The link between CEO pay and corporate social performance in Nordic countries

Auteur : Korkiakoski, Ellinoora
Promoteur(s) : Xhauflair, Virginie
Faculté : HEC-Ecole de gestion de l'Université de Liège
Diplôme : Master en sciences de gestion, à finalité spécialisée en Banking and Asset Management
Année académique : 2018-2019
URI/URL : http://hdl.handle.net/2268.2/8008

THE LINK BETWEEN CEO PAY AND CORPORATE SOCIAL PERFORMANCE IN NORDIC COUNTRIES

Jury:
Promoter:
Virginie XHAUFLAIR

Readers:
Yves FRANCIS
Andrew CONLIN

Dissertation by
Ellinoora KORKIAKOSKI
For a Master in Management Sciences
with a specialization in Banking and
Asset Management

Academic year 2018/2019

ACKNOWLEDGEMENTS

CONTENTS

1   INTRODUCTION

For years, Chief Executive Officers (CEOs) of corporations have been one of the highest-paid persons in the world, regardless of the country of origin. For example, already in 1965, CEOs of large US firms received 20 times the pay of an average worker (Mishel & Schieder, 2017). The gap has been typically explained by the fact that the work of a CEO is much more demanding than the work of an average worker and that CEOs are compensated more for the disutility of effort. However, the gap between CEO pay and the pay of an average worker has increased significantly over the years, which has caused public dissent. For example, from 1978 to 2016, CEO compensation of large US firms increased by 937 percent, whereas the compensation of an average worker increased by only 11.2 percent. As a result, CEOs of large US firms received 271 times the pay of an average worker in 2016. (Mishel & Schieder, 2017.) It is deniable that, due to reasons such as industrialization and internationalization, the work of CEOs is more complex now than before. Regardless, such a huge gap signifies a huge economic inequality between CEOs and average workers and questions whether the paychecks of CEOs are fair and ethical.

Agency theory provides a theoretical framework for examining CEO compensation and its determinants. Agency theory is based on the fact that, in large public firms, the ownership base is often so dispersed that the owners cannot efficiently manage their firms but need to hire CEOs to manage the firms on their behalf. In this principal-agent relationship, agents (the CEOs) get compensated for making decisions that create value for the owners (the principals). As such, CEO compensation is based on the contract between the owners and the CEOs.

Agency theory provides two possible explanations for the high compensation of CEOs. First of all, agency theory predicts that CEOs are self-serving by nature and aim at making decisions that only benefit themselves. As such, CEOs, who are not efficiently governed by the owners, will attempt to seek rents from their firms and, as a consequence, set their pay into high levels (Frydman & Jenter, 2010). However, as the owners are also self-serving, they will by nature govern the CEOs by setting up corporate governance mechanisms. Corporate governance mechanisms aim at reducing the conflict of interest between the CEOs and owners by optimal contracting. In a competitive environment, where firms need to practice good corporate governance to stay operational, high pay

levels should be a result of optimal contracting between CEOs and owners (Frydman & Jenter, 2010).

In optimal contracting, owners can either monitor the CEOs to ensure that they are not acting solely in their own interest or ex-ante motivate the CEOs to act in the interest of the owners. Specifically, to motivate CEOs to maximize the value of the owners, the owners can link CEO compensation to corporate performance. As a result, CEOs need to make decisions that maximize the value of the firm to maximize their compensation. Corporate governance systems are often based on a traditional view of a firm, which assumes shareholders to be the owners of firms. Based on this view, CEO compensation should be linked to corporate financial performance, such as stock returns and accounting profits, which provide information about shareholder value creation.

Several studies have tried to find out whether firms link CEO compensation to corporate financial performance and whether high CEO compensation is just a result of CEOs maximizing the value of the owners. Most of the studies focus on US public firms and find a weak but significantly positive link between CEO compensation and financial performance measures. Jensen and Murphy (1990) find that, for every $1,000 increase in shareholder wealth, CEO wealth increases by $3.25. However, Hall and Liebman (1998) find that the link has increased over time, reporting that, for every $1,000 increase in shareholder wealth, CEO wealth increases by $5.29. Tosi, Werner, Katz, and Gomez-Mejia (2000) further find that CEO pay is significantly and positively linked to return on equity (ROE) and return on assets (ROA). However, a study conducted by Miller (1995) does not find a significant link between CEO cash compensation and accounting-based financial performance measures.

At the same time, as the public dissent surrounding CEO compensation is increasing, stakeholders demand firms act in a socially responsible manner and take part in sustainable development. According to the stakeholder theory, a firm has a moral reason to consider those demands because stakeholder interests are of intrinsic value for a firm and considering them can lead to better corporate performance (Donaldson & Preston, 1995). However, as stakeholders are interested in other issues than economic efficiency, corporate performance should not be solely measured by financial performance. According to ISO 26000:2010 Guidance on social responsibility, social, environmental and corporate governance (ESG) factors should be embedded in the measure of overall

performance, in addition to economic factors. Stakeholder-based agency theory thus suggests that to motivate CEOs to act in the interest of stakeholders, CEO compensation should be linked to corporate social performance (CSP), which includes both financial performance and ESG performance. Moreover, linking CEO compensation to CSP would reduce the ethical dilemma surrounding the high levels of CEO compensation since high CEO compensation would, in this case, be a result of CEOs being socially responsible and maximizing the value of stakeholders.

There exist only a few studies that examine the link between CEO compensation and corporate social performance. Out of the ESG performance measures, Stanwick and Stanwick (2001) find a negative and significant link between CEO compensation and environmental performance, indicating that CEOs are discouraged to act in the interest of the environment. However, Cordeiro and Sarkis (2008) find that CEOs are motivated to avoid bad environmental practices since there exists a negative and significant link between CEO compensation and bad environmental performance. Additionally, Callan and Thomas (2014) find a positive and significant link between CEO compensation and overall ESG performance.

All of the studies on the link between CEO compensation and CSP have been conducted in the US. However, the link may be significantly different in other countries as CEOs in the US generally receive relatively high compensation, which is to a large extent paid out as performance-based awards (Murphy, 1999). Particularly, it is interesting to study the link in the Nordic countries, Finland, Sweden, Norway, and Denmark, where CEO compensation is relatively low. Randoy and Nielsen (2002) find that CEOs of Swedish firms receive only 12 times the pay of average workers. Randoy and Nielsen argue that the relatively small pay gap is due to the social democratic, equalitarian culture present in the Nordic countries. They argue that the Nordic legislation regarding tax policies, employee representation on the boards, public disclosure, and strong shareholder rights have resulted in wage levels that are regarded as fair by all stakeholders. As such, it is interesting to study whether the alleged fair wage of Nordic CEOs has been achieved by linking CEO compensation to CSP.

This thesis aims at filling the gap in the literature and studies the link between CEO compensation and CSP in the Nordic countries. The research questions of this thesis are thus the following:

What are the main determinants of CEO compensation in the Nordic countries?

Are CEOs in the Nordic countries compensated based on the financial performance of their companies?

Are CEOs in the Nordic countries compensated based on the ESG performance of their companies?

To answer the research questions, several panel data regressions are run, where CEO compensation is used as a dependent variable and CSP measures are used as variables of interest. The sample panel data of the study consists of 99 Nordic public firms from 2013 to 2017. The CEO compensation and ESG performance data are obtained from Institutional Shareholder Services Inc., whereas the financial performance data is obtained from Morningstar. The main results of the regressions show that Nordic CEO compensation is mainly determined by firm size and industry. Moreover, Nordic CEOs are compensated based on corporate financial performance as there exists a positive and statistically significant link between CEO compensation and financial performance measures. However, Nordic CEOs are not compensated based on the ESG performance of their companies as there does not exist a statistically significant link between CEO compensation and ESG performance measures.

The remainder of this thesis is structured as follows. Chapter two introduces the main theories behind corporate governance mechanisms: agency theory and stewardship theory. Chapter three explains how optimal contracting is achieved through corporate governance structures. As this thesis focuses on CEO compensation, the role of executive compensation plans is highlighted. For example, the most common components of executive compensation are introduced. It is further explained how those components can be linked to corporate social performance. Chapter four examines the theoretical and practical frameworks of corporate social performance. Chapter five further introduces the past empirical research on the link between CEO compensation and financial performance, and CEO compensation and ESG performance. Chapter six describes the sample data and research methodology used in empirical research. Chapter seven discusses the empirical results, along with the implications and limitations of the study. Chapter eight concludes.

2 AGENCY THEORY

All organizations, such as governments, educational institutions, voluntary associations, and private and public corporations, consist of multiple people who work together to achieve common goals. To achieve these goals efficiently, different members of the organization have different roles and responsibilities. As a result, organizations have management structures whereby some individuals (the agents) carry out tasks that have been delegated to them by other individuals (the principals). In this principal-agent relationship, agents make decisions on behalf of principals and get compensated for the efforts made during the decision-making process.
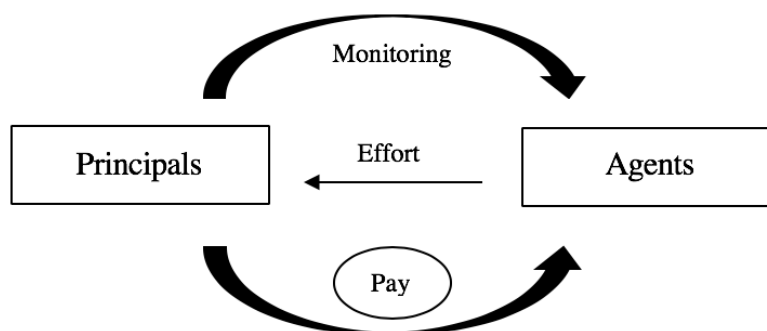
Figure 1. Principal-agent relationship

In general, the principal-agent relationship deals with the relationship between owners (the principals) and managers (the agents) of a firm. However, it can be expanded to deal with any relationship within organizations where individuals take actions on behalf of other individuals. These relationships include, for example, employer-employee, government-contractor, and buyer-seller relationships (Harris & Raviv, 1979). The principal-agent relationship and its implications, which are introduced in the following paragraphs, are the basis of agency theory. Implications of the principal-agent relationship have been known for decades, but the agency theory gained most of its popularity after the papers of Ross (1973) and Jensen and Meckling (1976).

The most significant assumption of the agency theory is that the agents and principals have conflicting interests as humans are self-serving by nature. For example, employees prefer working less for the same compensation, whereas employers prefer paying less compensation for the same outcome. Agency problems arise when the agents can serve their interests at the expense of the principals. First of all, adverse selection arises when

the principal is unaware of the skills and abilities of the agent and cannot verify them at the time of entering into a contract with the agent. For example, an employee may misstate their skills and abilities at the time of hiring in the hope of getting accepted to the position. Moral hazard arises when the principal cannot monitor the agent's decision-making process, and thus, the agent does not put as much effort into their tasks as possible. For example, an employee may decide to do less work if the employer cannot fully monitor the employee. (Eisenhardt, 1989.)

The agents and principals may also have different risk preferences. In general, the agent is more risk-averse than the principal as the agent cannot diversify their contract. (Eisenhardt, 1989.) For example, a manager can only have one employment contract at a time while the owners can diversify their investments into several firms. Therefore, the manager does not want to take excessive risks during the decision-making process because of the fear of getting dismissed. On the other hand, the principals would prefer managers to take more risks since one faulty decision would not affect the value of their investments that much.

The bigger the conflict of interests and risk-preferences, the more costly the principal-agent relationship is for the principals. First of all, monitoring costs occur when the principals attempt to monitor the agents' actions. Further, bonding costs occur when the principals attempt to ex-ante motivate the agents to act in the interest of the principals by paying higher compensation. Any conflict of interest that remains after the monitoring and bonding expenditures is called residual loss. All these costs together are called agency costs. (Jensen & Meckling, 1976.)

2.1 Shareholder-based agency theory

As mentioned above, the term principals traditionally refer to owners of firms. Shareholder-based agency theory argues that shareholders are the sole owners of a firm, based on the theory of property rights. Shareholders should be treated as owners as they have invested their capital, the property, for the firm to create wealth. In addition, shareholders should be the owners because, as providers of equity capital, they bear the greatest risk in a firm and get their stake back the last in a case of bankruptcy. The shareholders thus have private property rights against the firm, and for this reason, the firm should legally act only in the interest of shareholders. (Shankman, 1999.)

