plans (stocks, options, warrants, convertibles, etc.). Equity compensation is not included in the dependent variable due to lack of data regarding equity compensation amounts. Previous research has often found that including equity compensation in total compensation has little to no effect on the significance or sizes of other independent variable coefficients (Mallette et al, 1995), thus using an equity dummy as a proxy is judged to be reasonable.

The SEO variables include the total number of senior executive officers and the SEO equity dummy. The SEO number variable is used to control for the different company definitions of top executive teams, leading to wider team definitions which might bias the average compensation downwards. The SEO equity dummy is used analogously as in the CEO case.

Company variables

The company variables can be separated into three categories - financial performance, size and other. The financial performance variables accounts for the annual return on assets (ROA). Other financial performance variables, such as return on equity (ROE), lagged values and past 5 year averages of ROA and ROE were considered, but due to high and significant correlations between all measures (see App. 3), as well as due to previous research mainly using and finding ROA to be the most appropriate measure (McWilliams and Siegel, 2000;

McGuire et al, 2003; LaGore, Mahoney and Thorne, 2011), ROA was chosen. The return measure is multiplied by a 100 in order to ease the interpretation of regression results.

We chose assets amount as the company size variable. The choice is spurred both by use in previous research (Mahoney and Thorne, 2006; Rekker et al, 2014) as well as due to the fact that sales were highly volatile for a part of the sample period, as well as intrinsically volatile for some of the sample companies, e.g. real estate or private equity. The variable is transformed using natural logarithms for use in the regressions.

Other company variables include the price to book ratio (P/B) and the debt to assets ratio (D/A) (Javed et al, 2006; Jiraporn and Chintrakarn, 2013). These variables account for expected high future company profitability and for the riskiness of the company capital structure. Usually, Tobin's Q is used to account for future profitability (Rekker et al, 2014; Reddy et al, 2015), but as its use in this case restricted sample size significantly and as it is often interchangeably with the P/B ratio (Ben-Amar, Smaili and Mandzila, 2014; Jian and Lee, 2015), the P/B ratio was used instead. The financial leverage measure is multiplied by a 100 in order to ease the interpretation of regression results.

Governance variables

Governance variables include institutional ownership dummy, blockholder dummy, dual share system use dummy and effective board size. There are two reasons for the inclusion of governance variables, the first being that the CSR scores usually cover Environmental, Social and Governance areas, but in this case Governance scores were not available, thus substitutes had to be used. Second, various governance variables have been found to have a significant effect on executive compensation, thus had to be included to minimize the problem of omitted variable bias.

The institutional ownership dummy equals to 1 if the sum of all institutional owners in a company exceeds 20% of capital. Traditionally, 5% or 10% dummies are used in research (Rekker et al, 2014; Reddy et al, 2015), however, around 90% of sample companies had over 10% of institutional ownership, leading to a very small part of dummies taking a value of 0, therefore a higher threshold of 20% was chosen. Institutional owners were identified using a set of 22 unique keywords (see App. 4) from a list of 50 biggest owners for each company during 1999-2013, covering a total observation number of 124 thousand.

The blockholders dummy covers cases when individual owners have over 20% of the votes in the company. Traditionally capital amounts are used to determine the threshold (Mahoney and Thorne, 2006; Rekker et al, 2014), but due to high prevalence of dual share systems (over 60% of sample), votes were chosen as the threshold determinant.

Another variable, the dual share system use dummy, covers cases when blockholders that have over 20% of votes have over 2 times less capital than votes, showing the detachment between control and rewards. Similar control and ownership detachment measures have been found to be significant for company value and performance in the past (Claessens, Djankov, Fan and Lang, 2002).

The board size variable measures the effect that boards have on limiting excessive executive compensation. Various measures of board size, composition, director stock ownership and independence were used in previous research (Ghosh, 2006; Berrone and Gomez-Mejia, 2009; Oh, Chang and Martynov, 2011). In this paper, we use a novel measure of effective board size. Effective board size is calculated as total compensation paid to regular board members, divided by a standard annual board member compensation, and then adding the chairman and the vice-chairmen. Chairman and vice chairmen compensation is initially subtracted from the total board compensation as they receive different remuneration than regular board members. This measure eliminates the bias originating from companies having huge boards with only a few active members. However, its limits include potential omission of non-paid board members, such as internal management board members, although it could be argued that internal management are not proper agents to enforce control on excessive executive compensation as they do not have voting power.

Year and industry control variables

Nine year dummies (2005-2013, base set to 2005) control for specific annual effects, while 6 industry dummies, (covering industrials, healthcare, IT, financial sector, discretionary products and other; base set to industrials) control for specific sector effects. Due to small observation numbers energy, material, telecommunications, consumer staples and utility sectors were combined into the 'other' sector. Industry dummies are constructed based on the S&P's and MSCI's Global Industry Classification Standard (GICS) identifiers (see App. 5 for detailed description).

4.4. Sample description

The research sample comprises of 710 firm year observations, covering 199 CEOs from 138 companies from the NASDAQ OMX Stockholm stock exchange throughout 2005-2013. The data includes mostly large companies from various industries, although SMEs are included to some extent (see data characteristics). Both currently listed and delisted companies are included in the sample.

We collected the executive compensation and board data for 1999-2013 manually. Company balance sheet data was retrieved from Thomson Reuters Datastream, while financial performance and market data was obtained from Compustat. The company ownership data was retrieved from SIS Ägarservice database. Finally, Corporate Social Responsibility scores were obtained from GES Investment Services. Detailed variable and source information is provided in Appendix 2.

The initial executive compensation data sample included over 3500 firm years from 1999 to 2013, but due to limited ownership data and CSR score data (only available from 2005), it was reduced to around 900 observations. Following the methodology of Mahoney and Thorne (2006), firm-year observations with non-matching financial-calendar years and CEO changes were excluded. Additionally, companies with extreme financial performance deviations (ROA and ROE above absolute 50%), sales deviations (above absolute growth of 300%) and executive team sizes (above 20) were taken out. Only 4 values were excluded due to extreme error terms, which were mainly driven by very low other senior executive team sizes (2) and huge pay jumps (2). The final sample consisted of 710 observations, or 20% of the initial executive compensation sample.

4.5. Main data characteristics

Table 1: Descriptive statistics of the data

Variable	Mean	St. Dev.	Min	P25%	P50%	P75%	Max	Transf.
CEO pay (kSEK)	5,599	4,621	443	2,434	4,034	7,247	26,300	Ln
CEO age	51.14	6.81	33	46	51	56	68	-
CEO tenure	6.93	7.00	1.0	3.0	5.0	8.0	43.0	-
CEO equity d.	60%							-
Av. SEO pay (kSEK)	2,172	1,508	268	1,071	1,714	2,779	10,200	Ln
SEO number	6.70	3.25	1	4	6	9	20	-
SEO equity d.	11%							-
Assets (mSEK)	33,100	165,000	24	874	3,490	24,200	1,860,000	Ln
ROA (%)	7%	9%	-40%	3%	7%	11%	38%	*100
P/B	2.33	2.45	0.27	1.08	1.65	2.72	25.01	-
D/A	0.53	0.18	0.06	0.41	0.56	0.66	0.96	*100
Governance controls								
Board size	6.20	1.57	2	5	6	7	12	-
Institutional d.	0.67							-
Blockholders d.	0.72							-
DSS d.	0.20							-
CSR variables								
Weaknesses Social	1.05	0.97	0	0	1	2	3	-
Strengths Social	0.09	0.33	0	0	0	0	3	-
Weaknesses Env.	0.83	0.86	0	0	1	2	2	-
Strengths Env.	0.20	0.51	0	0	0	0	2	-

From Tables 1 and 2 it can be seen that the sample includes a broad range of companies and CEOs. While the median CEO earns around 4 million SEK per year and is aged 51, with a CEO-tenure length of 5 years, the observations vary significantly, with the ratio of best to worst paid CEO compensation reaching 59. The average SEO compensation usually reaches around 40% of CEO compensation, with both the average and median other senior executive officer number ranging within 6-7. Around 60% of CEOs have various firm equity instruments, but other SEOs own such instruments far less often – only 11% of the time, showing that CEO motives should be closely aligned to the shareholders’.

Table 2: Sample split by industry

<i>Industry</i>	Obs. Nr.	Sample %
Industrial	247	34.8%
Consumer Discr.	82	11.5%
Healthcare	50	7.0%
Financial	118	16.6%
IT	128	18.0%
Other	85	12.0%
Total	710	100%

The sample covers a very broad range of companies, with the companies in the 75th percentile being over 27 times larger than the ones in the 25th percentile. Much lower, but still fairly large variability can be seen in most companies’ ROA (3% to 11%) and P/B metrics (1.08 to 2.72), although generally companies have a fairly narrow range of leverage ratios between 0.41-0.66, while most company boards effectively have 5-7 members. In the vast majority of companies (67%) the sum of institutional owners’ capital exceeds 20%, while around 72% of companies have blockholders with more than 20% of voting rights, with over 27% of these (20% of sample) possessing two times more voting rights than capital, emphasizing the unique Swedish ownership structure. The sample is dominated by industrial companies (34.8 % of sample), with the healthcare sector representing the smallest individual sector (7% of sample).

The Environmental and Social CSP measures show that on average companies tend to have more Weaknesses than Strengths – both scores have total Weaknesses means within the range of 0.8-1.1, while total Strengths means range only within 0.09-0.2. This could be due to strict initial GES evaluation criteria or the limits set in the Strength/Weakness rescoring method, but some companies manage to get full scores in both of the total Strengths variables (3 out of 3 in Social and 2 out of 2 in Environment), thus it does not seem to be the case. Nevertheless, it does seem that most companies are underperforming in both CSR areas, at least according to GES specification.