In public firms, the shareholder base is often so large that it is not efficient for the shareholders to run the daily operations and the decision-making processes of firms. Thus, managers are hired to make decisions on behalf of shareholders. As a consequence, a principal-agent relationship is formed, whereby the managers should make decisions that are in line with the shareholders' interests. As shareholders are self-serving, and as their only interest is to maximize economic wealth, a manager's sole goal should be to maximize the return on capital that shareholders have invested in the firm. However, agency theory assumes that a conflict of interest between the shareholders and managers exists as managers are also self-serving. As such, agency costs occur, which lead to the firm not maximizing its shareholders' wealth. According to the shareholder view, agency theory should focus merely on the shareholder-manager relationship and create mechanisms to minimize those agency costs.
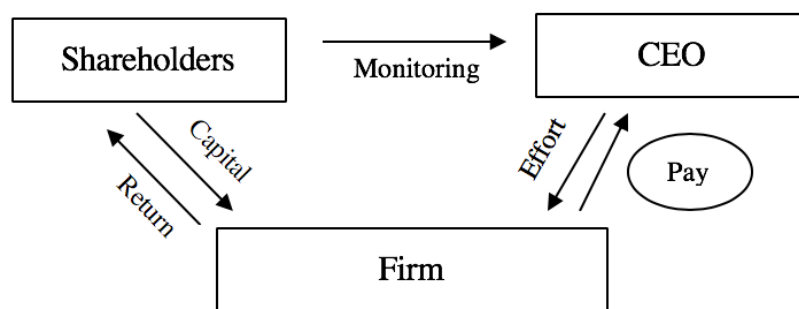
Figure 2. Shareholder-based agency theory

Agency theory has given rise to criticism. First of all, agency theory assumes that the shareholders and managers are self-serving, which is not a viable assumption in the real world. Shankman (1999) argues that principal-agent relationships could not even exist if individuals were purely self-serving. Purely self-serving individuals would not enter into contracts with each other because contracts are based on trust. A principal would have no reason to trust a self-serving agent. Therefore, Shankman concludes that individuals assume others to act both egoistically and non-egoistically, also supporting altruistic causes.

Secondly, it is not a viable assumption that managers' and shareholders' only interest is to maximize their economic wealth. Managers and shareholders, as human beings, care about various other things than money, such as respect, power, norms, the environment, and the welfare of others (Jensen & Meckling, 1994). The same applies to investing, since shareholders base their investment decisions on several criteria, wealth-maximization criteria being only one of them. According to Jansson and Biel (2011), shareholders are

motivated by self-transcendent values (protecting the environment, social justice, equality, honesty, and loyalty), attitudes, and lower risks, in addition to financial long-term returns. Nilsson (2009) further shows that, whereas some investors do purely focus on maximizing profit, some investors even value social and environmental performance over financial performance.

Shareholder-based agency theory has further been criticized for overly simplifying the theory of property rights. In fact, a firm has several contracts with several parties that provide the firm with capital. For example, managers and other employees provide the firm with labour or human capital, lenders provide the firm with debt capital, suppliers provide the firm with inputs, et cetera. All of these parties take a risk of not getting return on their invested capital and thus require a risk-return premium. Fama (1980) argues that a firm consists of a set of production factors or stakes, each of which is owned by a different stakeholder, and that a firm as a whole is not owned by anyone. As such, a firm should not merely focus on the interests of its shareholders, who are just providers and owners of one production factor. A firm should legally provide return for all of its stakeholders.

2.2   Stewardship theory

Stewardship theory has been developed as a response to the critic against agency theory, and its implications of purely self-serving agents and principals as well as purely economic utility maximization. Whereas agency theory arises from economics, stewardship theory has its basis in psychology and sociology. Stewardship theory sees agents as stewards, whose utility is maximized by pro-organizational thinking and by maximizing corporate performance. As such, agents are not purely self-serving, but they are also self-motivated to act in the best interest of the firm. (Davis, Schoorman & Donaldson, 1997.)

Compared to agency theory, stewardship theory assumes a lower divergence of agents' and principals' interests and thus lower agency costs. However, risk-averse principals still face a risk that agents make self-serving decisions and prefer setting up some degree of mechanisms to reduce agency costs (Davis et al., 1997). Besides, the fact that agents are not purely self-serving does not reduce the divergence of the agents' and principals'

risk preferences. Principals still prefer higher risk-taking from the part of the agent and thus, principals' and agents' risks need to be aligned through governance mechanisms.

2.3 Stakeholder-based agency theory

As a response to the critic against agency theory and particularly the view that shareholders are the owners of firms, stakeholder-based agency theory has been developed. Stakeholder-based agency theory combines the implications of agency theory and the implications of stewardship theory with the stakeholder management approach. In this section, stakeholder theory and its concepts are first explained, after which it is explained, how they can be used in the context of agency theory.

The stakeholder management approach was first introduced by Freeman (1984). The approach has since been used as a basis of broader stakeholder theory. Donaldson and Preston (1995) find three separate aspects of stakeholder theory from the stakeholder management literature: descriptive, normative and instrumental. The descriptive aspect attempts to describe the concept of a firm. A firm is defined as a set of competing interests, each of which is of intrinsic value for the firm. The descriptive aspect further attempts to explain the relationship between stakeholders with competitive interests. The normative aspect sets the moral or philosophical grounds for the management of firms. The normative aspect defines stakeholders as individuals or groups that have interests in a firm, regardless of whether the firm has any corresponding interests towards the stakeholders. The firm has a moral or philosophical reason to consider and manage those interests, not because it is in the interest of shareholders, but because all interests have intrinsic value. Instrumental aspect attempts to establish a practical framework for stakeholder management and to investigate the link between stakeholder management and the attainment of several corporate performance objectives. Instrumental stakeholder theory thus assumes that managing stakeholder interests lead to better corporate performance. (Donaldson & Preston, 1995.)

In conclusion, the stakeholder theory recognizes that stakeholder interests are the basis of any firm. Without stakeholder interests, firms would not have any intrinsic value. Without lender and shareholder interest, no one would provide a firm with financing. Without supplier interest, no one would provide a firm with inputs. Without employee or manager interest, no one would provide a firm with human capital. Without customer

interest, no one would provide a firm with revenues. Without community, government or the general public interest, no one would provide a firm with infrastructure. All of the mentioned resources are crucial for a firm since they are production factors for the firm. Those stakes are, based on the theory of property rights, owned by different stakeholders. The firm needs to provide return for those stakes to maximize the intrinsic value of the interests behind them.
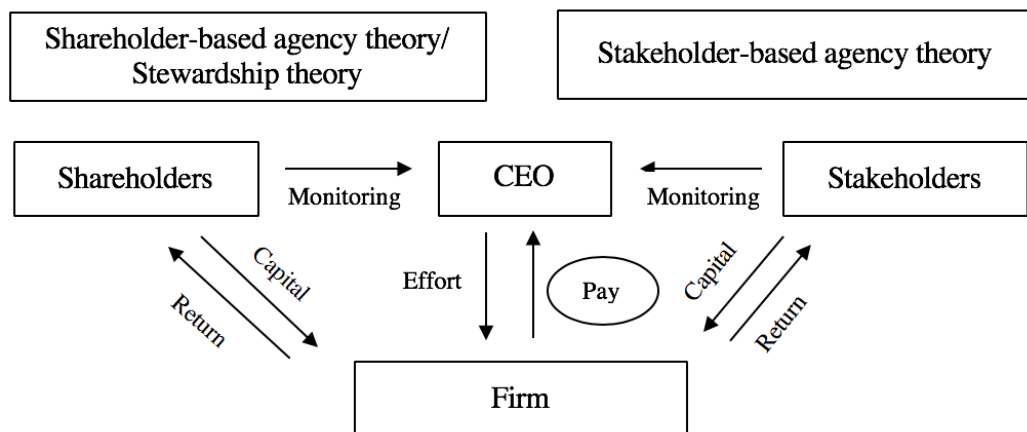
Figure 3. Shareholder-based agency theory/stewardship theory vs. stakeholder-based agency theory

Theoretically, shareholder theory also suggests taking stakeholder interests into account when it is crucial for the firm to stay operational and to maximize its value. A contradiction between shareholder theory and stakeholder theory however exists when the interests of shareholders and other stakeholders are divergent. In this case, shareholder theory suggests that the interests of shareholders are the priority, whereas according to the normative aspect of stakeholder theory, stakeholder interests are not taken into account solely because they are in the interest of shareholders. Stakeholder theory suggests balancing the interests of shareholders and other stakeholders. According to the stakeholder theory, the purpose of a firm is not to act solely in the interest of shareholders and to maximize shareholder value.

Jensen (2002) develops an enlightened stakeholder theory which combines the concept of value maximization and stakeholder theory. According to the enlightened stakeholder theory, a firm balances the interests of all its stakeholders when it maximizes its long-term market value. Jensen argues that long-term market value should be used as a measure of corporate performance whereas maximization of short-term financial performance should not be encouraged. Enlightened stakeholder theory differs from

shareholder theory since shareholder theory suggests maximizing financial performance also in a short-term. Besides, Clarkson (1995b) argues that a firm needs to, instead of corporate financial performance, maximize its corporate social performance, which is in practice achieved by stakeholder management approach.

Donaldson and Preston (1995) argue that, because a firm is a set of stakeholder interests, a firm is required to embed stakeholder management to all its functions, such as firm structures, policies, and decision-making processes. However, the stakeholder theory does not assume that all stakeholder interests should be treated equally. As such, Donaldson and Preston argue that it may be problematic for a firm to, first of all, identify its stakeholders and further evaluate which interests are of most intrinsic value for a firm, and thus, should be highlighted more in the decision-making processes. The literature on stakeholder theory does not give a clear answer to the problem of identifying stakeholders since the definition of stakeholders differs from approach to approach, as presented in table 1.

Clarkson (1995b) argues that, from the perspective of a firm, it is immaterial to define which individuals or groups are stakeholders. He finds that, in practice, firms attempt to manage relationships with several individuals and groups, which theoretically could be defined as stakeholders. This finding is consistent with the agency theory approach to stakeholder management, where a firm has several principal-agent relationships, all of which, and not only the shareholder-manager relationship, need to be managed. Shankman (1999) further argues that stakeholder theory must be linked to the agency theory, and thus, include the aim of agency cost reduction through optimal contracting, for the theory to be practically accepted.

Table 1. The definition of stakeholders by different approaches

Approach	Definition	Implications
Normative approach	Any individual or group that has interests towards a firm	Can amount to infinite number of stakeholders
Stakeholder management approach by Freeman (1984)	"Any group or individual who is affected by or can affect the achievement of an organization's objectives"	Similar to normative approach and can also amount to infinite number of stakeholders
Risk-based approach by Clarkson (1995a)	Any individual or group that has something at risk as a consequence of having a relationship with a firm	For example, shareholders, lenders and customers that risk not getting return on the money that they have invested in the firm
Property rights approach	Any individual or group that has provided a firm with capital or resources and as such owns a stake in the firm	In addition to shareholders as providers of equity capital, owners include, for example, employees as providers of human capital, lenders as providers of debt capital and suppliers as providers of inputs, et cetera.
Agency theory approach	Any individual or group that has a relationship or a contract with a firm	According to Donaldson and Preston (1995), contracts can include both formal contracts and quasi-contracts. For example, firms could be required to take environmental interests into account through quasi-contracts with communities.

3   CORPORATE GOVERNANCE

Corporate governance mechanisms are based on the agency theories that were introduced in the last chapter. These theories assume some degree of divergence between the agents' and principals' interests or risk preferences, which leads to agency costs. Corporate governance mechanisms have been developed to reduce those agency costs. Traditionally, corporate governance mechanisms have been designed to reduce the divergence of interests and risk preferences between shareholders and managers, in accordance with the shareholder-based agency or stewardship theory. In recent years, stakeholders' interests have, however, also been considered at an increasing rate, in accordance with the stakeholder-based agency theory.

A reduction in agency costs is achieved by optimal contracting between the agents and principals. Two types of contracts exist: behavior-based contracts and outcome-based contracts. Behavior-based contracts are designed to reveal the agents' otherwise unobservable behavior to principals by setting up monitoring mechanisms. Outcome-based contracts are designed to align the agents' and principals' interests by setting up interest alignment mechanisms. Outcome-based contracts shift risk from the agents to the principals, which can be costly, but may also solve the problem of differing risk preferences. (Eisenhardt, 1989.)