Table 3. Descriptive statistics of the data. Splits by ROA, size and industries

Variable	ROA > median	ROA < median	Assets > median	Assets < median	Industrial	Healthcare	Consumer discretionary	Financial	IT	Other
CEO pay (kSEK)	6,046	5,153	8,024	3,202	6,646	7,984	6,240	3,566	3,533	6,474
CEO age	51	51.54	52.44	49.86	51.51	53.02	49.84	51.68	48.64	53.26
CEO tenure	8	6.25	7.27	6.59	7.17	8.48	7.28	8.45	5.85	4.51
CEO equity d.	57%	63%	62%	57%	60%	68%	78%	52%	59%	48%
Av. SEO pay (kSEK)	2,170	2,175	2,976	1,378	2,679	2,347	2,338	1,648	1,470	2,224
SEO number	7	6.49	7.43	5.98	6.77	5.71	7.84	5.95	6.16	7.83
SEO equity d.	12%	10%	17%	4%	16%	12%	20%	3%	7%	5%
Assets (mSEK)	15,600	50,600	65,500	1,090	20,900	10,600	11,000	116,000	4,160	31,200
ROA (%)	13%	1%	7%	6%	8%	4%	9%	7%	6%	5%
P/B	2.88	1.78	2.09	2.57	2.55	3.56	2.72	1.15	2.49	1.97
D/A	0.49	0.56	0.62	0.44	0.57	0.40	0.55	0.58	0.43	0.53
Governance controls										
Board size	6.02	6.38	6.86	5.55	6.25	5.61	6.39	6.50	5.52	6.84
Institutional d.	0.69	0.65	0.76	0.58	0.71	0.88	0.79	0.42	0.65	0.68
Blockholders d.	0.71	0.72	0.71	0.72	0.82	0.80	0.67	0.65	0.52	0.79
DSS d.	0.20	0.19	0.20	0.19	0.36	0.34	0.16	0.01	0.13	0.04
CSR variables										
Weaknesses Social	1.07	1.02	0.84	1.25	1.12	1.50	0.89	1.24	0.93	0.64
Strengths Social	0.06	0.12	0.18	0.01	0.03	0.00	0.16	0.10	0.01	0.36
Weaknesses Env.	0.86	0.79	0.37	1.28	0.66	1.40	0.59	0.78	1.51	0.25
Strengths Env.	0.17	0.23	0.34	0.06	0.27	0.02	0.18	0.03	0.02	0.62
Sample industry composition										
Industrial	40%	30%	33%	36%						
Consumer Disc.	12%	11%	14%	9%						
Healthcare	6%	8%	5%	9%						
Financial	14%	19%	28%	5%						
IT	17%	19%	2%	34%						
Other	10%	14%	18%	6%						
Observation number	355	355	355	355	247	50	82	118	128	85

Some of the most interesting observations from the disaggregated data (Table 3) are that IT and financial company CEOs and SEOs are some of the worst paid (65%-75% of average pay), even though the companies have significantly different asset amounts: financial companies have three times more than average, while IT companies have 8-9 times less. This could be attributed to the companies' specific asset structure – financial companies have substantial amounts of deposits and loans, while IT companies have very few assets. IT and financial company P/B ratios are also significantly different: 2.49 and 1.15 accordingly. Some of the best paid CEOs come from the healthcare sector (av. compensation 42% above average) with the highest company P/B ratios from the sample (3.56), although healthcare firms perform well below sample average (4% av. ROA compared to 7% average) and most have significant amount of institutional owners (88%) and blockholders (80%). This could be explained by high

control and ownership detachment (around 34% of companies have blockholders with two times less capital than votes), allowing CEOs much room for seeking personal benefit.

Better performing companies (ROA above median) tend to have slightly less CSR Strengths and marginally more CSR Weaknesses, although the differences are less than 0.1 in all cases. Smaller than median companies, however, perform substantially worse than bigger companies in the Environment area, with total Weaknesses scores higher by 0.6, while total Strengths are lower by 0.2. This might be explained by the fact that bigger companies are usually industrials that tend to be scrutinized by both the government and the society, thus having good Environmental policies is almost a necessity, while smaller companies are dominated by IT, who have little direct connection to the environment and are not scrutinized as much, thus allowing them to pay less attention to the area.

The overall industry variation according to CSP scores is high and all except for IT companies tend to perform slightly worse in the Social area (even after taking account the difference in scales). The worst performers in both areas are healthcare companies (average total Weaknesses scores of 1.4-1.5, total Strengths around 0), while the best performers are designated as the “other” sector, specifically energy, materials, consumer staples, utilities and telecommunications companies (average total Weaknesses scores of 0.25-0.65, total Strengths around 0.36-0.62), having the best scores in all four variables. Most of these companies are extremely energy intensive, global, large (above 31 billion SEK, top 25% of sample), have shorter CEO tenures (4.5 years compared to average of 6.9), small percentage of equity incentives for both CEOs and SEOs (48% and 5% compared to sample averages of 60% and 11% accordingly), most have blockholders (around 79% compared to 72%), only a few of which have detached control from ownership (4% to 20%) and slightly larger boards (7.8 to average of 6.7). Potential explanations why such companies have higher CSP scores are that they are often partially government owned or are international, thus are subjected to higher moral, legislative and other standards, the smaller share of equity compensation might encourage CEOs to concentrate not solely on shareholder wealth enhancing strategies, but to pursue overall stakeholder value enhancing strategies instead, while more big, but fewer detached owners and bigger boards might signal more active control and better corporate governance, which in turn can lead to better practices, CSR included.

4.6. Variable correlations

The variable correlation table in Appendix 7 shows that both of the logarithmic expressions of CEO compensation and average SEO compensation have significant

correlations with almost all variables, indicating that the variables chosen for the regressions should have high explanatory power. Correlations between the independent variables related to company size, such as Ln(assets), board size and D/A are generally around 0.5 or lower, while relationships between other independent variables are usually lower than 0.3, therefore there should not be major multicollinearity issues. All CSR variables appear to have highly significant (at 1%), substantial correlations (between 0.1 and 0.5) with CEO and average SEO compensation variables, with Weaknesses having negative signs and Strengths positive signs. These suggest that good CSR performance might be connected to higher executive compensation, while lower CSP might correspond to lower executive compensation. Additionally, the CSR correlations with both compensation variables seem to be nearly identical, suggesting that both CEO and average SEO compensation follow similar patterns with regard to CSR. These initial observations, however, are indicative at best, and no conclusions can be made using them, as intra-variable correlations are not accounted for.

4.7. Research constraints

Choice of method constraints

With regards to research credibility, we chose to use a quantitative research method both due to heavy use in previous research and because it allows us to make generalizable conclusions regarding the connection between executive compensation, CSP and other variables. Additionally, the results can be measured in numerical terms, allowing for easier comparison and applicability in other research and in practice. The drawback of this method in this case is that we cannot directly observe the directions of inter-variable causal relationships and the shapes they take, which would be easier to analyse through the use of a qualitative approach by interviewing CEOs, SEOs and other actors and interpreting the effects of their motivations, actions and reactions to certain variables and topics, such as CSR practices. Therefore, we are limited to determining relationships and suggesting potential explanations and are not able to distinguish the causations between variables. However, as our goal is not to establish causations, but rather to explore previously not researched areas in search for relationships, and to compare findings with previous research, we consider our choice of method to be highly credible.

Methodological constraints

We strive to achieve a high level of validity and transparency in our study by building on methodologies of published and well-reviewed research, clearly describing the construction and application of all variables and pointing out all potential associated drawbacks.

The potential validity limitations that pertain to our main variables, i.e. executive compensation and CSR scores, are as follows. Our executive compensation variables are constructed based on company reports, which show the executive compensation as an expense and not as the amount the executive actually receives. Additionally, financial instrument compensation numbers are not included in our variables. Furthermore, other executive income that is received not from the company is not considered, which would affect the tax rates that the executive is liable to pay. Therefore, there might be several validity biases in terms of our compensation variables, but the data required to solve it is usually extremely hard to obtain and is often not used in other research. Regarding the CSR variables, the scoring of CSR is quite subjective, although global standards have emerged. Moreover, the importance of different CSR score components might vary across industries, thus bringing into question the generalizability of findings.

There are several other methodological constraints, such as endogeneity, omitted variable bias and spurious correlations, that limit the validity of almost all executive compensation research to varying extents and which we could not address or could address only partially due to data or theoretical limitations.

First of all, endogeneity between company financial performance, executive pay and CSR is a potential bias that cannot be accounted for due to data limitations. In order to account for multiple way causalities and autocorrelation between the aforementioned variables, lagged variables, fixed effects or instrumental variables should be used. In this case, there is not enough additional data for instrumental variables, nor a theoretical basis on what variables should be chosen as such, as most variables could potentially affect all three measures. Lagged variables for executive compensation are not used as it is the dependent variable, whereas sample CSR variables change only slightly and only in a few cases over time, thus there is not enough variability to use its lagged values. The same CSR variable stickiness, in addition to short CEO tenures, prevents us from running fixed effect regressions. Lagged values of financial performance alone would not account for the endogeneity, in addition to being less significant than current performance measures. Lagged values of other variables are either very stable over time or insignificant, thus there is no potential way to account for endogeneity. Only some of the most recent research tries to account for it using immense datasets and complex models (Javed et al, 2006; Jiraporn and Chintrakarn, 2013; Callan and Thomas, 2014), but even in those cases authors acknowledge that they could not deal with it fully.

The second limit is omitted variable bias. We reviewed a large body of literature and compiled a list of variables found to have a significant link to executive pay. However, due to

lack of data not all potential variables, such as board independence ratio (Rekker et al, 2014), CEO education (Manner, 2010), CEO acting as chairman dummy (Reddy et al, 2015), R&D expenditure (Lee and Chen, 2011) and others, were included. Perhaps the most important variables that could not be covered are the executive personal characteristics, such as ability, altruism, competitiveness and so on, which could potentially explain CSR scores, company performance and executive compensation size. The data for CEOs is extremely hard to acquire, whereas for other senior executive officers the data problem is even larger, thus we could not use such measures. However, the final set of variables used in the regressions covers all major areas related to executive compensation, thus omitted variable bias should not pose much of a problem.

Lastly, the third limit is the potential of spurious correlation. It is not easy to establish even a direct theoretical relationship between executive pay and CSR values, therefore the measures could actually be affected by some third variable, making it seem that a causal relationship exists between the two. Only rigorous and exhaustive testing of a broad range of variables could be done in order to account for this potential limit, but it is simply too extensive to be accounted for within a scope of a single paper.

5. Estimation results

The Tables 4 and 5 contain the main CEO and average CEO compensation regressions accordingly. Each table contains up to 6 regressions, starting with the most basic, covering independent variables of company size, profitability and CSR variables (regressions #1 and #17), then adding year and industry control variables (#2 and #18), executive variables (#3 and #19), market and leverage variables (#4 and #20), governance variables (#5 and #21) and, finally, the interaction variable in the CEO regression (#6). Regression splits based on industry are provided later on, whereas splits based on size and profitability were conducted for robustness checks can be found in Appendices 8 and 9.

No initial expectations of variable effect signs are outlined, as previous research' results have been highly mixed and the sample cultural context is substantially different from previously analysed companies' environment, therefore making relationship forecasts highly subjective.

5.1. The CEO compensation regressions

Table 4: CEO compensation regression results

		Dependent variable: Ln (CEO compensation)					
Regression Nr.		(1)	(2)	(3)	(4)	(5)	(6)
CSR variables							
Weaknesses Social	β_1	-0.0855 *** (0.0229)	-0.0506 *** (0.0176)	-0.0450 ** (0.0175)	-0.0519 *** (0.0176)	-0.0500 *** (0.0171)	-0.0200 (0.0204)
Strengths Social	β_2	-0.2588 *** (0.0714)	-0.1653 *** (0.0539)	-0.1833 *** (0.0538)	-0.1917 *** (0.0538)	-0.1710 *** (0.0524)	-0.1766 *** (0.0523)
Weaknesses Env.	β_3	-0.0114 (0.0312)	-0.0512 ** (0.0242)	-0.0468 * (0.0241)	-0.0538 ** (0.0243)	-0.0560 ** (0.0236)	-0.0517 ** (0.0235)
Strengths Env.	β_4	0.1023 ** (0.0481)	-0.0731 * (0.0373)	-0.0817 ** (0.0373)	-0.0816 ** (0.0375)	-0.1052 *** (0.0366)	-0.0913 ** (0.0368)
ROA*Weak. Social	β_5						-0.0047 *** (0.0016)
Executive controls							
CEO age	β_6			-0.0002 (0.0024)	0.0007 (0.0024)	-0.0006 (0.0023)	-0.0016 (0.0023)
CEO tenure	β_7			-0.0124 *** (0.0023)	-0.0130 *** (0.0024)	-0.0075 *** (0.0025)	-0.0068 *** (0.0025)
CEO equity d.	β_8			0.0255 (0.0315)	0.0405 (0.0315)	0.0484 (0.0306)	0.0477 (0.0305)
Company controls							
Ln (Assets)	β_9	0.2535 *** (0.0126)	0.3291 *** (0.0104)	0.3301 *** (0.0104)	0.3340 *** (0.0113)	0.2991 *** (0.0127)	0.2915 *** (0.0129)
ROA*100	β_{10}	0.0072 *** (0.0022)	0.0063 *** (0.0017)	0.0079 *** (0.0017)	0.0030 * (0.0018)	0.0029 * (0.0017)	0.0078 *** (0.0025)
P/B	β_{11}				0.0423 *** (0.0067)	0.0397 *** (0.0066)	0.0398 *** (0.0066)
D/A*100	β_{12}				-0.002 ** (0.001)	-0.002 ** (0.001)	-0.002 (0.001)
Governance controls							
Board size	β_{13}					0.0256 ** (0.0111)	0.0259 ** (0.0111)
Institutional d.	β_{14}					0.1662 *** (0.0389)	0.1810 *** (0.0391)
Blockholders d.	β_{15}					-0.0930 ** (0.0368)	-0.0843 ** (0.0368)
DSS d.	β_{16}					0.1544 *** (0.0415)	0.1700 *** (0.0417)
Industry dummies		No	Yes	Yes	Yes	Yes	Yes
Year Dummies		No	Yes	Yes	Yes	Yes	Yes
Constant	β_0	9.7376 ***	8.0932 ***	8.1245 ***	8.0968 ***	8.6434 ***	8.7662 ***
R ² adj.		0.435	0.624	0.636	0.648	0.659	0.665
P values, H0: $\beta_x = \beta_y$							
F-test $\beta_2 = \beta_1$		0.017	0.039	0.013	0.012	0.025	0.005
F-test $\beta_2 = \beta_5$							0.001
F-test $\beta_3 = \beta_4$		0.030	0.604	0.406	0.508	0.232	0.336

Note: Standard errors are included in the parentheses. Asterisks correspond to significance levels of the variables: one asterisk denotes a P value of <0.10, two asterisks denote a P value of <0.05 and three asterisks denote a P value of <0.01

All variables except for CEO age, CEO equity dummy, D/A and Weaknesses Social are significant at least at 10% level when year and industry control variables are present. All CSR variables have negative relationships with CEO compensation (although when no industry and year dummies are present, Environmental Strengths coefficient is positive), regardless of whether they measure Strengths or Weaknesses, although Strengths measures seem to have more negative relationships than Weaknesses. The difference of coefficient size is confirmed by F-tests at 1% level for Social variables in regression #6, but due to overlap of standard deviations was not confirmed for Environmental variables. The Social Weaknesses variable turns insignificant once its interaction variable with ROA is included, showing that the effect is conditional on profitability, but the negative sign for CSR variables' coefficients prevails.

CEO tenure has a small negative relationship with CEO, while company size is highly and positively associated with CEO pay, with bigger companies paying their CEOs more. Company profitability (ROA) is also positively associated with compensation, although the effect temporarily diminishes both in size and significance in regressions #4 and #5 when the measures of expected future performance (P/B) and financial leverage (D/A) are included, but it recovers once the interaction variable with Social Weaknesses is included. Expectations of future performance (P/B) tend to affect CEO compensation much more positively than current profitability (ROA), whereas the D/A variable becomes insignificant once the interaction variable is included. Effective board size has a positive relationship with CEO pay, while high institutional ownership is, surprisingly, positively and highly associated with CEO pay. Presence of blockholders is negatively associated with CEO pay, while blockholders with detached control from capital have a positive relationship with CEO pay.

Looking at the industry splits (Table 5), and, to some extent, profitability and size splits (App. 9), we can see that there are large variations between which variables are significant and how large the effects are, even with a few occasions of coefficient signs switching. However, a few clear trends can be seen. When significant, CSR variables and financial leverage (D/A) have negative relationships with CEO compensation, whereas asset size, board size, P/B and institutional ownership variables tend to have positive ones. There are a few exceptions in the CSR interaction variable relationships due to negative or insignificant ROA coefficients in regressions #8 and #9. Moreover, once the CSR interaction variable is included, the Social Weakness coefficient becomes positive and significant at 5% level (reg. #10), although the effect is on average negated by the interaction variable – av. financial industry ROA of 7% multiplied by av. financial industry Social Weakness of 1.24 equals 0.23, close to the av. effect

of the Social Weakness variable, which is 0.29 (1.24 multiplied by β_5 of 0.235). The difference of Environmental variable coefficients was verified at 5% level in reg. #7, #8, #10.

Table 5. CEO regression splits by industry

		Dependent variable: Ln (CEO compensation)					
Sample:		Industrials	Healthcare	Cons. Disc.	Finance	IT	Other
Regression Nr.		(7)	(8)	(9)	(10)	(11)	(12)
CSR variables							
Weaknesses Social	β_1	-0.0576 (0.0354)	-0.0299 *** (0.0056)	-0.3009 *** (0.0609)	0.2350 ** (0.1053)	0.0043 (0.0393)	0.0291 (0.0709)
Strengths Social	β_2	-0.1136 (0.1285)	-	-0.0327 (0.1147)	-0.2273 * (0.1158)	-	-0.0078 (0.0780)
Weaknesses Env.	β_3	-0.0055 (0.0369)	0.0069 (0.0079)	-0.1648 * (0.0967)	-0.2619 *** (0.0635)	-0.1823 *** (0.0539)	-0.0816 (0.0693)
Strengths Env.	β_4	-0.1174 ** (0.0459)	-0.6162 *** (0.0289)	-0.1054 (0.0844)	0.3059 (0.2348)	-0.3097 (0.2180)	-0.1178 (0.0731)
ROA*Weak. Social	β_5	-0.0043 (0.0033)	0.0015 *** (0.0004)	0.0303 *** (0.0037)	-0.0266 ** (0.0108)	-0.0109 *** (0.0031)	-0.0148 ** (0.0064)
Executive controls							
CEO age	β_6	-0.0046 (0.0036)	-0.0115 *** (0.0006)	0.0124 ** (0.0053)	-0.0091 (0.0060)	0.0159 *** (0.0059)	-0.0073 (0.0101)
CEO tenure	β_7	-0.0066 * (0.0035)	-0.0063 *** (0.0013)	-0.0152 ** (0.0062)	-0.0341 *** (0.0081)	0.0148 ** (0.0063)	-0.0101 (0.0137)
CEO equity d.	β_8	0.0143 (0.0458)	-0.1547 *** (0.0073)	0.1955 * (0.0989)	0.4663 *** (0.0924)	0.0839 (0.0751)	0.2543 *** (0.0688)
Company controls							
Ln (Assets)	β_9	0.3118 *** (0.0197)	0.5108 *** (0.0030)	0.1710 *** (0.0484)	0.3057 *** (0.0474)	0.3662 *** (0.0373)	0.2041 *** (0.0346)
ROA*100	β_{10}	0.0067 (0.0057)	-0.0159 *** (0.0006)	-0.0033 (0.0065)	0.0257 (0.0214)	0.0121 *** (0.0041)	0.0365 *** (0.0095)
P/B	β_{11}	0.0497 *** (0.0089)	0.0799 *** (0.0015)	0.0488 ** (0.0203)	0.3119 *** (0.0767)	0.0212 (0.0140)	-0.0174 (0.0289)
D/A*100	β_{12}	-0.0079 *** (0.0020)	-0.0109 *** (0.0002)	-0.0085 * (0.0046)	-0.0133 *** (0.0028)	-0.0017 (0.0022)	0.0000 (0.0028)
Governance controls							
Board size	β_{13}	0.0713 *** (0.0209)	0.0903 *** (0.0029)	0.0570 ** (0.0255)	-0.0096 (0.0328)	0.0093 (0.0302)	0.0059 (0.0280)
Institutional d.	β_{14}	0.1315 ** (0.0617)	0.2741 *** (0.0129)	0.1900 (0.1401)	0.3934 *** (0.1086)	-0.0752 (0.1145)	0.0542 (0.0694)
Blockholders d.	β_{15}	-0.0751 (0.0646)	0.4092 *** (0.0095)	-0.0957 (0.0897)	-0.1766 (0.1085)	-0.2673 *** (0.0762)	0.0178 (0.0820)
DSS d.	β_{16}	0.2481 *** (0.0505)	-0.0623 *** (0.0136)	-1.2657 *** (0.1452)	-	0.1217 (0.1485)	-0.1058 (0.1770)
Industry dummies		No	No	No	No	No	No
Year Dummies		Yes	Yes	Yes	Yes	Yes	Yes
Constant	β_0	8.6440 ***	4.9644 ***	11.045 ***	8.3443 ***	6.9030 ***	10.761 ***
R ² adj.		0.768	0.653	0.752	0.565	0.658	0.673
Observation number		247	50	82	118	128	85
P values, H0: $\beta_x = \beta_y$							
F-test $\beta_2 = \beta_1$		0.685	-	0.057	0.001	-	0.743
F-test $\beta_2 = \beta_5$		0.396	-	0.583	0.092	-	0.929
F-test $\beta_3 = \beta_4$		0.028	0.000	0.645	0.021	0.556	0.711

Note: Standard errors are included in the parentheses. Asterisks correspond to significance levels of the variables: one asterisk denotes a P value of <0.10, two asterisks denote a P value of <0.05 and three asterisks denote a P value of <0.01

The overall explanatory power of the models is fairly high, ranging around 0.56-0.67, whereas for industrial companies alone it reaches 0.77. Considering that previous research usually achieved R^2 around of 0.2-0.4, only once reaching 0.7 (O'Reilly III et al, 1988; Berrone and Gomez-Mejia 2009; Cai et al, 2011; Jian and Lee, 2015), this means that either the choice of the variables resulted in the model specification that has more explanatory power than the models from the previous research on the topic, or that the Swedish CEOs are compensated according to different, more easily identifiable trends.

5.2. The average SEO compensation regressions

Nine out of 14 independent variables are significant in the main av. SEO compensation regression (Table 6; reg. #21). They hold the same signs and are significant regardless of what variables are included in the regressions.

Only three out of four CSR variables are found to be significant, with Environmental Weaknesses being insignificant, while Environmental Strengths only become strongly significant (at 1% level instead of 10%) once governance variables are introduced. All CSR variables are negatively associated with av. SEO compensation. Social and Environmental CSR variable pairs have significantly different coefficients at 5% level.