Optimal contracting is achieved by a trade-off between the costs of setting up monitoring mechanisms and the costs of setting up interest alignment mechanisms and sifting risk to agents. This trade-off depends on several agent- and principal-specific characteristics, such as the level of risk aversion of the agents and principals, the level of conflict of interest between the agents and principals, and the measurability of the agents' behavior and outcomes. (Eisenhardt, 1989.) For example, when the conflict of interest between the agent and principal is low, there is no need to monitor the agent and an outcome-based contract is more preferable to align risk preferences. In contrast, when the outcome of the agents' behavior is hard to measure, a behavior-based contract may be more effective, vice versa. In practice, especially large listed companies use both behavior- and outcome-based contracts at the same time. However, firms rely more on either of the contracts based on the characteristics listed above.

This thesis focuses on the most common interest alignment mechanism, executive compensation plans, as a mechanism to reduce conflict of interest between managers and stakeholders. As such, section 3.1, and its subsections, discuss executive compensation plans in depth. In addition to executive compensation plans, Hill and Jones (1992) mention tax breaks, warranties, and credible commitments as interest alignment mechanisms used by stakeholders. However, these mechanisms are not traditionally used in the context of corporate governance and are thus not discussed in depth.

Large public firms are by law required to set up monitoring mechanisms as corporate governance mechanisms, in addition to executive compensation plans. Many of the monitoring mechanisms also influence how executive compensation plans are designed and monitored. As such, in section 3.2, and its subsections, the most common monitoring mechanisms are introduced. It is also explained, how those mechanisms are organized in the Nordic countries in particular and how stakeholders' interests are taken into account.

3.1 Executive compensation plans

In the case when managers' actions cannot be completely observed by monitoring, as is most often the case in large public firms, it may be efficient to motivate the managers to act in the interest of stakeholders by ex-ante aligning their interests with those of stakeholders. In practice, this alignment is implemented by linking executive compensation to corporate social performance. As a consequence, managers need to make decisions that maximize stakeholder value to maximize their compensation. The theoretical background on this view is discussed in depth in section 3.1.1.

In addition, sections 3.1.2-3.1.6 discuss the most common components of executive compensation plans: base salary, annual bonus plans, stock option plans, other long-term incentive plans, and other benefits. In the Nordic countries, the base salary has traditionally formed the most significant part of executive compensation, whereas long-term incentive plans have been rare. However, Nordic firms have recently significantly changed the design of their executive compensation plans. A study by DirectorInsight (2017) on main index companies in Finland, Sweden, Norway, and Denmark shows that the base salary formed 43.7 percent of total realized CEO compensation in 2011, whereas the fraction of the base salary dropped to 34.1 percent in 2016. At the same time, long-term incentive plans are gaining greater emphasis. DirectorInsight reports that long-term

incentives accounted for 37.7 percent of total realized CEO compensation in 2016, whereas, in 2011, the same percentage was only 12.8 percent. As discussed during the next sections, long-term incentive plans are focused on long-term value creation which, according to enlightened stakeholder theory, is the best way to balance the interests of stakeholders.
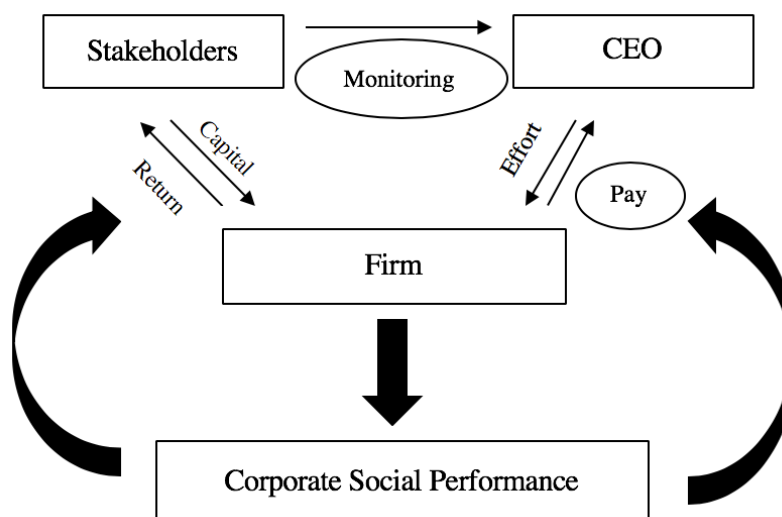
Figure 4. The link between CEO pay and corporate social performance

3.1.1 Theoretical background

In accordance with the shareholder-based agency theory, and the assumption that the purpose of a firm is to maximize shareholder value, executive compensation plans should focus on aligning managers' compensation with shareholder value. When the shareholders cannot completely monitor the managers' actions directly but know which actions the managers should take in order to maximize their value, manager compensation can be linked to shareholder value through hidden action model, presented in Murphy (1999). In the model, shareholders want managers to take actions, a, that maximize their value, $x(a)$. As a consequence, shareholders make contracts with managers where the managers receive compensation, $w(x, z)$, that is a function of shareholders' value and other observable factors in the contract, z. Managers who care about maximizing their compensation will take actions that shareholders desire because their compensation is maximized when shareholders' value is maximized. Thus, managers' utility function is $u(w, a)$. (Murphy, 1999.)

In practice, as a result of information asymmetry, shareholders do not usually know which actions maximize their value. As such, shareholders link manager compensation to metrics that provide information on shareholder value, x. These metrics can be either stock-based metrics or non-stock-based metrics, for example, accounting-based measures. (Murphy, 1999.) Managers consequently get compensated based on the achievement of performance targets set for each metric and are motivated to make decisions that improve those metrics. As these metrics also give information about the financial performance of a firm, the link between shareholder value and manager compensation is often called the pay-performance link.

The metrics that shareholders use to observe managers' actions may, however, be more or less uncontrollable by an individual manager. For example, an individual manager may not be able to affect a firm's stock price or return-on-equity metric significantly. As a result, compensation that is related to metrics that are uncontrollable by managers does not provide enough incentives for the manager. In addition, compensation that is related to the performance of a firm is variable, and as such, riskier for the manager. Managers who are risk-averse by nature demand higher compensation, the higher the risk perceived by the manager.

To find an optimal pay-performance level, a firm needs to trade-off risks and incentives. Murphy (1999) explains this trade-off by a simple agency model. In the model, firm value, x, is a sum of a manager's effort, e, and factors that cannot be controlled by the manager, $\varepsilon \approx N(0, \sigma^2)$. Further, the manager compensation, w, is a sum of fixed salary, s, and salary that is linked to firm value. Hence, compensation function is $w(x) = s + bx$, where b is the pay-performance level. When manager's utility is given by $U(x) = -e^{r(w-c(e))}$, where r is the manager's risk aversion and $c(e)$ is the convex disutility of effort, the optimal pay-performance level is given by:

$$b = \frac{1}{1 + r\sigma^2 c''}$$

The optimal pay-performance level is thus 1 if the firm value can be completely controlled by the manager ($\sigma^2 = 0$) or if the manager is risk-neutral ($r = 0$). As such, the pay-performance level should be lower for more risk-averse managers and for firms whose value is harder for the managers to control. (Murphy, 1999.)

So far, executive compensation and the pay-performance link has been discussed as a way to align the interests of shareholders and managers, in accordance with the shareholder-based agency theory. However, in accordance with the stakeholder theory, a firm should not merely focus on the interests of shareholders but should balance the interests of all its stakeholders. Further, firm value is a function of stakeholder interests and is not measurable by shareholder value. As such, manager compensation should be set to be a function of stakeholder value and linked to metrics that provide information on corporate social performance. However, firm value is, in this case, perceived as a more complex phenomenon and is, to a larger extent, uncontrollable by individual managers. The simple agency model, that is based on stakeholder theory, thus predicts the optimal pay-performance level to be lower than in the case of shareholder-based agency theory.

3.1.2 Base salary

The base salary forms a fixed part of an executive's compensation and is not linked to corporate performance. It is determined through benchmarking against average base salaries in comparable companies, those of the same size and operating in the same industry. In addition, the executive's experience, education, and individual performance are important factors when deciding on the level of base salary. Base salary is the basis of the executive compensation plans as other parts of the compensation package are often measured against base salary. (Murphy, 1999.) For example, in the Nordic countries, the maximum level of variable compensation is often disclosed as a percentage of base salary. As such, an increase in base salary leads to an increase in other parts of the salary.

3.1.3 Annual bonus plans

The annual bonus is a variable component of an executive's compensation and is often linked to individual or corporate performance. The annual bonus is paid annually based on the last fiscal year's performance. Typically, an annual bonus plan is structured as follows. No bonus is paid if a pre-determined threshold performance level is not achieved during a year, a minimum bonus is paid if the threshold performance level is achieved and a maximum bonus is paid if a target performance level is achieved. When the actual performance is in between the threshold and target performance levels, a linear allotment is made. (Murphy, 1999.)

As performance measures, firms use one or more metrics that are either financial or non-financial. Financial metrics are mostly based on accounting measures. Performance targets on financial metrics can be expressed as a standalone number, such as a dollar-value of revenues, net income or operating profit (EBIT), or on a per-share basis, such as earnings per share (EPS). The target can additionally be expressed as a growth rate, such as a growth in EBIT or EPS. Common non-financial metrics include customer satisfaction, operational and strategic objectives, and measures of workplace safety. Performance targets on each metric are most commonly set based on budgeted performance, prior-year performance or expected future performance. Targets can also be fixed to a certain level or be based on performance in relation to comparable companies. (Murphy, 1999.)

There exist several problems with using accounting measures as performance indicators in annual bonus plans. First of all, accounting measures give a backward-looking picture of a firm's one-year financial performance. As such, annual bonus plans that are linked to accounting measures motivate managers to maximize the short-term performance of a firm, even at the expense of long-term value creation. For example, managers may be tempted to cut down on investments in stakeholder relations since they may be costly in the short-term. In addition, accounting measures can be manipulated by managers. For example, Healy (1985) shows that managers change accrual and accounting procedures in an attempt to maximize their bonuses. Regardless of the problems associated with accounting measures, firms use accounting measures because they are easily verifiable and easy to understand by managers (Murphy, 1999).

In the Nordic countries, public companies commonly disclose the structure of their annual bonus plans vaguely. Usually, companies disclose that their annual bonus plans are tied to performance targets. However, companies do not disclose the actual targets, or the metrics used. Besides, Nordic companies disclose the maximum level of annual bonuses as a percentage of base salary. The maximum level is typically approximately 40-100 percent of the base salary.

3.1.4 Stock option plans

Stock option plans are a type of a long-term incentive plan. Stock options give executives a right to purchase company shares at a pre-specified time and price, called a strike or

exercise price. Whereas in the US stock options typically vest in tranches, for example, 25 percent of the grants vesting annually during a period of four years (Murphy, 1999), in the Nordic countries stock options typically vest after three years from the date of grant. A few Nordic companies have, however, adopted similar vesting structures than in the US. Options that vest after one year or two years from the date of grant lose much of their long-term incentivizing effect. After vesting, options are typically exercisable during a specified period, which typically ranges from one month to one year.

In the Nordic countries, the exercise price is typically set either at market price or, in most cases, a premium to the market price at the date of grant. Stock options, therefore, include an inherent performance metric where the market value of a firm needs to increase by a certain amount for the options to vest. Managers are thus motivated to increase the long-term market value of a firm, which is directly in the interest of shareholders but, following enlightened stakeholder theory, also in the interest of stakeholders.

After the grant of the options and before the vesting of the options, options are typically not tradeable by executives. Additionally, options are most often forfeited if the executive resigns before the vesting of the options. Therefore, options also serve as a tool to retain executives. It is also possible to issue securities options that are tradable and purchased by executives at market value at the onset of the plan. The market value of options is most often calculated with the Black-Scholes model.

There are some issues with stock option plans. Stock options are linked to the stock price of a firm which is to a great extent not controllable by an individual executive. In the long-term, the actions of executives do affect the stock price of a firm but, in the short-term, stock prices experience several external shocks. For example, a market-wide positive shock could occur just before the vesting of the options, leading to high rewards for executives who had nothing to do with the increase in the market value. In contrast, a market-wide negative shock could occur, decreasing the stock price and, consequently, the value of options significantly. Due to the stock prices being sensitive to market-wide as well as corporate shocks, Yermack (1997) finds that executives manipulate the size of their stock options awards by timing the stock option trades. Firms could include other performance metrics than the stock price in their stock option plans to limit executives' ability to manipulate their awards and to provide insurance against external shocks. These

metrics could be non-financial to motivate managers to increase stakeholder satisfaction, concerning other responsibilities than economic responsibilities.