The SEO team size seems to have a negative association with av. SEO pay, while the SEO equity dummy, interestingly, has a positive relationship with av. SEO pay, whereas in CEO case it was insignificant. Company asset size appears to have a similar positive relationship with av. SEO pay as in the CEO case, although both current and future profitability measures (ROA and P/B) are not significant. The D/A ratio retains the same negative sign, but is not affected by additional interaction variables and remains significant.

Neither effective board size nor institutional ownership have significant relationships with av. SEO compensation, whereas blockholder presence and blockholder detachment of control and ownership have the same (negative and positive accordingly) relationships with av. SEO compensation as in the CEO case.

Once the av. SEO compensation regressions are disaggregated into industry (Table 7) profitability and size splits (App. 9), we can see that some of the relationships are similar to those of CEOs', although variable signs, coefficient sizes and significance levels are even more volatile. All three previously significant CSR variables and the blockholder presence variable are significantly and negatively associated with av. SEO pay, with the exception of weakly significant positive blockholders coefficient in regression #27, which may be driven by a mixed sample of other industry classification. Asset size, future profitability (P/B) and blockholder

control and ownership detachment variables appear to have significant positive relationships with av. SEO compensation.

Table 6: Average SEO compensation regression results

		Dependent variable: Ln (Av. SEO compensation)				
Regression Nr.		(17)	(18)	(19)	(20)	(21)
CSR variables						
Weaknesses Social	β_1	-0.0667 *** (0.0181)	-0.0297 ** (0.0140)	-0.0299 ** (0.0138)	-0.0311 ** (0.0138)	-0.0294 ** (0.0136)
Strengths Social	β_2	-0.3042 *** (0.0565)	-0.1632 *** (0.0430)	-0.1508 *** (0.0421)	-0.1628 *** (0.0419)	-0.1548 *** (0.0413)
Weaknesses Env.	β_3	-0.0328 (0.0247)	-0.0072 (0.0193)	-0.0044 (0.0189)	-0.0085 (0.0189)	-0.0055 (0.0186)
Strengths Env.	β_4	0.0485 (0.0381)	-0.0592 ** (0.0298)	-0.0561 * (0.0292)	-0.0565 * (0.0291)	-0.0770 *** (0.0289)
Executive controls						
SEO number	β_5			-0.0110 *** (0.0039)	-0.0129 *** (0.0039)	-0.0133 *** (0.0038)
SEO equity d.	β_6			0.1438 *** (0.0402)	0.1395 *** (0.0400)	0.1033 *** (0.0398)
Company controls						
Ln (Assets)	β_7	0.2197 *** (0.0099)	0.2895 *** (0.0083)	0.2861 *** (0.0085)	0.2958 *** (0.0092)	0.2884 *** (0.0102)
ROA*100	β_8	0.0005 (0.0018)	-0.0012 (0.0013)	-0.0004 (0.0013)	-0.0017 (0.0014)	-0.0015 (0.0014)
P/B	β_9				0.0094 * (0.0053)	0.0069 (0.0052)
D/A*100	β_{10}				-0.0021 *** (0.0008)	-0.0022 *** (0.0008)
Governance controls						
Board size	β_{11}					0.0100 (0.0087)
Institutional d.	β_{12}					0.0459 (0.0295)
Blockholders d.	β_{13}					-0.0959 *** (0.0290)
DSS d.	β_{14}					0.1361 *** (0.0328)
Industry dummies		No	Yes	Yes	Yes	Yes
Year Dummies		No	Yes	Yes	Yes	Yes
Constant	β_0	9.6674 ***	8.1754 ***	8.2988 ***	8.2174 ***	8.3364 ***
R ² adj.		0.471	0.647	0.651	0.647	0.656
P values, H0: $\beta_x = \beta_y$						
F-test $\beta_1 = \beta_2$		0.000	0.003	0.005	0.002	0.032
F-test $\beta_3 = \beta_4$		0.050	0.123	0.117	0.141	0.028

Note: Standard errors are included in the parentheses. Asterisks correspond to significance levels of the variables: one asterisk denotes a P value of <0.10, two asterisks denote a P value of <0.05 and three asterisks denote a P value of <0.01

Table 7. Average SEO compensation regression splits by industry

		Dependent variable: Ln (Av. SEO compensation)					
Sample:		Industrials	Healthcare	Cons. Disc.	Finance	IT	Other
Regression Nr.		(22)	(23)	(24)	(25)	(26)	(27)
CSR variables							
Weaknesses Social	β_1	-0.0931 *** (0.0220)	-0.0710 (0.0509)	0.0216 (0.0678)	0.0507 (0.0533)	-0.0186 (0.0241)	0.0685 (0.0586)
Strengths Social	β_2	-0.2855 ** (0.1110)	- (0.1110)	-0.0376 (0.1854)	-0.0541 (0.0972)	- (0.1110)	-0.0448 (0.0692)
Weaknesses Env.	β_3	0.0593 * (0.0326)	-0.0370 (0.0717)	-0.2262 (0.1547)	0.0270 (0.0540)	-0.0630 * (0.0359)	0.2188 *** (0.0685)
Strengths Env.	β_4	-0.0195 (0.0394)	- (0.0394)	-0.0097 (0.1446)	0.2098 (0.2083)	-0.2885 ** (0.1376)	-0.0596 (0.0613)
Executive controls							
SEO number	β_5	-0.0317 *** (0.0064)	-0.0701 *** (0.0199)	0.0444 ** (0.0188)	-0.0060 (0.0114)	0.0062 (0.0078)	-0.0339 *** (0.0084)
SEO equity d.	β_6	0.0074 (0.0577)	-0.0401 (0.0821)	0.0635 (0.1524)	-0.0209 (0.2238)	0.0984 (0.0813)	-0.0326 (0.1611)
Company controls							
Ln (Assets)	β_7	0.2902 *** (0.0174)	0.3303 *** (0.0233)	0.1290 (0.0807)	0.3798 *** (0.0366)	0.3411 *** (0.0233)	0.2445 *** (0.0302)
ROA*100	β_8	-0.0040 (0.0029)	-0.0062 ** (0.0026)	0.0097 (0.0097)	-0.0076 (0.0068)	-3.1775 (0.0020)	0.0097 *** (0.0035)
P/B	β_9	0.0090 (0.0077)	-0.0064 (0.0125)	-0.0159 (0.0326)	0.0698 (0.0660)	-0.0139 (0.0087)	0.0319 (0.0253)
D/A*100	β_{10}	-0.0009 (0.0017)	-0.0075 *** (0.0022)	0.0103 (0.0069)	-0.0097 *** (0.0020)	0.0024 * (0.0013)	0.0082 *** (0.0026)
Governance controls							
Board size	β_{11}	0.0245 (0.0165)	0.0863 *** (0.0271)	0.1268 *** (0.0396)	-0.0582 ** (0.0261)	0.0166 (0.0192)	-0.0583 ** (0.0254)
Institutional d.	β_{12}	0.0600 (0.0480)	-0.1704 (0.1101)	0.0226 (0.1909)	0.0850 (0.0882)	-0.1486 ** (0.0665)	-0.0644 (0.0575)
Blockholders d.	β_{13}	-0.1184 ** (0.0562)	-0.0929 (0.0766)	0.1940 (0.1547)	-0.1878 ** (0.0914)	-0.0770 * (0.0459)	0.1274 * (0.0678)
DSS d.	β_{14}	0.1935 *** (0.0433)	0.3083 ** (0.1214)	0.1436 (0.1770)	- (0.1770)	0.2016 ** (0.0912)	0.4405 *** (0.1641)
Industry dummies		No	No	No	No	No	No
Year Dummies		Yes	Yes	Yes	Yes	Yes	Yes
Constant	β_0	8.3302 ***	7.6619 ***	9.6318 ***	5.9512 ***	6.7610 ***	8.7917 ***
R ² adj.		0.743	0.871	0.575	0.59517	0.597	0.656
Observation number		247	50	82	118	128	85
P values, H0: $\beta_x = \beta_y$							
F-test $\beta_1 = \beta_2$		0.101	-	0.770	0.308	-	0.243
F-test $\beta_3 = \beta_4$		0.073	0.173	0.318	0.395	-	0.004

Note: Standard errors are included in the parentheses. Asterisks correspond to significance levels of the variables: one asterisk denotes a P value of <0.10, two asterisks denote a P value of <0.05 and three asterisks denote a P value of <0.01

It is important to mention that only in the industrial company subsample most of the CSR variables were significant, even though only the Social variables had the same negative signs.

Overall regressions' explanatory power is around 0.66, quite similar to that of CEO regressions, indicating that the same variables can explain both CEO and SEO cash

compensation sizes fairly well. The various industry regression splits, however, tend to have slightly lower R^2 ranging 0.56-0.66, with industrial companies reaching a high of 0.71, whereas the R^2 0.87 of healthcare companies is likely driven by a low observation number.

6. Discussion

There is a fair number of insights that can be made from the regressions, both in relation to the CSR variables and to the other explanatory variables. Therefore the discussion section is split into two parts, the first answering RQ 1 and 2, and the second addressing RQ 3.

Primary CSR-related findings pertain to: the curvilinear (concave) negative relationship between CSR variables and executive compensation, the size of which in the CEO and poor Social CSR scores case is amplified by company profitability levels; the lack of Environmental variables' significance in SEO case; and the potentially different CSR and executive compensation links across different industries which might not be accounted for with industry dummies. Other findings indicate that some of the links between compensation and other non-CSR variables are different in cases of CEO and SEO. All these points and more are discussed further on in greater detail.

6.1. Corporate Social Responsibility and executive compensation

There are five main observations that can be made regarding the CSR results. First of all, we see that whenever significant, both Social and Environment CSR variables have negative relationships with executive compensation. On the few occasions when they are positive the relationships appear unlikely due to low significance levels (10% significance level for Environmental Weaknesses in reg. #22, Table 7), lack of control variables (reg. #1, Table 4), negative ROA (reg. #8 and #9, Table 4) or due to mixed industry definitions (reg. #27, Table 7). While this does not prove that CSR affects executive compensation negatively, it does certainly point towards it, especially considering that executives of firms performing very poorly or very well in just one of the 5 CSR sub-scores could have smaller compensation by 5-18% for CEOs (median 200-700 kSEK) and 3-15.5% for av. SEOs (median 50-265 kSEK). Findings of the negative relationship between CSP and executive compensation are in line with Cai et al (2011), Miles and Miles (2013), Rekker et al (2014), and Jian and Lee (2015). From the theory point of view, negative relationship between CSP and executive compensation could be explained with stakeholder theory to the extent that socially responsible firms might strive to balance compensation across the firm and emphasize that profit, both individual and corporate, must be earned within a system that is fair and balanced for all stakeholders.

Stewardship theory, which suggests that moral values of the managers might place the long-term interests of the group higher than self-interest, could also be a part of the reasoning behind the smaller compensation.