3.1.5 Other long-term incentive plans

Other long-term incentive plans than stock option plans are similar to annual bonus plans, but they are based on a performance period that is longer than one fiscal year, typically three fiscal years. Performance metrics are similar than introduced in connection with annual bonus plans. However, some Nordic companies do not disclose the metrics used or the targets set on each metric. In addition to accounting-based metrics, some companies use stock-based metrics, such as total shareholder return (TSR). TSR measures the total return that shareholders gain on their investment as a sum of the change in stock price and dividends.

The most common form of Nordic long-term incentive plans, other than stock option plans, are restricted stock plans. At the onset of a restricted stock plan, executives are granted restricted stock units (RSUs) that can be transferred into company shares (performance shares) if certain performance targets are achieved during the performance period. If the performance targets are not met or if the executive resigns before the end of the plan, RSUs are forfeited. Nordic firms commonly require executives to invest in company shares (savings shares) before the start of the plan to be eligible for the RSUs. In this case, executives are awarded a certain number of performance shares for each savings share. Sometimes executives are awarded one matching share for each savings share free of charge, regardless of whether performance targets are met or not. The purpose of matching shares is to retain executives, whereas the purpose of performance shares is, additionally, to reward for corporate performance.

3.1.6 Other benefits

In addition to base salary and short- and long-term incentives, executives receive perquisites, pensions, and severance pay. Typical perquisites include, for example, company car and phone, newspaper subscriptions, and insurances. Pensions are awarded based on participation in mandatory pension plans as well as voluntary pension plans. Pension plans can be either defined-benefit plans, where an ex-ante defined amount is received, or defined-contribution plans, where the amount of the benefit depends on the

performance of the pension plan. Severance pay is payable in a case when an executive is dismissed by the company. In the Nordic countries, severance pay usually accounts for twelve months' base salary as a maximum.

3.2   Monitoring mechanisms

The most conventional monitoring mechanisms of corporations include regulations, the board of directors, and internal and external audits. These mechanisms' responsibilities and relationships with each other can be perceived through three lines of defence model, depicted in figure 5. Regulators and external audit operate independently of a firm, monitoring the firm from the outside. The highest body inside a firm is the board of directors which monitors the executive management and to which the management and internal audit report. In addition to the board of directors, three lines of defence monitor the management from the inside, internal audit or the third line of defence being the highest body. In addition to these mechanisms, stakeholders have set up other more unconventional mechanisms, such as labor, trade, and consumer unions. All of the mechanisms mentioned are discussed in depth during the next sections.
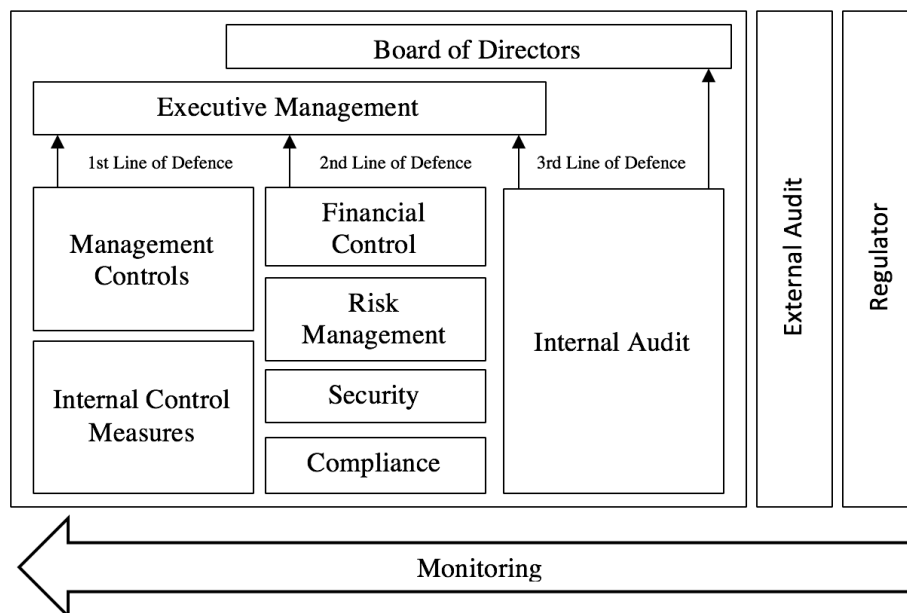
Figure 5. Three Lines of Defence Model (adapted from Chartered Institute of Internal Auditors, 2019)

3.2.1   Regulation

The regulatory framework sets rules and regulations on corporate governance and defines how other corporate governance mechanisms should be organized. The regulatory framework can be divided into three categories: statutory regulation, self-regulation, and informal norms and practices (Lekvall, 2014). The regulatory framework and the importance of each category differs from country to country, and as such, this thesis focuses on the regulatory framework in the Nordic countries.

Statutory regulation includes companies' acts and other laws, such as securities markets, auditing, and accounting acts. Statutory regulation is issued and monitored by governments and other authorities, such as Financial Supervisory Authorities and stock exchanges. (Lekvall, 2014). Nordic countries are identified as Scandinavian-civil-law countries, offering medium protection of investor rights but a high degree of law enforcement (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998).

Nordic corporate governance is, in addition to national regulation, governed by EU-level regulation. For example, the European Union's Shareholders' Rights Directive (SHRD) (2007/36/EC) regulates how general meetings of shareholders should be organized. Amendment of this directive (Directive (EU) 2017/828), SHRD II, that came into force in 10.6.2019 (Directors' Institute Finland, 2018), requires listed companies to compile a remuneration policy that should be approved by the general meeting of shareholders. The remuneration policy determines how executive management is compensated and, for example, what metrics the firm uses in its short- and long-term incentive plans. The remuneration policy has to be submitted to the general meeting to an advisory vote when changes to the policy are made or at least every four years (9a.5 §). SHRD II only changes market practice in Finland where the remuneration policy was not previously approved by the general meeting. In Sweden, Norway, and Denmark, the remuneration policy has already been approved by the general meeting.

Self-regulation includes regulation that is not issued by the government but formed by the business sector based on what is perceived as best practice on corporate governance. The most significant regulations in this category are the corporate governance codes. All Nordic listed companies must consider the recommendations of their national corporate governance code as a mandatory listing requirement. However, Nordic corporate

governance codes are based on a comply-or-explain principle, where the company must either comply with an individual recommendation or disclose the reason for non-compliance. (Lekvall, 2014.) The comply-or-explain principle differs from the practice in the US, where the companies must, based on the Sarbanes-Oxley Act, follow the principles of corporate governance based on a comply-or-be-punished principle (Calder, 2008, p.23).

In addition, informal norms and practices guide the way that corporate governance mechanisms are organized in practice. Especially in the Nordic countries, this type of regulation is of great importance because of relatively strong social norms and values. (Lekvall, 2014.) For example, Randoy and Nielsen (2002) argue that the equalitarian culture and social-democratic political systems in the Nordic countries have led to legislation that requires strong shareholder rights protection. Additionally, Randoy and Nielsen mention the social-democratic, equalitarian culture as one of the main reasons for relatively low CEO compensation in the Nordic countries.

3.2.2   Board of Directors

The board of directors is traditionally viewed as a tool for shareholders to monitor and advice the management of firms. The board of directors is elected by the general meeting of shareholders and is thus subordinate to shareholders. The board of directors' responsibility is to ensure that the management is acting in the best interest of shareholders, but also the interest of other stakeholders. The duties of the board of directors include, for example, auditing the firm's accounts, hiring and firing the CEO, and preparing proposals for the general meeting.

In the Nordic countries, the board of directors also decides on the compensation of the CEO. The CEO further decides on the compensation of other members of the executive management, usually together with the board of directors. In the most Nordic listed companies, boards have set up compensation committees that design executive compensation plans. As such, compensation committees, for example, define which metrics are used to measure performance in short- and long-term incentive plans. The compensation committee compiles the remuneration policy, which presents the main elements of the compensation plans. As mentioned earlier, these remuneration policies are then submitted to the general meeting to be approved by shareholders.

In the Nordic countries, the board consists mainly of non-executive directors, some of which are representatives of major shareholders. Besides, especially Norway and Sweden have nomination committees consisting merely of shareholder representatives. (Lekvall, 2014.) Most of the Nordic corporate governance codes recommend that the majority of the directors be independent of the firm and its management and that at least two directors be independent of major shareholders. In the Nordic countries, the board of directors may also involve representatives of other stakeholders than shareholders. For example, in Denmark, Norway, and Sweden, employees of big firms have a legal right to appoint employee representatives to the board of directors. In these cases, typically one-third of the directors are employee representatives. (Lekvall, 2014.) In addition to employee-representatives, representatives of suppliers or customers may serve on the board. These directors have the same decision-making powers as the shareholder-elected directors. Additionally, the board of directors frequently invites stakeholder representatives to attend board meetings and give opinions on specific issues.

3.2.3 Audit

In addition to the audit conducted by the board of directors, internal audit monitors the executive management and risk management functions of a firm and reports non-compliance of laws and regulations to the board. The internal audit ensures the functioning of other internal control mechanisms of the firm, also called the first and second lines of defence. Internal audit is thus a core of a firm's corporate governance from the point of internal monitoring. (Chartered Institute of Internal Auditors, 2019.)

In addition to the internal audit, firms are required by law to appoint an external auditor, who must be an authorized public accountant. The external auditor must be independent in relation to the firm and is elected by the general meeting of shareholders. The auditor's primary responsibility is to audit the firm's annual accounts and to issue an opinion on whether the accounts have been prepared in accordance with the laws and regulations. In Norway, Sweden, and Finland, the external auditor also has a responsibility to ensure that the management and the board have followed laws and regulations. In Sweden, the external auditor must, according to Chapter 8, Section 54, of the Swedish Companies Act (2005:551), additionally issue an opinion on whether the remuneration policy of the firm has been complied with during the last fiscal year. Typically, as the external auditor is

appointed by the general meeting, the auditor should protect the interests of shareholders. However, the auditor should, to a growing extent, also protect the interests of other stakeholders, especially the interests of the creditors. (Lekvall, 2014.)

3.2.4   Other Mechanisms

In general, it is relatively hard for stakeholders to get information on and monitor the management's behavior because stakeholders are usually dispersed, especially when it comes to other stakeholders than shareholders. For example, a firm's customer base typically consists of numerous individuals and groups, to whom coordination would be difficult and costly. However, several institutional structures have formed to gather information on firms and their management on behalf of stakeholders. These institutions either sell the information to the stakeholders, such as stock analysts or consultancy groups, or provide it free of charge, such as labor, trade or consumer unions. (Hill & Jones, 1992.) In addition, many specialty groups provide information on the social performance of companies in an attempt to drive social change. These groups include, for example, human rights, environmental, and animal welfare associations.

4   CORPORATE SOCIAL PERFORMANCE

As the stakeholder theory argues, corporate performance should be measured by corporate social performance. Corporate social performance includes the financial dimension of performance, which is relevant to shareholders, but also non-financial dimensions, which are relevant to other stakeholders. Further, if a firm wants to motivate its managers to act in the interest of all of its stakeholders, executive compensation plans should be linked to corporate social performance measures. As mentioned earlier, financial performance is often measured by accounting profits and stock returns. However, it is not as clear, which metrics should be used to measure non-financial performance. As such, this chapter aims at defining corporate social performance and how it should be measured. First, theoretical models of corporate social performance are introduced, after which it is examined how CSP is measured in practice. Further, several guidelines on corporate social responsibility and sustainable development are introduced, which guide the way that corporate social performance is defined and measured.

4.1   Theoretical framework of corporate social performance

Carroll (1979) develops a conceptual model of corporate social performance, where CSP is divided into three aspects: social responsibility, social issues, and social responsiveness. Further, Carroll divides corporate social responsibility into four categories: economic, legal, ethical and discretionary responsibilities. Economic responsibilities include a responsibility to produce and sell products and services at a profit. Legal responsibilities include a responsibility to comply with applicable laws and regulations. Ethical responsibilities go beyond laws and regulations and include a responsibility to act in accordance with what is perceived as ethical by society. Discretionary responsibilities include activities that are voluntary for a firm, or activities that the society does not directly require from all businesses. A firm's total social responsibility is a sum of a society's conception of economic, legal, ethical and discretionary responsibilities. (Carroll, 1979.)

According to Carroll (1979), social issues are issues that are linked to social responsibilities. These issues differ across times, industries and countries, and can, for example, include shareholder rights, consumerism, environment, employee rights or product and workplace safety. Further, Carroll defines social responsiveness as a firm's

philosophy to respond to social issues in its managerial processes. In Carroll's model, different philosophies of response are reaction, defense, accommodation, and proaction. Finally, corporate social performance requires the assessment of a firm's social responsibilities, identification of the social issues that a firm must respond to and selection of philosophy for a response.

Wartick and Cochran (1985) base their CSP model on the model of Carroll (1979). They set corporate social responsibility as a starting point or the principle of the model. The model thus starts from the principle that a firm has social responsibilities to which it has to respond in its business. Further, Wartick and Cochran define social responsiveness as a process in which a firm responds to its social responsibilities. Finally, social issues management is a tool to operationalize the process of social responsiveness. During social issues management, a firm identifies the social issues that are linked to its social responsibilities, analyzes them, and develops a policy for response. (Wartick & Cochran, 1985.) In conclusion, evaluation of a firm's social performance is a process of identifying responsibilities towards society, identifying key social issues that are linked to those responsibilities cross-sectionally and in each industry, assessment of the importance of each social issue in each industry and finally analyzing a firm's response to those social issues.

Clarkson (1995b) attempts to use the model of Wartick and Cochran (1985) to evaluate firms' corporate social performance in practice. Clarkson defines fulfillment of economic responsibilities as having been profitable for five consecutive years and fulfillment of legal responsibilities as having not faced litigation or allegation of illegal activities. However, Clarkson is not able to define a clear measure for the fulfillment of ethical and discretionary responsibilities. Clarkson thus argues that the model does not provide a satisfactory framework for identifying social responsibilities with accessible data. Further, Clarkson argues that the definition of social responsiveness as a firm being either reactive, defensive, accommodative or proactive towards social responsibilities and social issues does not provide a satisfactory framework for collecting, organizing and analyzing data to evaluate CSP. According to Clarkson, the definition of social responsiveness, however, helps with describing a firm's presence or absence, and implementation of, policies on social responsibility.

As Clarkson (1995b) fails to evaluate CSP with the previous models, Clarkson continues by analyzing how firms manage social issues in practice. Clarkson finds that social issues are managed in terms of managing relationships with stakeholders. Clarkson thus concludes that firms do not manage social issues with the concepts and models of corporate social responsibility, social responsiveness, and social issues management, but rather with the concepts and models of stakeholder management. According to Clarkson, from the perspective of a firm, social issues are stakeholder issues, meaning issues that are important for stakeholders. Clarkson argues that, for managers, it is easier to understand and manage issues that are important for stakeholders than issues that are important for society (i.e., social issues).

Based on his results, Clarkson (1995b) defines a firm as a set of relationships with stakeholder groups. He argues that a firm cannot continue as a going concern if it does not manage relations with its primary stakeholder groups. According to Clarkson, primary stakeholder groups are shareholders, employees, customers, suppliers, the government, and communities. In addition, secondary stakeholder groups can also affect a firm and its performance, but a failure to manage relations with them will not result in a failure of the firm. According to Clarkson, for example, media and special interest groups are secondary stakeholders for a firm. When a firm makes trade-offs among stakeholder issues, it should prioritize issues that are important for primary stakeholder groups.

Finally, Clarkson (1995b) develops the Reactive-Defensive-Accommodative-Proactive (RDAP) Scale, using Carroll's (1979) and Wartick and Cochran's (1985) terms of social responsiveness, but in the concept of stakeholder issues management. A firm is reactive when it denies its responsibilities against stakeholders and does less than what is required by stakeholders. A firm is defensive when it admits its responsibilities but fights them by doing the least that is required. A firm is accommodative when it accepts its responsibilities and does all that is required. Finally, a firm is proactive when it anticipates its responsibilities and does more than is required. RDAP Scale offers a tool for assessing a firm's policy on stakeholder issues management. (Clarkson, 1995b.)

The framework of Clarkson (1995b) is consistent with the stakeholder theory, which argues that a firm has responsibilities towards several stakeholders and, as such, should practice stakeholder management. According to the enlightened stakeholder theory,

stakeholder management is crucial for a firm to create long-term value. Clarkson's framework is based on the idea that value and corporate performance are not necessarily financial and measured with increased share price, dividends, and profits. Corporate value creation and performance are better measured with stakeholder satisfaction, which is achieved by managing stakeholder relations.

As a conclusion, Clarkson (1995b) suggests that corporate social performance or performance of individual managers can be evaluated based on how they manage relationships with stakeholders. In contrast to the earlier conclusion, evaluation of a firm's social performance is a process of identifying responsibilities towards stakeholders, identifying key stakeholder issues that are linked to those responsibilities, assessing the importance of each stakeholder issue and finally analyzing a firm's response to those stakeholder issues.

Jones (1995) suggests two techniques for assessing corporate social performance: data envelopment analysis (DEA) and reputational surveys. This thesis focuses on quantitative research and, as such, on DEA. DEA allows for assessing performance in multiple dimensions at once, which is needed for assessing a firm's management of stakeholder relations since a firm has multiple stakeholder groups and faces multiple stakeholder issues. When applying DEA to assess corporate social performance, firms are rated in multiple dimensions, each of which represents a stakeholder issue for a firm. The highest rating in each dimension is assigned to firms that apply best practices of stakeholder issues management in that specific dimension (to firms whose response to the issue is proactive). Finally, a best practice frontier is created by assigning weights to each dimension depending on the importance of the underlying stakeholder issue. (Bendheim, Waddock & Graves, 1998.)

Bendheim et al. (1998) use DEA to create a best practice frontier of social performance with respect to primary stakeholder groups. Bendheim et al. further group firms into six industry groups. They find that the practices that firms apply in their stakeholder issues management depend significantly on the industry in which they operate. In addition, the priority of different stakeholders is different across and within industries as firms make trade-offs among stakeholders. The results indicate that the interests of certain stakeholder groups are of more intrinsic value depending on the industry. Further, social responsibilities and, as such, stakeholder issues are different and of different importance

in each industry. As such, the whole universe of firms cannot be measured with the same performance criteria or the same performance dimensions in DEA, and each criterion or dimension cannot be assigned with the same weight for every firm. The best practice frontier should thus be different in each industry.

4.2 Corporate social performance in practice

In practice, corporate social performance is commonly measured by corporate social responsibility (CSR). According to ISO 26000:2010 Guidance on social responsibility, social responsibility is defined as *"responsibility of an organization for the impacts of its decisions and activities on society and the environment, through transparent and ethical behaviour that*

- *contributes to sustainable development, including health and the welfare of society;*
- *takes into account the expectations of stakeholders;*
- *is in compliance with applicable law and consistent with international norms of behaviour; and*
- *is integrated throughout the organization and practiced in its relationships"*.

Further, central to corporate social responsibility are sustainable development goals, that consist of social, economic, and environmental goals, and that can be achieved by participating stakeholders in the organizational structures. Corporate social responsibility can thus be measured in four separate dimensions: financial (prosperity), social (people), environmental (planet), and governance (participation).

The environmental, social, and governance (ESG) dimensions are commonly further divided into several dimensions, each of which represents stakeholder issues demanded by primary stakeholder groups. The environmental performance factor measures firms' management of relations with the environment. The environment is not mentioned as a primary stakeholder group by Clarkson (1995b) but has been classified as one by many other researchers, such as Starik (1995). Environmental issues include, for example, the management of climate change, natural resources, waste, energy, and circular economy. The social performance factor commonly measures a firm's management of relations with another primary, human stakeholders (people). Social issues include, for example, management of workplace and product safety, working conditions, human rights issues, and fair dealing. The governance performance factor relates to the corporate governance

systems of firms, which are explained in depth in chapter 3. Governance issues include, for example, business ethics, compliance with laws and regulations, and shareholder rights.

Performance on the financial dimension, corporate financial performance (CFP), is most often measured in terms of accounting profits, increased share price, and dividends. According to the shareholder-based agency theory, the financial dimension is the only relevant dimension of corporate performance. However, the stakeholder-based agency theory suggests also using ESG dimensions in the measurement of corporate performance. In this thesis, corporate performance is measured according to the stakeholder theory and by corporate social performance.

Performance on ESG dimensions is most often measured by ESG ratings. There exist several rating agencies that rate firms across the world based on their performance on ESG dimensions. Examples of providers of ESG ratings are Bloomberg, Corporate Knights, DowJones Sustainability Index, Institutional Shareholder Services (ISS), MSCI, ResRisk, Sustainanalytics, and Thomson Reuters. ESG rating methodologies naturally differ from provider to provider, but they are mostly consistent with DEA. ESG ratings are most often industry-specific and deal with stakeholder issues that are relevant in each industry. (Huber & Comstock, 2017.)

4.3 Guidelines on corporate social responsibility and sustainability

Several organizations have developed guidelines on corporate social responsibility and sustainability that guide the way that firms identify and respond to corporate social responsibilities, and consequently, how rating agencies measure corporate social performance. These guidelines include, for example, the International Organization for Standardization's guidance on social responsibility (ISO 26000:2010), United Nations' Sustainable Development Goals (SDGs) and Global Compact Principles, the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises, the Global Reporting Initiative's Sustainability Reporting Standards (GRI Standards), and Sustainability Accounting Standards Board's (SASB) Standards. These guidelines and their link to ESG performance are explained during the following paragraphs.

ISO 26000:2010 provides internationally accepted guidance on social responsibility based on a multi-stakeholder approach. The standard provides guidance on identifying social responsibilities and key issues related to those responsibilities, as well as on how to respond to social responsibilities while engaging stakeholders. The standard is meant to give guidance for all types of organizations in the development of socially responsible practices, as well as in the evaluation of corporate performance. (ISO 26000:2010.)

As core subjects of social responsibility, the ISO 26000:2010 standard lists organizational governance, human rights, labor practices, the environment, fair operating practices, consumer issues, and community involvement and development. These subjects are further divided into core issues. The standard's definition of social responsibility and core subjects and issues are in accordance with stakeholder theory and highlight the importance of stakeholder issues and relations management. In addition, they support the use of ESG dimensions as performance criteria since the environment and governance dimensions are directly mentioned as core subjects, while the other core subjects are consistent with the social dimension.

In 2015, the United Nations Member States adopted the 2030 Agenda for Sustainable Development, introducing 17 SDGs as a means to achieve sustainable development. The Agenda also recognizes the three dimensions of sustainable development: economic, social, and environmental. Development in these dimensions is needed to end poverty and hunger, reduce inequalities, secure human rights and peaceful societies, protect the planet and its natural resources, create decent work for all, and to ensure sustainable economic growth, among other things. To achieve the goals, the Agenda demands all countries and stakeholders to work towards the goals in a collaborative partnership. (United Nations, 2015.)

The UN Global Compact is a voluntary initiative for businesses to work towards sustainable development and the achievement of the United Nations' SDGs. At the moment, 9,913 companies from 159 countries have joined the Global Compact. As a participant of the Global Compact, a company commits to incorporating the Ten Principles of the UN Global Compact to its strategy and operations as well as engaging with stakeholders in the process. The Ten Principles demand companies consider their responsibilities in the areas of human rights, labor, environment, and anti-corruption. When it comes to ESG performance, the Global Compact categorizes issues in the areas

of human rights and labor to be social issues, issues in the area of the environment to be environmental issues and issues in the area of anti-corruption to be governance issues. (UN Global Compact, n.d.) The Ten Principles of the UN Global Compact are listed in table 2.

Table 2. The Ten Principles of the UN Global Compact and the OECD Guidelines for Multinational Enterprises (adapted from OECD, 2005)

AREA	GLOBAL COMPACT PRINCIPLES	OECD GUIDELINES' CHAPTERS
HUMAN RIGHTS	**Principle 1:** Businesses should support and respect the protection of internationally proclaimed human rights; and **Principles 2:** make sure that they are not complicit in human rights abuses.	**Chapter II.** General Policies **Chapter IV.** Human Rights **Chapter VIII.** Consumer Interests
LABOUR	**Principle 3:** Businesses should uphold the freedom of association and effective recognition of the right to collective bargaining; **Principle 4:** the elimination of all forms of forced and compulsory labour; **Principle 5:** the effective abolition of child labour; and **Principle 6:** the elimination of discrimination in respect of employment and occupation.	**Chapter V.** Employment and Industrial Relations
ENVIRONMENT	**Principle 7:** Businesses should support a precautionary approach to environmental challenges; **Principle 8:** undertake initiatives to promote greater environmental responsibility; and **Principle 9:** encourage the development and diffusion of environmentally friendly technologies.	**Chapter VI.** Environment
ANTI-CORRUPTION	**Principle 10:** Businesses should work against corruption in all its forms, including extortion and bribery.	**Chapter VII.** Combating Bribery, Bribe Solicitation and Extortion
OTHER ISSUES		**Chapter III.** Disclosure **Chapter VIII.** Consumer Interests **Chapter IX.** Science and Technology **Chapter X.** Competition **Chapter XI.** Taxation

Similar to the UN Global Compact, also the OECD Guidelines for Multinational Enterprises provide non-binding guidelines for sustainable business. As of May 25, 2011, 42 governments were adhering to the guidelines. Multinational enterprises of the adhering governments are recommended to follow the guidelines to promote economic, environmental, and social development and to minimize the negative effects of their business. The guidelines further focus on sustainable development from the perspective of international trade and investments. (OECD, 2011.)