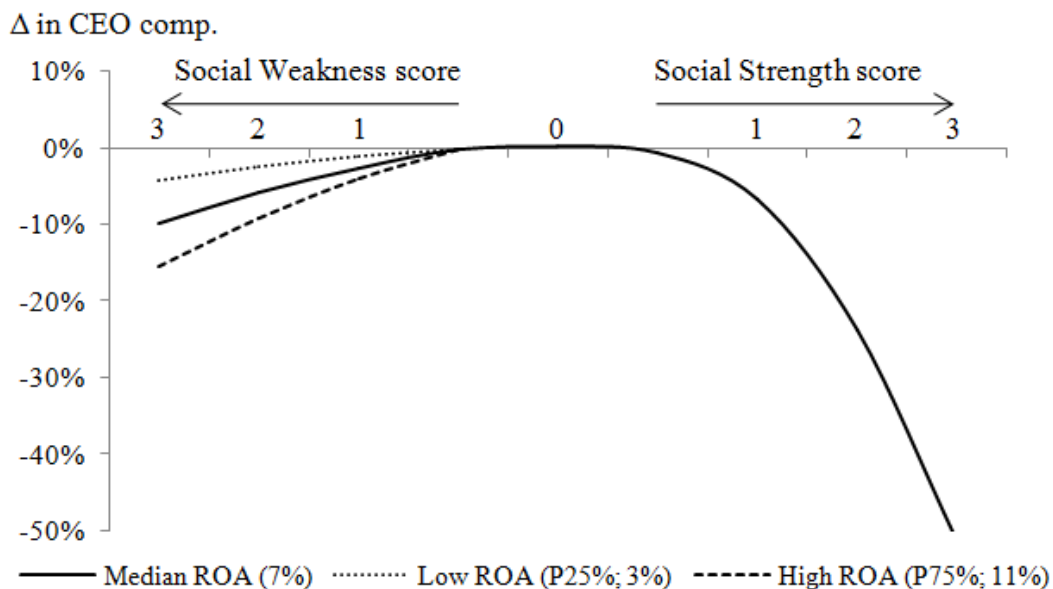
Secondly, we find that Environmental CSR variables have stronger relationships with CEOs than with SEOs, as both Environmental variable relationships with CEO compensation hold in all main regressions and in many of the various industry split regressions (3 out of 6 for Weaknesses and 2 out of 5 for Strengths; Table 5). Whereas in the SEO case, Environmental Weaknesses are insignificant in the main regressions and have very mixed results in the industry splits, while the Environmental Strengths are significant at a 5% level in only 1 out of 6 industries (even though it is significant in the main regression). This shows that while both Environmental and Social CSR areas matter for CEO compensation, the potential CSR focus area in the SEO compensation case is slightly narrower, concentrating on Social CSR variables. The reasoning for this might include that the CEO is responsible for the overall strategy and results of the company, including the Environmental agenda, whereas other senior executive officers, perhaps with the exception of the COO, are concentrated on their own areas which usually do not encompass Environmental issues. As such, their performance, evaluation and finally compensation might relate little to the Environmental area of CSR, but they still have to deal with various Social areas, including employee relationships, customer meetings, supplier negotiations and etc. One can draw parallels of these findings to Aggarwal and Samwick (2003) who concluded that CEO pay-performance sensitivity is much higher than for the other senior executive officers because the managerial incentives vary depending on the responsibilities. Even though Aggarwal and Samwick (2003) focused on financial performance in their study, corporate social performance could have similar links with respect to responsibilities and rewards of the executives.

The third point is that the coefficients of CSR Strengths (-8% to -18%) appear to be more negative than the coefficients for CSR Weaknesses (-3% to -5%) in both Environmental and Social areas in both av. SEO and CEO main compensation regressions (Table 4, reg. #6; Table 6, reg. #21), although the effect is slightly less pronounced in the Environmental area. Both the difference of coefficients in general and the smaller level of pronouncement in the Environmental area in particular are confirmed by F-test at 5% level (Tables 4 and 6). This observation can have several different explanations. Companies performing worse in CSR might be performing worse overall, thus executives would receive smaller amounts of compensation, or there might be some pressure from various sources, such as the board, media or the general society, that criticize poor CSR performance and force executives to unwillingly

accept lower pay. The stronger negative effect for CSR Strengths might be explained by executives voluntarily refusing part of their compensation in order to conduct CSR activities which might not be directly bringing additional benefit to the company or it could be that stronger CSR reflects stronger corporate governance, which in turn limits the amount of executive compensation.

Fourthly, we find that the negative and different sized effects of Strength and Weakness CSR variables point towards a non-linear relationship between executive compensation and corporate social performance, which is similar to observations of Jiraporn and Chintrakarn (2013) who argued for a curvilinear relationship between CEO pay slice and CSR investments. The results indicate a concave relationship between executive compensation and CSR Weaknesses and Strengths, with a flatter slope on the left due to lower Weakness coefficients, then an evening out due to neutral (base case) companies with average (neutral) CSR ratings and finally a sharper drop on the right due to more negative CSR Strengths coefficients. In the case of CEO compensation, the steepness of the slope on the left changes based on the profitability level of the company. This is indicated by the ROA and Social Weakness interaction dummy, which is both significant and negative in the main CEO regression (Table 4, reg. #6) and in 3 out of 6 industry regressions (Table 4, reg. #10, #11 and #12). The stylized relationship between the interaction variable and CEO compensation is depicted in Figure 2, i.e. values on scores of 3 match model coefficient results, whereas values of 1 and 2 are adjusted to fit the slope.

Figure 2. Stylized relationship between ROA*Social Weakness variable and CEO compensation



In the case of maximum Social Weakness values of 3, the 25th percentile of sample companies as measured by ROA (with low return of ROA equal to 3%) would have lower CEO

compensation by 4%, median ROA (7%) - by 10%, 75th percentile by ROA (11%) - by 16% than in cases when Social Weaknesses score is equal to zero.

A potential explanation for this interaction between the Social Weakness measure and company profitability (ROA) could be that when companies start performing well, their success is increasingly scrutinized both externally (by the society) and internally (by the employees) and poor social practices attract more attention than if companies had been doing worse. Better performance leads to increased interest from all associated parties, asking for their fair share of the now bigger profit. In this kind of a situation, greater CEO compensation would only worsen the situation by depriving other parties of the money they might be entitled to, aggravating already mistreated groups (as identified by poor Social score) and thus resulting in severe public lash backs. Therefore, CEOs, as head representatives of the companies, might willingly accept lower pay in order to avoid any complications. It has to be noted that the salary decrease shown in the graph is only the effect of the ROA and Social Weakness interaction variable, and thus does not show the full effect of the increased profitability levels – the CEO could still be receiving a higher salary than before, but not as high as it could have been if the company had been performing better on the Social Weakness score. Unfortunately, we cannot determine exactly how sharp the curve is in this case as there are not enough companies reaching maximum values of CSR Weaknesses or Strengths, thus regressions excluding the companies with intermittent CSR values would be prone to suffer from a small sample size bias and could not show changes in the steepness of the slope.

Lastly, and most importantly, the fifth observation is that in both CEO and av. SEO compensation cases specific industry results might be driving the significance of CSR variables. The Social CSR variables were significant only in the main SEO regressions (Table 6, reg. #21) and in the industrial company sector split regressions (Table 7, reg. #22), therefore it might seem that industrial companies are driving the whole result. In the CEO regressions the financial industry might be driving the significance of the Social Strength variable (Table 5, reg. 10), as it is the only industry where the variable is significant, and only at 10%, whereas the healthcare industry could be driving the significance of Environmental Strengths (Table 5, reg. 8), as there the variable has an extremely large coefficient (-0.62) compared to the single other case where the Environmental Strengths variable is significant (-0.12) in the industrial company split (Table 5, reg. #7). These specific observations, combined with the general volatility of coefficient signs, sizes and significances across industries, point at different relationships between CSR and executive compensation in different industries. These differences are not captured by simple industry dummies. There are several explanations in this

case as well. The first and the simplest one is that the observation number in sectors other than industrials is simply not high enough to determine the relationships. This could be possible, as the sub-sample observation number of industrial companies is double the size (247) of the next largest sector sample (128) and in four of the sector regressions the Social Strength variable was dropped due to the lack of variation from 0 (Table 5, reg. #8 and #11; Table 7, reg. #23 and #26) and once in the Environmental Strengths case (Table 7, reg. #23). The other explanation is that the CSR variable effects are indeed industry driven and are not properly captured by the dummy variables. If this explanation is true, then it brings into question the results of most of the previous CSR and executive compensation link research that is not industry specific. However, in this case no strong conclusions can be made and only a message of caution can be expressed regarding the generalization of past and future research results.

6.2. New insights into company, executive and governance variable relationships

While the behavior of most of the other explanatory variables reflects the results of previous research, there are several outcomes that were either unexpected, unique due to Sweden-specific context or were simply not investigated with regard to CEO compensation.

First, it appears that better company financial performance (ROA) affects CEO compensation positively at 1% significance (Table 4, reg. #6), whereas no relationship is found with SEO compensation. The potential explanation for this relationship difference is quite similar to the one in the second point of the CSR discussion – CEO responsibilities encompass a wider range of issues, all of which might impact the final evaluation criteria of company profitability, whereas SEOs have their own operational areas and thus do not have a close connection to the final measure of ROA or ROE. Similar argumentation can be found in a paper by Aggarwal and Samwick (2003), where they found evidence that CEOs have higher pay-performance sensitivities than other executives with more clear-cut divisional responsibilities. Interestingly, the coefficient of ROA variable in the CEO main regression #6 is only 0.78% (i.e. increase of ROA from, ex. 7% to 8% increases CEO pay by 0.78%), which is a very small effect, considering that the median CEO receives around 4 mSEK per year, and a 1% increase of ROA would lead to a salary increase by 31.2 kSEK, i.e. 8.9 SEK CEO salary increase per 1000 SEK increase in absolute ROA in a median company. The findings are in line with Jensen and Murphy (1990), who concluded that on average CEO compensation increases only by \$3.25 for every \$1,000 positive change in shareholder wealth. While a different measure of profitability is used in this paper, it appears the relationship still holds regardless.

Secondly, the regression results imply that the presence of CEO equity compensation does not have a significant relationship with CEO cash compensation, whereas in the SEO case it has a strong positive relationship with a coefficient of 10.3%, which is significant at a 1% level (Table 6, reg. #21). This is surprising, considering that 60% of CEOs are compensated with financial instruments, whereas SEOs are in only 11% of the cases (Table 1).

While slightly surprising, CEO non-cash compensation instrument variables have been found to be insignificant before (Mallette et al, 1995) and, considering that the dummy in this case only covers the existence, and not the amount of financial instrument compensation, some deviation could be expected. Alternatively, it might be argued that for CEOs financial instrument compensation might be more of an add-on in order to align incentives with the company owners rather than be seen as a part of the regular compensation package. A study made by Ehne and Lundberg (2012) seems to confirm this, which, based on interview observations, finds that Swedish CEOs tend to avoid risk in their salaries and that while equity incentives are used to negate the agency issue, they do not work as good motivators.