The OECD Guidelines for Multinational Enterprises are based on similar norms in the areas of human rights, labor, environment, and anti-corruption than the UN Global Compact. However, the OECD Guidelines for Multinational Enterprises provide more detailed recommendations, which are followed by companies based on government commitment, whereas the UN Global Compact is based on CEO commitment. In addition, the OECD Guidelines for Multinational Enterprises provide recommendations in the areas of disclosure, consumer interests, science and technology, competition, and taxation, which are not covered in the UN Global Compact. (OECD, 2005.) A comparison between the UN Global Compact and the OECD Guidelines for Multinational Enterprises is provided in table 2.

The GRI Standards instruct organizations with reporting of their economic, environmental, and social impacts. The GRI Standards are meant for organizations that prepare sustainability or CSR reports. In the reports, organizations should disclose information on the positive and negative impacts of their business on stakeholders. According to the GRI, sustainability or CSR reports can thus help in communicating and evaluating economic and ESG performance. (GRI, n.d.) In addition, the SASB Standards instruct businesses with reporting of ESG and sustainability information. However, the SASB Standards only focus on ESG information that is financially material and relevant to investors. (SASB, n.d.)

5   EMPIRICAL RESEARCH ON PAY-PERFORMANCE LINK

Most of the empirical studies on the pay-performance link study the link between CEO compensation and corporate financial performance, excluding ESG performance from the definition of corporate performance. Only a few studies include some measures of ESG performance. Besides, most of the studies have been conducted in the US. When it comes to the Nordic countries, a few studies exist on the link between CEO compensation and corporate financial performance, but no studies exist on the link between CEO compensation and corporate social performance.

There exist several reasons why the pay-performance link may be different in the US than in the Nordic countries. First of all, Murphy (1999) finds that the average total CEO pay is more than double the average total CEO pay in other countries. In addition, he finds that CEOs in the US get compensated less in the form of base salary and more in the form of stock options than CEOs in other countries. As mentioned earlier, in the Nordic countries, base salary still forms a relatively big part of the total CEO compensation. As such, the pay-performance link is expected to be stronger among US firms, since the relationship between CEO pay and financial performance is mainly driven by stock options (Hall & Liebman, 1998; Murphy, 1999). As the pay-performance link can be expected to be different outside and inside the Nordic countries, the most seminal studies on the pay-financial performance link outside the Nordic countries are introduced separately in section 5.1.1, whereas the studies on the pay-financial performance link in the Nordic countries are introduced in section 5.1.2.

When it comes to the relationship between CEO compensation and corporate social performance, some studies study the effect of CEO compensation on CSP, thus using CSP as a dependent variable, and some studies, as well as this thesis, focus on studying the effect of CSP on CEO compensation, using CEO compensation as a dependent variable. The studies that focus on the effect of CEO compensation on CSP, however, only use environmental and social (E&S) performance measures, and exclude governance performance measures, in their corporate social performance measure. These studies and their findings are presented in section 5.3. The studies that focus on the effect of CSP on CEO compensation and their findings are further presented in section 5.4.

It should be addressed that some studies only use CEO cash compensation (base salary and annual bonuses) as a measure of CEO pay, whereas other studies use total CEO compensation, including all components of executive compensation listed in section 4.1. A few studies study the link between CEO wealth and corporate financial performance, where CEO wealth consists of total CEO compensation and CEO stockholdings. The way that CEO compensation is measured has a big impact on the results. Naturally, the pay-performance link is the weakest when only CEO cash compensation is used and the strongest when CEO wealth is used.

5.1 The link between CEO pay and corporate financial performance

5.1.1 The pay-financial performance link outside Nordic countries

The most cited study on the pay-performance link is a study by Jensen and Murphy (1990). Jensen and Murphy study how a change in CEO wealth is associated with a change in shareholder wealth. Their sample data consists of 1,295 US firms during the years 1974-1986. Jensen and Murphy define the change in shareholder wealth as $r_t V_{t-1}$, where r_t is the rate of return on a firm's stock in year t, adjusted by inflation, and V_{t-1} is the market value of a firm in year $t-1$. They use both simultaneous and lagged values of the change in shareholder wealth. They find a positive and statistically significant relationship between the change in CEO wealth and the change in shareholder wealth. However, the relationship is small in economic terms. According to their results, for every $1,000 increase in shareholder wealth, a CEO's total pay-related wealth increases by 75 cents. When CEO stockholdings are included in the measure of CEO wealth, for every $1,000 increase in shareholder wealth, CEO wealth increases by $3.25. The results indicate that CEO stockholdings create better incentives for CEOs to act in the interest of shareholders than CEO compensation.

Hall and Liebman (1998) conduct a similar study to that of Jensen and Murphy (1990). Their sample data consists of 478 U.S. listed firms during the years 1980-1994. They find a stronger pay-performance link than Jensen and Murphy. According to their results from the year 1994, for every $1,000 increase in firm value, median CEO wealth increases by $5.29. In contrast to Jensen and Murphy, Hall and Liebman include stock grants during the year to their CEO wealth measure, which can explain the differing results. However, Hall and Liebman find that the pay-performance link also increased significantly during

their measurement period. They argue that the pay-performance sensitivity has increased over time because of an increase in stock option grants and an increase in CEO stockholdings. Their argument is based on their results which show that the pay-performance sensitivity is mainly driven by changes in the value of stock options and CEO stockholdings, whereas salary and bonus are rather insensitive to changes in firm value. Murphy (1999) also finds that the pay-performance sensitivity tripled from the 1970s to 1997 and argues that the reason lies in the increased use of stock options.

Miller (1995) studies the pay-performance link using accounting-based measures of financial performance. Specifically, the measures that he uses are ROE, net profit margin, and earnings per share (EPS). His sample data consists of about 800 US firms from 1983 to 1989. Miller does not find a significant relationship between the change in CEO compensation and the change in accounting-based financial performance measures. However, Miller only uses salary and bonus as a measure of CEO compensation and excludes the effect of long-term incentives from the study.

Outside the US, Conyon and Leech (1994) study the link between the highest-paid director's salary and financial performance in the UK in 1985. As financial performance measures, they use market capitalization, return on shareholders' capital, and the trading profit margin. They find a positive and significant relationship between the highest-paid director's salary and financial performance, regardless of the performance measure used. According to their results, a 10 percent increase in firm value accounts for a £349 increase in the director's salary, an increase of 0.71 percent. In addition, Conyon and Schwalbach (2000) study the link between executive cash compensation and total shareholder return in the UK and Germany from the late 1960s to the mid-1990s. They find a positive and significant relationship in both countries.

Fernandes (2008) studies the link between executive cash compensation and financial performance in Portugal from 2002 to 2004. Fernandes does not find a significant link, regardless of whether stock-based or accounting-based performance measures are used. Fernandes, however, excludes stock options from the measure of executive compensation, which may explain the results. Another study from Europe by Duffhues and Kabir (2008) study the pay-performance link in the Netherlands from 1998 to 2001 and use return on sales (ROS), ROA, annual stock return, and Tobin's Q as performance measures. Surprisingly, Duffhues and Kabir find a negative and significant relationship

between cash compensation and all of the performance measures used, as well as a negative and significant relationship between total compensation and Tobin's Q.

Tosi et al. (2000) study the determinants of CEO pay by doing a meta-analysis of 137 studies. They test two alternative hypotheses: whether financial performance is a significant determinant of CEO pay or whether CEO pay is rather insensitive to financial performance and mainly determined by firm size. As a dependent variable, Tosi et al. use total CEO pay, including short- and long-term incentives. As measures of financial performance, they use ROA, short-term ROE, and change in financial performance indicators, such as a change in accounting profits and a change in ROE. Tosi et al. find that firm size is the main determinant of CEO pay as it explains more than 40 percent of the variance in CEO pay. Out of the financial performance measures used, short-term ROE and ROA explain 4.5 percent and slightly less than 2 percent of the variance in CEO pay, consequently. Further, the change in financial performance explains about 4 percent of the variance in CEO pay. However, only relationships between CEO pay and ROE and CEO pay and ROA are statistically significant.

5.1.2   The pay-financial performance link in Nordic countries

Viittaniemi (1997) studies the link between CEO compensation and corporate financial performance among Finnish companies. His sample data consists of 48 listed companies and 70 unlisted companies during the years 1988-1993. He uses the natural logarithm of total CEO compensation as a dependent variable. As measures of corporate financial performance, he uses annual stock return, return on investment (ROI), and ROE, lagged by one year. He also controls for firm size, using the natural logarithm of revenues as a measure of firm size. When it comes to listed companies, he finds that firm size is the most significant determinant of CEO compensation. He also finds a significant, positive relationship between CEO compensation and annual stock return and a weak positive relationship between CEO compensation and ROI. However, he does not find a significant relationship between CEO compensation and ROE. When it comes to unlisted companies, Viittaniemi does not find any significant relationships between CEO compensation and corporate financial performance measures.

Similar to Viittaniemi (1997), also Mäkinen (2007) studies the link between CEO compensation and corporate financial performance among Finnish CEOs, but during the

years 1996-2002. The number of CEOs included in his dataset varies between 43 and 82, depending on a year. The structure of Mäkinen's study is very similar compared with that of Viittaniemi's study. In contrast to Viittaniemi, Mäkinen uses a measure of shareholder wealth (similar to that of Jensen and Murphy (1990)) and ROA, in addition to annual stock return, as measures of corporate financial performance. Additionally, Mäkinen uses both simultaneous and once lagged values of the independent variables. When simultaneous values are used, he finds a significantly positive relationship between CEO compensation and stock-based performance measures, but no relationship between CEO compensation and ROA. According to his results, for every €1,000 change in shareholder wealth, CEO total compensation changes by €21.85. When once lagged values are used, a significant positive link between CEO compensation and all performance measures exists. However, as Viittaniemi, Mäkinen finds that firm size is the most significant determinant of CEO compensation.

Eriksson and Lausten (2000) study whether a change in managerial compensation is linked to corporate financial performance and firm size in Denmark. Their sample data consists of 1,152 managers in 160 companies from 1992 to 1995. Their compensation data includes salary and bonuses, but not long-term incentive awards, of CEOs and other managers. As performance measures, they use both the absolute level of and a change in return on capital and accounting profits after taxes. They find that the return on capital measures are significantly and positively linked to changes in managerial compensation. The link is even stronger when only changes in CEO compensation are studied. When it comes to accounting profits, only increases in profits are significantly linked to changes in managerial compensation. However, no significant link between changes in accounting profits and changes in CEO compensation exists.

Firth, Lohne, Ropstad and Sjo (1996) study the link between CEO compensation and corporate financial performance among Norwegian listed firms from 1986 to 1994. The sample size varies between 71 and 95 firms, depending on a year. As measures of financial performance, they use annual stock return, return on capital employed (ROCE), and ROA. They do not find a statistically significant link between total CEO compensation and the financial performance measures, regardless of whether financial performance measures are lagged by one year or not. However, they find a significantly positive relationship between total CEO compensation and firm size, regardless of

whether the firm size is measured as logarithm of revenues, value-added, total assets, number of employees or market capitalization.

Randoy and Nielsen (2002) study the link between CEO compensation and financial performance among Swedish and Norwegian listed companies. Their sample data consists of 224 companies, 104 being Swedish and 120 being Norwegian. As a dependent variable, they use the natural logarithm of total CEO compensation in 1998. As financial performance measures, they use ROE, change in stock price, and change in market-to-book ratio from 1996 to 1998. They do not find a significant link between CEO compensation and financial performance measures, expect among Norwegian firms when the change in the market-to-book ratio is used. Further, they find a significantly positive relationship between CEO compensation and firm size, measured as the natural logarithm of market capitalization.

Oreland (2007) studies whether the ownership structure of firms affects the pay-performance relationship of CEOs among Swedish listed firms. His sample consists of 196 firms in 2004. Oreland only uses CEO cash compensation, meaning fixed pay and annual bonus, and excludes stock-based compensation from the study. As financial performance measures, Oreland uses annual stock return, growth in market capitalization, EBITDA, and ROA. According to his results, a significantly positive link exists only between CEO cash compensation and annual stock return, and CEO cash compensation and EBITDA. In line with the earlier studies, firm size seems to be the most significant determinant of CEO compensation.