The positive relationship in the SEO case might be stemming from size related effects (as the coefficient is very high and significant in “Assets<median” SEO split reg. #31, Appendix 9). SEOs might be reaching a level of cash compensation where all their short-term needs are satisfied and/or the companies might not be able to pay more in cash due to cashflow constraints, therefore long-term financial instrument remuneration is employed instead. This seems plausible, as below median sized companies are characterized by smaller SEO compensation packages (av. 1.4 mSEK vs. sample median of 1.7 mSEK; Tables 1 and 3) and higher expected future profitability (av. P/B of 2.57 vs. sample median of 1.65; Tables 1 and 3). One could argue that the significance of SEO equity remuneration could be due to statistical issues – the effect seems to mainly stem from the sub-sample of below median sized companies, where only around 4% of SEOs receive equity compensation (14 observations; Table 3). However, in this case it would be highly unlikely that the level of the variable’s coefficient significance could reach 1% in the main regression if this were true (Table 6, reg. #21). Additionally, the CEO equity dummy coefficient is also positive, although insignificant, lending some support to the argument that the equity dummy variable significance is not driven by statistical issues.

The third observation is regarding the significant positive relationship between presence of major institutional ownership and higher CEO compensation by 18% (Table 4, reg. #6). In many studies institutional ownership signals good corporate governance and in turn smaller CEO compensation (Hartzell and Starks, 2003; Jian and Lee, 2015). In this case, the

results are more in line with the opposing view and findings of Lee and Chen (2011) and Reddy et al (2015), who discover a positive relationship between institutional ownership and executive compensation. The main explanation for this relationship is that institutional owners tend to select big, well managed companies showing good performance, therefore institutional ownership is more of a proxy for measures like company size, profitability and quality of executive monitoring. In the Swedish case, however, there could be an alternative explanation. Based on analysis of SIS Ägarservice data, 99% of sample companies had at least a single institutional investor, whereas 90% and 82% of companies had institutional owners exceeding capital ownership levels of 5% and 10% accordingly. Whenever present, institutional owners own both on average and median around 1.2% of capital, whereas their votes represent only 0.5%. Therefore, institutional ownership is both large and fragmented, even more so in terms of control. Thus, the explanation in this case might be that institutional ownership leads to decreased owners' control and decreased executive monitoring due to small individual stakes, resulting in higher executive compensation.

The fourth discussion point covers the similarity between average SEO and CEO compensation links to blockholder presence and the blockholder disparity between voting and capital rights. For both SEOs and CEOs, the presence of blockholders is connected to 8-10% lower compensation compared to when there are no blockholders (Table 4, reg. #6, Table 6, reg. #21), whereas the extensive use of the dual share system is connected to larger executive remuneration packages. The negative blockholder presence (ownership concentration) link is not surprising and has been found to be significant in several CEO compensation studies (Reddy et al, 2015; Luo, 2015), but it is novel for SEOs. The theory is that owners with higher stakes in the company pay more attention to executive monitoring and thus curb any excessive executive remuneration.

The blockholder ownership and control disparity dummy, however, shows that executives in companies where owners have much more voting rights than capital usually earn 13.6-17% more than executives in companies without such ownership disparities (Table 4, reg. #6, Table 6, reg. #21). To the best of our knowledge, this particular disparity measure was not used to explain executive compensation levels before, but when measuring company value, it proved to be highly negative (Claessens et al, 2002). The explanation is similar to that of the institutional ownership variable – when owners have less gain from a particular company than they have power over it, they tend to lose interest in it, resulting in poor monitoring and excess executive compensation. Of course, it could be argued that even a 5% capital ownership represents a significant interest in a company, but when viewed from the blockholders'

perspective, who often hold huge amounts of money in many companies, the relative significance of such amounts of money falls, resulting in diverted owner attention and higher salaries of both SEOs and CEOs.

Finally, other variables, such as company size, D/A, P/B and board size conform to the results of previous research, with all having a positive link with CEO compensation, except for D/A, which usually has a negative link due to increased company riskiness leading to lower executive compensation, but is insignificant in this case. Negative CEO tenure is usually explained by the theories that older CEOs tend to divert their attention from company matters and thus are penalized, whereas newer CEOs tend to bargain heavily for a higher salary upfront. In the SEO case, the company and governance variables have either the same signs (D/A, size) or are insignificant (P/B, board size), showing that governance issues and market evaluations do not link as strongly to their compensation as in the CEO case. The senior executive number variable is as expected negative (-1% av. compensation per additional member) and significant, thus accounting for the bias of differing company top management team definitions.

Overall, it seems that some of the CSR and other explanatory variables have different relationships with CEO and SEO compensation, even though general tendencies are similar.

7. Conclusions

Our paper revisits the relationship between Corporate Social Responsibility (CSR) and executive compensation, building on the findings and methodologies of Rekker et al (2014) as well as Mahoney and Thorne (2006). We extend their methodology with the addition of several significant explanatory variables and the inclusion of senior executive officer (SEO) compensation as a dependent variable. Using a sample of 710 observations from 138 companies listed on the NASDAQ OMX Stockholm throughout 2005-2013, we applied a robust regression approach to determine the relationships between executive compensation and various CSR, company, executive, governance, industry and year variables.

The findings from studying RQ1 and RQ2 show negative relationships not only between CSR Strength and Weakness variables and CEO compensation, but also between the CSR variables and average SEO compensation. Both very high and very low evaluations on Social and Environmental CSR scores relate to executive compensation negatively, although in the SEO case Social CSR measures appear to be more significant than Environmental measures. The negative coefficients of both CSR Strength and Weaknesses variables point towards a concave relationship between executive compensation and CSP, the size of which is conditional on company profitability (ROA) in the case of CEO compensation and Social

Weaknesses variable. High CSR evaluations (Strengths) tend to affect both CEO and SEO compensation more negatively than low CSR evaluations (Weaknesses).

RQ3 findings relate to the relationship between executive compensation and other non-CSR explanatory variables. Specifically, high institutional ownership and bigger boards are associated with higher CEO pay, while the presence of blockholders correlates negatively with both CEO and SEO pay. Moreover, when blockholders own significantly more voting rights than capital rights, both CEO and SEO compensation tend to be higher. We also find confirmation that company profitability (ROA) is connected positively with CEO pay, but not with SEO remuneration. Equity compensation is insignificant in the CEO case, as found in previous Swedish CEO equity instrument research, but highly significant in the SEO case, which is found to be slightly unusual. Lastly, the behaviour of other variables, such as P/B, D/A and company asset size seems to confirm the findings of previous research and to be similar in both CEO and SEO cases.

This paper is not without its limitations due to sample restrictions that have an effect on the generalizability of the findings. Although the study covers both a substantial length of time (9 years) and a relatively large number of industries (5 sectors individually and 5 others combined into one group), covering around 50% of the NASDAQ OMX Stockholm Stock Exchange companies, it is conducted exclusively on Swedish publicly listed companies. Thus, it would not be prudent to apply the results on companies from countries with substantially different cultural backgrounds, taking into account that significant differences in executive compensation were found between countries with large cultural differences (Tosi and Greckhamer, 2004). Therefore, the results could be limited to the Nordics and to other culturally similar countries. Additionally, CSR and executive compensation dynamics in non-listed companies and companies coming from different legal and personal taxation environments might follow different logics. Moreover, the innate endogeneity between company performance, executive pay and CSR persists, as does the potential for spurious correlation. Although the biases were managed as much as possible, e.g. extensive variable collection and testing was done in order to avoid omitted variable bias, but some issues could not be solved due to data limitations and thus the findings should be interpreted with caution.

The major contributions of this paper include: (1) the connection of CSR and executive compensation in the Swedish context, with very weak and very strong CSR performance being associated with lower levels of executive compensation for both CEOs and SEOs, which stems from studying RQ1 and RQ2; (2) the identification of the concave relationship between CSR variables and executive compensation, and specifically the Social Weakness effect which is

amplified by company profitability in the CEO case; (3) finding that Social CSR measures are more related to CEO compensation than Environmental measures, whereas the CEO relationship is significant with both Social and Environmental CSR components; (4) the exploration of non-CEO executive remuneration links to other variables (RQ3), which has shown that while similar, the connections between executive compensation and other variables are not the same in CEO and SEO cases, namely, both CEO and SEO compensation are positively associated with the blockholders' control and ownership detachment variables but negatively related to the presence of blockholders, while board size, institutional ownership and company profitability are not significantly associated with the SEO compensation unlike in the case of CEO compensation; (5) the identification of potential industry bias in some of the previous research, therefore calling into doubt some of the previous research results.

The academic implications extend to the need of separate investigation in the fields of CEO and SEO compensation, the need to approach executive compensation not on a generalized, but on an industry-level basis, and the necessity to account for CSR effect non-linearity. Other practical implications are harder to pinpoint due to unclear causations, but the groundwork for further research trying to identify potential effects of CSR decisions on both CEOs and SEOs compensation has been laid.

The possibilities for further research are vast – our research has identified the relationships between executive compensation and CSP, which could have potential implications for executive recruitment (e.g. what kind of salaries potential executives could ask for or expect from high or low CSR score companies), company strategy (e.g. would executives engage in CSR if they knew their salaries could decrease by up to 50% if they do well, whereas ignoring CSR would lead to a smaller drop) and other areas. Once additional data is available, our research could be extended by evaluating the impact of CSR on whether a CEO or a SEO decides to join a company, whereas the negative CSR and compensation link implies the need for investigation of possible CSR effects on strategic choices made by executives due to effects on personal wealth. Further, an inquiry on how companies might use CSR to achieve lower executive salaries when CEO or SEO turnover occurs could be done.

Moreover, more in-depth industry level investigations into connections between executive compensation and CSR could be explored, as well as the inclusion of previously untested variables, such as more detailed executive personal characteristics, employee union strength, government support, local ESG requirements and so forth could be investigated. The research area of CSR and executive compensation is one of the newest and a great deal remains to be discovered.