In conclusion, all studies on CEO compensation in the Nordic countries find the firm size to be the most significant determinant of CEO compensation, regardless of the measure of the firm size used. The results could be explained by the high social values in the Nordic countries. For example, Randoy and Nielsen (2002) argue that CEO compensation in Scandinavia is relatively lower than in other countries because of the social democratic culture. As such, they argue that CEOs do not get paid based on the importance of their positions, but because their positions are demanding. It is more demanding to act as the CEO of a large firm than a small firm. CEOs of large firms should thus get higher pay. As such, the first hypothesis of this thesis is the following:

H 1: *There exists a positive relationship between Nordic CEO compensation and firm size. The relationship is stronger than the relationship between CEO compensation and corporate social performance.*

When it comes to the CEO pay-financial performance link, a significant relationship between CEO compensation and stock-based performance measures is most often found. Out of four studies that use annual stock return as a performance measure, three find a significant relationship. Only a study on Norwegian firms by Firth et al. (1996) does not find a significant relationship between CEO compensation and annual stock return. Stock-based performance measures are most often used in long-term incentive plans. As mentioned earlier, Nordic CEO compensation consists, to a growing extent, of long-term incentive grants. As such, the relationship between CEO compensation and stock-based performance measures is expected to remain significant. Hence, the second hypothesis is the following:

H 2: *There exists a positive relationship between Nordic CEO compensation and stock-based financial performance.*

When it comes to accounting-based measures, there exist mixed results. Viittaniemi (1997) finds a significant relationship between CEO compensation and ROI in Finland, and Eriksson and Lausten (2000) find a significant relationship between CEO compensation and return on capital in Denmark. Mäkinen (2007) finds a significant relationship between CEO compensation and lagged ROA in Finland, whereas Oreland (2007) does not find such a relationship to exist in Sweden. Further, Oreland finds a significant relationship between CEO compensation and EBITDA in Sweden, whereas Eriksson and Lausten do not find a relationship between CEO compensation and accounting profits after taxes in Denmark. There does not exist a significant relationship between CEO compensation and ROE in any of the studies. However, Nordic companies do often use accounting-based performance measures in their annual bonus plans. Accounting-based measures are, in addition to stock-based measures, also used in long-term incentive plans. As such, the third hypothesis is the following:

H 3: *There exist a positive relationship between Nordic CEO compensation and accounting-based financial performance. The relationship is, however, weaker*

than the relationship between CEO compensation and stock-based financial performance.

5.2   The effect of CEO compensation on E&S performance

McGuire, Dow, and Argheyd (2003) study the link between CEO compensation and E&S performance. Their sample data consists of 374 US firms in 1999. As a measure of E&S performance, they use Kinder, Lindenberg and Domini, and Company, (KLD) database on corporate social performance. The KLD database rates firms based on their performance among several dimensions, of which McGuire et al. use the following dimensions: environment, employee relations, community relations, and product. A firm is rated separately for its strengths and weaknesses in each dimension. McGuire et al. find that CEO salary and long-term incentives are positively and significantly linked to E&S weaknesses. As such, CEOs of firms with controversial practices in the management of the environment, employees, communities, and customers receive higher salaries and long-term incentives. However, they do not find a significant relationship between any component of CEO compensation and E&S strengths. Their findings indicate that CEOs are not incentivized to act in the interest of the environment, employees, communities or customers, each of which is a primary stakeholder group for a firm.

Mahoney and Thorn (2006) conduct a similar study to that of McGuire et al. (2003), but their sample data consists of 77 Canadian firms in 1995. In contrast to McGuire et al., they use CSR ratings in the CSID database as a measure of E&S performance. They conduct two separate studies. To be consistent with McGuire et al., their first study measures performance in four dimensions: environment, employee relations, community and product, and business practices. In the second study, they add three dimensions: diversity, international and other. As in McGuire et al., firms are rated separately for strengths and weaknesses in each dimension. However, Mahoney and Thorn also include a total rating, which is the sum of strengths reduced by the sum of weaknesses. In a study consistent with McGuire et al., they do not find a significant relationship between any component of CEO compensation and the weaknesses rating, but they do find a positive and significant relationship between stock options and the strengths rating. The results are therefore conflicting with the results of McGuire et al. In their model of seven dimensions, they also find a positive and significant relationship between stock options and weaknesses rating and stock options and the total rating. They also repeat both of the

studies using lagged CSR ratings. In addition to the previous results, they find a significantly positive relationship between annual bonus and strengths rating and salary and weaknesses rating.

Deckop, Merriman, and Gupta (2006) hypothesize that CEOs of firms that have a short-term pay focus are not incentivized to increase their E&S performance as E&S investments are costly in the short-term. They further hypothesize that CEOs of firms that have a long-term pay focus, in turn, are incentivized to increase their E&S performance because E&S investments have been proven to be positively associated with corporate financial performance in the long-term. To test their hypotheses, Deckop et al. study the relationship between short-term pay focus, defined as the value of annual bonuses divided by the value of total pay, and E&S performance, as well as the relationship between long-term pay focus, defined as the value of stock options and restricted stocks divided by the value of total pay, and E&S performance. Their sample data consists of 313 US firms in 2001. Similar to McGuire et al. (2003), they use CSP ratings in the KLD database as a measure of E&S performance. However, they use the following six dimensions: environment, employee relations, community relations, product, human rights and, diversity. They find, consistent with their hypotheses, a significant, negative relationship between short-term pay focus and E&S performance and a significant, positive relationship between long-term pay focus and E&S performance.

In conclusion, the results of Mahoney and Thorn (2006) and Deckop et al. (2006) indicate that firms that want to motivate their CEOs to act in the interest of stakeholders should compensate their CEOs with a high fraction of long-term incentives. The study of McGuire et al. (2003), however, indicates the opposite. When it comes to annual bonuses, Mahoney and Thorn find that annual bonuses could also motivate CEOs to act in the interest of stakeholders, whereas Deckop et al. find the opposite. Further, Mahoney and Thorn and McGuire et al. both find that controversial E&S practices are associated with high salaries.

5.3   The link between CEO pay and corporate social performance

Stanwick and Stanwick (2001) study the effect of financial and environmental performance on total CEO compensation. Their sample data consists of nearly 200 US firms from 1990 to 1991. They use the revised Fortune Corporate Reputation Index as a

measure of environmental performance and ROE as a measure of financial performance. In addition, they control for firm size, using the natural logarithm of revenues as a measure of firm size. They find a significantly positive link between total CEO compensation and ROE, and total CEO compensation and firm size, in both years. However, they find a negative link between total CEO compensation and environmental performance, the link being non-significant in 1990 but significant in 1991. The results are the same when salary alone is used as a measure of CEO compensation. The results thus indicate that CEOs in the US are motivated to increase the accounting performance of their firms, as high levels of ROE are associated with high levels of CEO compensation, but discouraged to act in the interest of the environment.

In addition to Stanwick and Stanwick (2001), Cordeiro and Sarkis (2008) study the relationship between total CEO compensation and financial and environmental performance in the US. Their sample data consists of 172 Standard & Poor 500 firms that, in 1996, responded to Investor Responsibility Research Council's (IRRC) survey on whether their executive compensation plans are explicitly linked to environmental performance metrics. Cordeiro and Sarkis use IRRC emission, compliance and spill indices as a measure of environmental performance and ROA and annual stock return as measures of financial performance. According to their results, among firms that explicitly use environmental performance metrics in their compensation plans, there exists a negative and significant relationship between total CEO compensation and bad environmental performance, as measured by compliance and spill indices. In addition, there also exists a significantly positive link between CEO compensation and ROA but no significant link between CEO compensation and annual stock return. However, among firms that do not use environmental performance metrics in their compensation plans, there does not exist a significant relationship between CEO compensation and any of the indices or CEO compensation and any of the financial performance measures.

In conclusion, the results of Cordeiro and Sarkis (2008) indicate that firms need to explicitly include performance metrics, whether environmental or financial, in their compensation plans for the pay-performance link to exist. CEOs of firms that use performance metrics seem to be motivated to comply with environmental regulation, avoid chemical and oil spills, and increase accounting performance, as these are associated with high levels of CEO pay. When the study of Cordeiro and Sarkis and the study of Stanwick and Stanwick (2001) are compared, it seems like CEOs are motivated

to avoid bad environmental practices in the fear of penalties but not motivated to increase environmental performance beyond regulation. As such, and as Nordic companies do not usually disclose any usage of environmental performance metrics in their executive compensation plans, the following hypothesis is made:

> **H 4:** *There does not exist a significant relationship between Nordic CEO compensation and environmental performance.*

Callan and Thomas (2014) study the link between CEO compensation and corporate social performance with a multi-equation model to allow for the endogeneity of the variables. In their model, they use panel data on 288 US firms from 2003 to 2005. They use CSR indicators from the KLD STATS database as a measure of ESG performance and ROS as a measure of financial performance. The CSR indicators measure performance on the following dimensions: environment, employee relations, community relations, product, human rights, diversity, and corporate governance. When it comes to the effect of CSP on CEO compensation, Callan and Thomas find a positive and significant relationship between financial performance and CEO compensation, as well as between ESG performance and CEO compensation, regardless of the measure of CEO compensation used (short-term, long-term or total compensation). Financial performance, however, has the largest effect on total compensation, whereas ESG performance has the largest effect on long-term compensation.

In conclusion, ESG performance seems to be a determinant of CEO compensation, in addition to financial performance. However, the relationship between ESG performance and CEO compensation has only been studied in the US. A similar study needs to be conducted with Nordic firms to know if a similar relationship exists in the Nordic countries. As Callan and Thomas (2014) find a positive relationship between overall ESG performance and CEO compensation, and as the hypothesis four of this study predicts no significant relationship to exist between environmental performance and Nordic CEO compensation, the following final hypothesis is made:

> **H 5:** *There exists a positive and significant relationship between social and performance and Nordic CEO compensation as well as between governance performance and Nordic CEO compensation.*

6   DESCRIPTION OF DATA AND METHODOLOGY

In this chapter, a detailed description of the research design and methodology is given. First, a description of the data collection process and the construction of the sample data is given. After that, the variables in the data are divided into the dependent variables, control variables, and variables of interest. Further, descriptive statistics of the variables and Pearson correlations between the variables are discussed. Finally, the methodology of the thesis and the regression models are introduced and explained.

6.1   Sample Data

To study the relationship between CEO compensation and corporate social performance, data on Nordic CEO compensation, stock- and accounting-based financial performance and ESG performance was collected. In addition, data on firm size was collected, since it is the largest determinant of CEO compensation according to past studies. Because of data accessibility, the sample data consists of Nordic listed firms that are currently, or have been in the past few years, included in major Nordic indices: OMX Helsinki 25, OMX Copenhagen 25, OMX Stockholm 30 and OBX 25. As such, the sample data represents the largest Nordic firms. Further, the data was collected for years 2013-2017, as CEO compensation data was only accessible for those years. Firms, whose CEO compensation figures or ESG performance measures were not available, were excluded from the study. In total, this yielded 99 firms, of which 27 are from Sweden, 26 are from Finland, 24 are from Norway and 22 are from Denmark. A list of the companies included in the sample data is in appendix 1.

6.2   Model Variables

6.2.1   Dependent variable

As this thesis studies whether CEO compensation in Nordic listed firms is linked to corporate social performance, CEO compensation is used as a dependent variable. The CEO compensation figures have been obtained from the Institutional Shareholder Services Inc. The dataset obtained contains total annual compensation figures, including all components of the compensation plans, for major Nordic listed firms from 2013 to 2017. The compensation figures in the dataset are based on realized, not granted, pay. As

such, the total CEO compensation figures in a given year include base salaries and the value of benefits paid, and annual bonuses and the value of incentive grants earned (exercised or vested due to the achievement of performance targets) during the year. The value of incentive grants is based on the value at the end of the year. (Gerritsen & Bueno, 2019.)

The total compensation figures in the dataset are generally given in national currencies. As such, the figures given in Euros, Swedish crowns, Norwegian crowns, and Danish crowns are translated to US dollars using average annual exchange rates for a given year. The average annual exchange rates are obtained from the OECD's Monthly Monetary and Financial Statistics (MEI). A common practice in the pay-performance literature is to use the natural logarithm of the total CEO compensation as a dependent variable, to control for heteroskedasticity in the CEO compensation figures. The same is applied in this study.