8. References

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9. Appendices

9.1. Appendix 1 – GES CSR Risk Rating Criteria

Score	Subscore	Criteria
Environmental	Preparedness	• Organization and routines • Policy and programs • External Verification • Environmental Reporting • Supplier evaluation
	Performance	• Greenhouse gases • Energy Use • Use of water resources • Travel management • Remediation • Project development • Hazardous Waste • Emissions to air + 8 other criteria
Social (HR)	Employees	• Discrimination • Freedom of association • Health and safety • Working hours and wages +5 more criteria
	Community	• Education of security forces • Corruption • Community involvement • Community investments
	Suppliers	• Code of conduct • Management System and Program • Performance evaluation
Governance	Board management and control	• Audit/Compensation/Nomination committees • Board Composition and independence • Board room diversity
	Shareholder rights	• Equal voting rights • Ownership transparency
	Transparency and incentive	• Audit firm costs • CEO compensation • Governance reporting

9.2. Appendix 2 – Variable descriptions and data sources

Variable	Description	Data source
Executive variables:		
Ln (CEO pay)	Includes CEO fixed and variable pay, as well as benefits. Pension, equity payments or severance payments are not included. Natural logarithm (logarithm with base of e) used to transform the variable.	Manually collected by authors from company annual reports, notices, announcements and websites
CEO age	The age of the CEO at the appropriate measurement date. Captures effects of previous experience (non-CEO positions in the same company, CEO positions in other companies, network effects, skills and etc.)	
CEO tenure	The number of years the employee has been the CEO of a specific company. Does not include previous positions in the company or CEO positions in other companies.	
CEO equity d.	Dummy variable, takes value of 1 if the CEO is paid or has shares/options/warrants or other non-cash instruments or long term compensation plans in the company.	
Ln (Av. SEO pay)	Includes total senior executive officer fixed and variable pay, as well as benefits, divided by total number of senior executive officers. Pension, equity payments or severance payments are not included. CEO compensation is excluded. Natural logarithm (logarithm with base of e) used to transform the variable.	
SEO number	The average number of senior executive officers throughout the year as defined by the company. CEO not included.	
SEO equity d.	Dummy variable, takes value of 1 if senior executive officers are paid or have shares/options/warrants or other non-cash instruments or long term compensation plans in the company.	
Company variables:		
Ln (Assets)	The amount of assets the company has at the measurement date. Natural logarithm (logarithm with base of e) used to transform the variable.	Retrieved from Compustat
ROA (%)*100	Return on company assets at the specific year. Multiplied by 100 to ease interpretation of regression results.	Retrieved from Datastream
P/B	Equity Price to Book ratio, identifying expectations of future company earnings.	
D/A*100	Debt to Assets ratio (book). Identifies the leverage level of the company. Multiplied by 100 to ease interpretation of regression results.	
Governance variables:		
Board size	Effective board size measurement, attained by subtracting chairman and vice-chairmen salaries from total board compensation, then dividing the resulting number by annual regular board member compensation and adding back the number of chairman and vice chairmen. Novel measure, capturing factual board control.	Manually collected by authors from company annual reports
Institutional d.	Dummy variable, takes value of 1 if total capital ownership by institutional owners exceeds 20 %. Dummy created by	

	screening unique institutional owners from the sample retrieved from SIS Ägarservice database.	Retrieved from SIS Ägarservice
Blockholders d.	Dummy variable, takes value of 1 if votes owned by a specific owner/group exceed 20% in a company. Dummy created by screening large owners from the sample retrieved from SIS Ägarservice database.	
DSS d.	Dummy variable, takes value of 1 if votes owned by a specific owner/group exceed 20% in a company, but capital represents less than 50% of the votes owned. Dummy created by screening large owners from the sample retrieved from SIS Ägarservice database.	
CSR variables:		
Weaknesses Social	Variable constructed from GES Risk Rating CSR scores. Each Social sub-score is counted as 1 if its rating is in the range of C to C+, with the resulting number summed up to total Social weaknesses.	Retrieved from GES Investment Services AB
Strengths Social	Variable constructed from GES Risk Rating CSR scores. Each Social sub-score is counted as 1 if its rating is in the range of A- to A, with the resulting number summed up to total Social strengths.	
Weaknesses Env.	Variable constructed from GES Risk Rating CSR scores. Each Environment sub-score is counted as 1 if its rating is in the range of C to C+, with the resulting number summed up to total Environmental weaknesses.	
Strengths Env.	Variable constructed from GES Risk Rating CSR scores. Each Environmental sub-score is counted as 1 if its rating is in the range of A- to A, with the resulting number summed up to total Environmental strengths.	
ROA* Weaknesses Social	Interaction variable between company profitability and CSR Social Weaknesses number variable. Shows the effects of Social Weaknesses number on executive compensation depending on company profitability levels.	
Industry dummies*:		
Industrial d.	If the company is included in the industry, the dummy takes value of 1; 0 otherwise.	Retrieved from Compustat
Consumer Discr. d.	If the company is included in the industry, the dummy takes value of 1; 0 otherwise.	
Healthcare d.	If the company is included in the industry, the dummy takes value of 1; 0 otherwise.	
Financial d.	If the company is included in the industry, the dummy takes value of 1; 0 otherwise.	
IT d.	If the company is included in the industry, the dummy takes value of 1; 0 otherwise.	
Other d.	Combines Utility, Energy, Materials, Consumer Staples and Telecommunications Services industries. If the company is included in the industry, the dummy takes value of 1; 0 otherwise.	

*see more detailed variable descriptions in GICS identifier Appendix

9.3. Appendix 3 – Correlations between company performance measures

Pearsson correlations between financial performance measures

Variable	(1)	(2)	(3)	(4)	(5)
(1) ROA					
(2) ROA (1Y lag)	0.60				
(3) ROA (5Y average)	0.67	0.73			
(4) ROE	0.53	0.88	0.64		
(5) ROE (1Y lag)	0.37	0.39	0.64	0.43	
(6) ROE (5Y average)	0.53	0.57	0.86	0.64	0.75

Note: all values are significant at 1 % level

9.4. Appendix 4 – Keywords used to identify institutional owners

Keyword	Hits	Keyword	Hits
Invest	433	SEB	31
Fund	429	Munici	27
Stift	300	Government	12
Fond	223	Equity	12
Pension	173	SHB	11
Foundation	168	Nordea	11
National	64	Institut	10
Manage	61	Saving	5
Finan	60	Hedge	5
Bank	59	University	4
Insurance	55	Academy	3
Total			2156
Total (without overlapping):			1949

Detailed methodology: The keywords were identified by retrieving top 50 shareholders of each of sample companies for years 1999-2013, eliminating duplicated values, resulting in a sample of a around 14000 unique owners, and then searching for specific text strings (identified above) in owner names. Both included and excluded owners were checked for false positives/negatives and misspecified owners were then included in the list above.

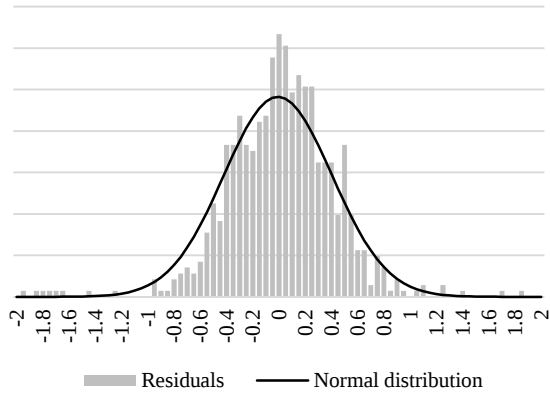
9.5. Appendix 5 - Global Industry Classification Standard (GICS): industry identifiers

Sector	Code	Description	Use in model:
Industrials	20	The Industrials Sector includes manufacturers and distributors of capital goods such as aerospace & defense, building products, electrical equipment and machinery and companies that offer construction & engineering services. It also includes providers of commercial & professional services including printing, environmental and facilities services, office services & supplies, security & alarm services, human resource & employment services, research & consulting services. It also includes companies that provide transportation services.	Industrials
Consumer discretionary	25	The Consumer Discretionary Sector encompasses those businesses that tend to be the most sensitive to economic cycles. Its manufacturing segment includes automotive, household durable goods, leisure equipment and textiles & apparel. The services segment includes hotels, restaurants and other leisure facilities, media production and services, and consumer retailing and services.	Consumer discretionary
Healthcare	35	The Health Care Sector includes health care providers & services, companies that manufacture and distribute health care equipments & supplies and health care technology companies. It also includes companies involved in the research, development, production and marketing of pharmaceuticals and biotechnology products.	Healthcare
Financials	40	The Financials Sector contains companies involved in banking, thrifts & mortgage finance, specialized finance, consumer finance, asset management and custody banks, investment banking and brokerage and insurance. This Sector also includes real estate companies and REITs.	Financials
Information Technology (IT)	45	The Information Technology Sector comprises companies that offer software and information technology services, manufacturers and distributors of technology hardware & equipments such as communications equipment, cellular phones, computers & peripherals, electronic equipment and related instruments and semiconductors.	IT

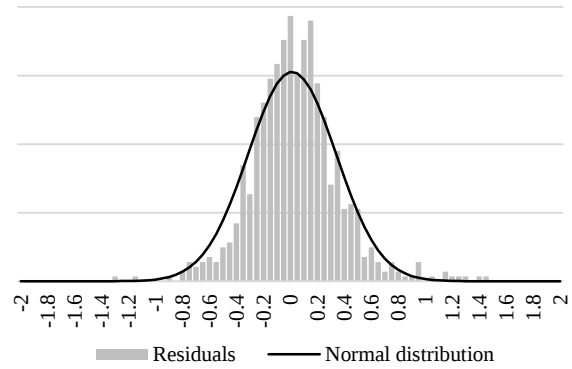
Energy	10	The Energy Sector comprises companies engaged in exploration & production, refining & marketing and storage & transportation of oil & gas and coal & consumable fuels. It also includes companies that offer oil & gas equipment and services.	Combined into "Other"
Materials	15	The Materials Sector includes companies that manufacture chemicals, construction materials, glass, paper, forest products and related packaging products, and metals, minerals and mining companies, including producers of steel.	
Consumer staples	30	The Consumer Staples Sector comprises companies whose businesses are less sensitive to economic cycles. It includes manufacturers and distributors of food, beverages and tobacco and producers of non-durable household goods and personal products. It also includes food & drug retailing companies as well as hypermarkets and consumer super centers.	
Telecommunication Services	50	The Telecommunication Services Sector contains companies that provide communications services primarily through a fixed-line, cellular or wireless, high bandwidth and/or fiber optic cable network.	
Utilities	55	The Utilities Sector comprises utility companies such as electric, gas and water utilities. It also includes independent power producers & energy traders and companies that engage in generation and distribution of electricity using renewable sources.	

9.6. Appendix 6 – Main CEO and av. SEO compensation regressions' residuals histograms and scatterplots

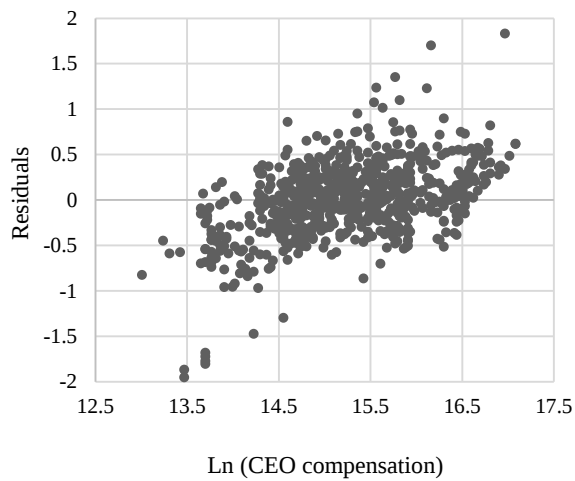
Main CEO compensation regression
residual distribution



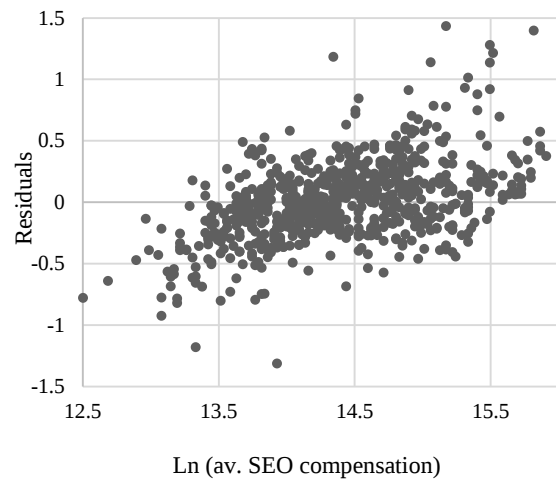
Main Av. SEO compensation
regression residual distribution



Main CEO compensation regression
residual scatterplot



Main Av. SEO compensation regression
residual scatterplot



9.7. Appendix 7 – Pearson correlations between model variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1) Ln (CEO pay)																		
(2) CEO age	0.07 **																	
(3) CEO tenure	-0.18 ***	0.33 ***																
(4) CEO equity d.	-0.00	0.04	0.16 ***															
(5) Ln (Assets)	0.66 ***	0.15 ***	0.00	-0.03														
(6) ROA	0.11 ***	-0.07 **	0.09 ***	-0.05	0.09 **													
(7) P/B	0.07 **	-0.11 ***	-0.02	-0.01	-0.16 ***	0.25 ***												
(8) D/A	0.29 ***	0.10 ***	-0.12 ***	-0.02	0.50 ***	-0.10 ***	-0.11 ***											
(9) Board size	0.45 ***	0.11 ***	-0.14 ***	-0.03	0.51 ***	-0.02	-0.09 **	0.26 ***										
(10) Institutional d.	0.50 ***	-0.06 *	-0.27 ***	-0.02	0.29 ***	0.09 **	0.08 **	0.06	0.27 ***									
(11) Blockholders d.	-0.01	0.07 **	0.23 ***	0.09 ***	0.04	0.03	-0.11 ***	-0.00	-0.03	-0.17 ***								
(12) DSS d.	0.15 ***	0.01	0.14 ***	0.10 ***	0.04	0.02	0.03	0.06 *	-0.01	0.09 ***	0.31 ***							
(13) Ln (Av. SEO pay)	0.85 ***	0.02	-0.06 *	0.07 *	0.71 ***	0.05	-0.03	0.37 ***	0.44 ***	0.45 ***	0.05	0.24 ***						
(14) SEO number	0.31 ***	-0.06	-0.14 ***	-0.14 ***	0.28 ***	0.11 ***	0.07 *	0.06	0.21 ***	0.17 ***	-0.05	0.01	0.24 ***					
(15) SEO equity d.	0.30 ***	-0.05	-0.11 ***	0.16 ***	0.23 ***	0.03	0.06	0.11 ***	0.19 ***	0.19 ***	-0.04	0.17 ***	0.33 ***	0.19 ***				
(16) Weaknesses Social	-0.28 ***	-0.02	0.12 ***	0.03	-0.25 ***	0.03	0.12 ***	-0.12 ***	-0.17 ***	-0.17 ***	-0.02	-0.01	-0.27 ***	-0.20 ***	-0.12 ***			
(17) Strengths Social	0.17 ***	-0.01	-0.12 ***	0.02	0.31 ***	0.05	-0.01	0.07 *	0.19 ***	0.06	-0.01	-0.02	0.13 ***	0.19 ***	0.03	-0.21 ***		
(18) Weaknesses Env.	-0.47 ***	-0.12 ***	0.04	0.08 **	-0.59 ***	-0.07 *	0.09 **	-0.38 ***	-0.36 ***	-0.17 ***	-0.04	-0.07 *	-0.47 ***	-0.23 ***	-0.13 ***	0.37 ***	-0.26 ***	
(19) Strengths Env.	0.30 ***	0.02	-0.14 ***	0.02	0.35 ***	0.00	-0.06	0.13 ***	0.27 ***	0.17 ***	-0.05	0.07 *	0.27 ***	0.22 ***	0.1 ***	-0.21 ***	0.47 ***	-0.37 ***

Correlations between (1), (2), (3) and (13), (14), (15) are shaded as these groups of variables are not used in the same regression
 *** indicates significance at 1% level, ** at 5% and * at 10%

9.8. Appendix 8 – CEO compensation regression splits by ROA and asset size

Dependent variable: Ln (CEO compensation)					
Sample:		ROA>median	ROA<median	Assets>median	Assets<median
Regression Nr.		(13)	(14)	(15)	(16)
CSR variables					
Weaknesses Social	β_1	0.0175 (0.0518)	-0.0063 (0.0237)	-0.1484 *** (0.0356)	-0.0569 ** (0.0271)
Strengths Social	β_2	-0.2209 * (0.1167)	-0.1524 *** (0.0586)	-0.1552 *** (0.0459)	-0.2669 (0.2906)
Weaknesses Env.	β_3	-0.0370 (0.0329)	-0.1017 *** (0.0345)	0.0499 * (0.0298)	-0.1190 *** (0.0358)
Strengths Env.	β_4	-0.0929 * (0.0557)	-0.0708 (0.0482)	-0.0137 (0.0351)	-0.1311 (0.0906)
ROA*Weak. Social	β_5	-0.0066 * (0.0037)	-0.0039 (0.0029)	0.0084 ** (0.0038)	-0.0047 ** (0.0019)
Executive controls					
CEO age	β_6	-0.0046 (0.0037)	-0.0005 (0.0030)	-0.0003 (0.0032)	0.0003 (0.0033)
CEO tenure	β_7	-0.0002 (0.0037)	-0.0122 *** (0.0034)	-0.0103 *** (0.0031)	-0.0030 (0.0040)
CEO equity d.	β_8	0.0123 (0.0428)	0.0893 ** (0.0426)	0.0299 (0.0401)	0.0550 (0.0438)
Company controls					
Ln (Assets)	β_9	0.3029 *** (0.0195)	0.3026 *** (0.0181)	0.2175 *** (0.0201)	0.2924 *** (0.0276)
ROA*100	β_{10}	0.0257 *** (0.0067)	-0.0002 (0.0038)	0.0185 *** (0.0059)	0.0050 (0.0031)
P/B	β_{11}	0.0016 (0.0103)	0.0551 *** (0.0111)	0.0201 (0.0176)	0.0468 *** (0.0079)
D/A*100	β_{12}	0.0003 (0.0018)	-0.0004 (0.0013)	0.0017 (0.0017)	-0.0045 *** (0.0013)
Governance controls					
Board size	β_{13}	0.0471 *** (0.0177)	0.0024 (0.0145)	0.0162 (0.0143)	0.0477 *** (0.0162)
Institutional d.	β_{14}	0.1993 *** (0.0576)	0.1115 ** (0.0518)	0.1472 *** (0.0571)	0.1534 *** (0.0507)
Blockholders d.	β_{15}	-0.1140 ** (0.0560)	-0.0448 (0.0491)	-0.0051 (0.0464)	-0.1748 *** (0.0561)
DSS d.	β_{16}	0.2927 *** (0.0621)	0.0757 (0.0581)	0.2602 *** (0.0561)	0.0837 (0.0570)
Industry dummies					
		Yes	Yes	Yes	Yes
Year Dummies					
		Yes	Yes	Yes	Yes
Constant	β_0	8.2391 ***	8.4783 ***	10.128 ***	8.9007 ***
R ² adj.		0.686	0.65	0.642	0.529
Observation number		355	355	355	355
P values, H0: $\beta_x = \beta_y$					
F-test $\beta_2 = \beta_1$		0.048	0.018	0.906	0.472
F-test $\beta_2 = \beta_5$		0.650	0.012	0.000	0.368
F-test $\beta_3 = \beta_4$		0.340	0.600	0.137	0.794

Note: Standard errors are included in the parentheses. Asterisks correspond to significance levels of the variables: one asterisk denotes a P value of <0.10, two asterisks denote a P value of <0.05 and three asterisks denote a P value of <0.01

9.9. Appendix 9 – average SEO compensation regression splits by ROA and asset size

		Dependent variable: Ln (Av. SEO ceompensation)			
Sample:		ROA>median	ROA<median	Assets>median	Assets<median
Regression Nr.		(28)	(29)	(30)	(31)
CSR variables					
Weaknesses Social	β_1	0.0073 (0.0196)	-0.0541 *** (0.0192)	-0.0387 * (0.0218)	-0.0542 *** (0.0176)
Strengths Social	β_2	-0.0957 (0.0894)	-0.1479 *** (0.0472)	-0.1214 *** (0.0433)	-0.2203 (0.2133)
Weaknesses Env.	β_3	-0.0290 (0.0261)	-0.0142 (0.0277)	0.0718 ** (0.0280)	-0.0834 *** (0.0259)
Strengths Env.	β_4	-0.0980 ** (0.0439)	-0.0484 (0.0393)	-0.0936 *** (0.0326)	0.0025 (0.0666)
Executive controls					
SEO number	β_5	-0.0021 (0.0056)	-0.0191 *** (0.0055)	-0.0227 *** (0.0065)	-0.0085 * (0.0047)
SEO equity d.	β_6	0.1059 * (0.0548)	0.0895 (0.0580)	0.0684 (0.0473)	0.1910 *** (0.0730)
Company controls					
Ln (Assets)	β_7	0.2889 *** (0.0156)	0.2984 *** (0.0142)	0.2655 *** (0.0189)	0.2798 *** (0.0201)
ROA*100	β_8	0.0059 (0.0038)	-0.0009 (0.0023)	-0.0029 (0.0044)	-0.0023 (0.0014)
P/B	β_9	-0.0121 (0.0082)	0.0167 * (0.0090)	0.0264 * (0.0156)	0.0066 (0.0056)
D/A*100	β_{10}	-0.0005 (0.0014)	-0.0038 *** (0.0010)	-0.0022 (0.0015)	-0.0014 (0.0009)
Governance controls					
Board size	β_{11}	-0.0084 (0.0138)	0.0041 (0.0117)	0.0266 ** (0.0134)	0.0112 (0.0119)
Institutional d.	β_{12}	0.1181 *** (0.0443)	-0.0254 (0.0396)	0.0235 (0.0488)	0.0439 (0.0366)
Blockholders d.	β_{13}	-0.1055 ** (0.0446)	-0.0484 (0.0393)	-0.1244 *** (0.0424)	-0.1351 *** (0.0398)
DSS d.	β_{14}	0.2535 *** (0.0486)	0.0148 (0.0467)	0.2105 *** (0.0517)	0.1309 *** (0.0416)
Industry dummies		Yes	Yes	Yes	Yes
Year Dummies		Yes	Yes	Yes	Yes
Constant	β_0	8.1177 ***	8.3213 ***	8.8352 ***	8.3437 ***
R ² adj.		0.710	0.651	0.594	0.529
Observation number		355	355	355	355
P values, H0: $\beta_x = \beta_y$					
F-test $\beta_1 = \beta_2$		0.256	0.058	0.050	0.438
F-test $\beta_3 = \beta_4$		0.143	0.477	0.000	0.195

Note: Standard errors are included in the parentheses. Asterisks correspond to significance levels of the variables: one asterisk denotes a P value of <0.10, two asterisks denote a P value of <0.05 and three asterisks denote a P value of <0.01