6.2.2 Variables of interest

Financial performance measures

As Nordic executive compensation plans typically include both stock-based and accounting-based performance measures, variables of both types are used in this thesis as well. As a stock-based performance measure, annual stock return is used, as it is a significant determinant of Nordic CEO compensation according to previous studies. As accounting-based performance measures, ROA and ROE are used. ROA is typically measured as net income divided by total assets, whereas ROE is measured as net income divided by total equity. The meta-analysis by Tosi et al. (2000) shows that, out of financial performance measures, ROA and ROE explain the largest amount of variation in CEO pay. Annual stock returns, as well as ROA and ROE ratios, are given in percentages and have been obtained from Morningstar.

ESG performance measures

As a measure of ESG performance, Corporate Ratings obtained from ISS-oekom are used. The ISS-oekom Corporate Ratings measure ESG performance of firms in all major stock indices as well as of firms in some small and mid-cap indices. An overall Corporate

Rating consists of a social and governance rating and an environmental rating, both of which form 50 percent of the overall rating. Both the social and governance rating and the environmental rating are divided into several criteria that are rated individually. For each firm, a standard set of cross-sectional criteria, as well as a set of industry-specific criteria, are used. Each criterion is rated with a twelve-point rating system, ranging from A+ with a corresponding numeric value 4.00 (excellent performance) to D- with a corresponding numeric value 1.00 (poor performance). All criteria are further weighted and aggregated for the overall social and governance or environmental rating. The industry-specific criteria are assigned a weight of at least 50 percent in total. (ISS-oekom, 2018.) For this thesis, annual numeric social and governance ratings and environmental ratings of firms in major Nordic stock indices are used.

The ISS-oekom Corporate Ratings are updated annually and when events, such as controversial practices or mergers, occur. Annual updates are mainly based on information that firms disclose in their annual reports, CSR reports, and websites. Additional information is obtained through dialogue with the firms as well as from external sources. (ISS-oekom, 2018.)

6.2.3   Control variables

According to previous studies, such as a study by Murphy (1999), the pay-performance link varies with firm size and industry. For example, large firms, to a larger extent, use long-term incentives in their executive compensation plans. In addition, firms benchmark their executive compensation plans against other firms in the same industry. As such, firm size and industry are added as control variables. As a measure of firm size, annual revenues are used. Revenues, given in US dollars, are obtained from Morningstar. Because of the non-normality in the revenue distribution, the natural logarithm of the revenues is used. Further, the following industry dummy variables are used: Industrials, Materials, Energy, Telecommunication & Technology, Consumer Staples, Consumer Discretionary, Health Care, and Financials.

6.2.4   Descriptive statistics of the model variables

In this section, descriptive statistics of the model variables are reported and analyzed. Table 3. shows the descriptive statistics of the dependent variable, total CEO

compensation, whereas table 4. shows the descriptive statistics of the independent variables. The descriptive statistics of the total CEO compensation are reported for each year 2013-2017 to see how total CEO compensation has changed over the period.

Table 3. Descriptive Statistics of the total CEO compensation in 2013-2017 ($million)

	2013	2014	2015	2016	2017	All
Mean	2.44	2.71	2.46	2.58	2.82	2.60
Median	2.09	2.29	1.75	1.99	2.01	1.99
Std Dev	1.45	2.00	2.42	2.51	4.68	2.84
Min	0.29	0.25	0.23	0.20	0.27	0.20
Max	6.79	14.58	12.72	16.35	44.67	44.67
N	94	98	99	99	99	489

N= number of observations

Table 3. shows that the mean total CEO compensation is considerably higher than the median total CEO compensation throughout the whole period. As such, the distribution of the total CEO compensation is not normal but skewed to the right. When it comes to changes in the total CEO compensation, the mean compensation has increased by 15.86 percent from 2013 to 2017. However, the median compensation has decreased by 3.93 percent. This indicates that the gap between the lowest-paid CEO and the highest-paid CEO in the sample has increased, which can also be observed from the minimum and maximum compensation figures. In 2013, the gap between the lowest- and the highest-paid CEO was $6.50 million whereas in 2017 it was $44.40 million. The increase in the gap, and in the mean total CEO compensation, is due to an increase in the maximum compensation, which has increased by approximately 558 percent from 2013 to 2017. As such, the deviation in the compensation across firms is high, the standard deviation being $2.83 million during the whole period.

Table 4. Descriptive Statistics of the independent variables during 2013-2017

	Mean	Median	Std Dev	Min	Max	N
Annual Return (%)	17.65	13.20	50.13	-88.04	605.59	483
ROA (%)	5.92	4.41	11.85	-37.48	127.51	495
ROE (%)	13.42	12.99	24.38	-112.56	258.12	487
SocGov	2.03	2.03	0.38	1.12	3.01	473
Env	1.96	1.86	0.52	1.01	3.56	473
Revenue ($billion)	6.11	3.11	8.88	-0.36	101.85	495

SocGov = numeric social and governance rating, Env = numeric environmental rating, and N = number of observations.

Table 4 shows the descriptive statistics of the independent variables during the whole period 2013-2017. When it comes to the annual return, firms in the sample have an average annual return of 17.65 percent. However, the gap between the lowest and the highest return, and hence, the standard deviation, is high. Therefore, the distribution is not normal and exhibits heavy tails, meaning excess kurtosis. The same applies to revenues as the mean revenue is almost double the size of the median revenue. The distributions of ROA and ROE seem to be closer to normal, but heavy tails still exist to some degree. The standard deviations of both ROA and ROE have, however, increased over time, indicating that the profitability gap between the Nordic firms is increasing.

The distributions of the social and governance rating and the environmental rating seem to be rather normal. The mean social and governance and environmental ratings are 2.03 and 1.96, respectively, and represent medium performance in the ISS-oekom rating system. The maximum social and governance rating is 3.01, representing good performance, and the maximum environmental rating is 3.56, representing excellent performance. Both the minimum social and governance rating and the minimum environmental rating represent the lowest rating in the ISS-oekom rating system. Hence, there is more variation in the environmental ratings and, as such, the environmental management practices of Nordic firms seem to vary greatly. However, the standard deviations of both the social and governance rating and the environmental rating have decreased over time, indicating that the lowest ESG performers are improving their ESG practices and that the gap between the lowest and the highest ESG performers is decreasing. Regardless, the corporate social performance of large Nordic firms is still, on average, far from excellent.

6.2.5   Pearson correlations between the model variables

Table 5. reports the Pearson correlations between the model variables. Pearson correlations vary between 1 and -1 and measure the linear relationship between two variables. A correlation of 1 indicates a perfect positive relationship, whereas a correlation of -1 indicates a perfect negative relationship. A correlation of 0 further indicates that the variables are not linearly related. However, the Pearson correlations do not measure causality between the variables. For example, significant positive correlations between total CEO compensation and corporate social performance

measures do not automatically mean that higher levels of corporate social performance cause higher levels of total CEO compensation, vice versa.

Table 5. Pearson correlation matrix for the model variables

	CEOpay	AR	ROA	ROE	SocGov	Env	Revenue
CEOpay	1						
AR	-0.01	1					
ROA	**0.18**	0.05	1				
ROE	**0.16**	**0.11**	**0.91**	1			
SocGov	**0.14**	0.02	**0.13**	**0.16**	1		
Env	**0.11**	0.02	0.07	0.09	**0.76**	1	
Revenue	**0.13**	-0.08	-0.01	0.02	**0.46**	**0.39**	1

CEOpay = total CEO compensation, AR = annual return, SocGov = numeric social and governance rating, and Env = numeric environmental rating. Correlations with significance level below 0.05 appear in bold.

Table 5. shows that all corporate social performance measures, except annual return, are positively and significantly correlated with total CEO compensation. As such, the Pearson correlations indicate that high levels of corporate social performance are associated with high levels of CEO compensation. In addition, a linear positive relationship seems to exist between CEO compensation and revenues, indicating that CEOs of larger firms get higher compensation. However, hypotheses 1, 2, 3 and 4 of the thesis are not supported by the Pearson correlation matrix since accounting-based performance measures are correlated with the total CEO compensation the most, no significant correlation between total CEO compensation and stock-based performance measure exists whereas there exists a significant correlation between total CEO compensation and environmental ratings.

When it comes to correlations between the financial performance measures, there exists an almost perfect positive relationship between the two accounting-based performance measures, ROA and ROE. The relationship is logical since both of the ratios include net income in the numerator. In addition, annual return and ROE seem to be positively related. Out of the ESG ratings, high social and governance ratings are associated with high levels of accounting performance, whereas the correlations between environmental ratings and accounting performance measures are not significant. Further, social and governance and environmental ratings are highly, positively correlated with each other, indicating that firms that pay attention to social and governance issues also pay attention to environmental issues, vice versa. Finally, firm size seems not to be related to corporate

financial performance, whereas it is positively related to ESG performance. As such, larger firms seem to pay more attention to ESG issues than smaller firms.

6.3   Methodology

This section explains the research methodology used to study the relationship between total CEO compensation and corporate social performance measures in the Nordic countries. In general, linear regression models allow for studying the linear relationships between two variables. As explained in the sample data section, the data used in this thesis is panel data, combining cross-section data of 99 firms over the times-series of five years. Panel data is chosen because it can help solve omitted variable bias in linear regressions (Wooldridge, 2002, p. 247). Omitted variable bias occurs when a variable, which is a determinant of the dependent variable and correlated with an independent variable, is omitted from a regression. If such a variable can be identified, it can be included in the regression as a control variable. However, it may be hard to identify and measure all those variables. When it comes to the dependent variable of this thesis, many possible variables could determine total CEO compensation. In addition to the independent and control variables explained in the model variables section, for example, professional experience can determine the level of a CEO's compensation. A firm with an experienced CEO can also achieve better corporate social performance. The omitted variable, professional experience of the CEO, could be both a determinant of the dependent variable and correlated with an independent variable. In this case, the estimator would be biased. Across panel data models, unobserved effects models provide a solution for the omitted variable problem. Unobserved effects models are introduced next.

The general form of an unobserved effects panel data model is:

$$y_{it} = \beta x_{it} + v_{it}, \qquad (1)$$
$$v_{it} = \mu_i + u_{it},$$

where y is the dependent variable and x is a 1 x K vector of independent variables, for which coefficients β are to be estimated. Further, v_{it} is the error term that consists of μ_i that is a time-invariant unobserved effect and u_{it} that is a time-varying error component. Panel data on a cross-section of N individuals, $i = 1, 2, \ldots, N$, over T years, $t = 1, 2, \ldots, T$, is used. (Wooldridge, 2002, p. 251.)

The selection of a relevant model depends on the assumptions that are made about the time-invariant unobserved effects. In this study, time-invariant unobserved effects could include, for example, the culture of a firm or the managerial ability of a CEO. In a random effects model, an assumption is made that the unobserved effects are not correlated with any of the independent variables. In the random effects model, the unobserved effects are embedded in the error term, and the model includes an intercept. (Wooldridge, 2002, p. 257.) With the dependent and independent variables introduced in the model variables section, the general model is transferred to the random effects specification as follows:

$$\ln(CEOpay)_{it} = \beta_0 + \beta_1 AR_{it} + \beta_2 AP_{it} + \beta_3 SocGov_{it} + \beta_4 Env_{it}$$
$$+\beta_5 \ln(Revenue)_{it} + \beta_6 IndustryDummies + v_{it,} \qquad (2)$$

where AR = annual return, AP = accounting performance (ROA or ROE), SocGov = numeric social and governance rating, Env = numeric environmental rating, and IndustryDummies = the industry dummy variables introduced in section 6.2.3.

Whenever the unobserved effects are correlated with an independent variable, a fixed effects model is a more robust model. For example, the managerial ability could also be related to corporate social performance and introduce correlation between the unobserved effects and any of the independent variables. The fixed effects model allows for the unobserved effects to be correlated with an independent variable by de-meaning the variables. The fixed effects model treats the unobserved effects as parameters to be estimated. Aa such, the fixed effects model does not allow for independent variables that are constant across time. The reason for this is that the model cannot separate the time-invariant unobserved effects from the effects of the time-invariant independent factors. (Wooldridge, 2002, pp. 265–267.) For example, if a firm does not change its stakeholder management practices across time, it may be assigned the same ESG rating year after year. However, it can well be assumed that in a sample of 99 firms, the ESG ratings are varying over time for some firms. However, industry dummies cannot be included as they are time-invariant.

With the dependent and independent variables introduced in the model variables section, the general model is transferred to the fixed effects specification as follows:

$$\ln(CEOpay)_{it} = \beta_1 AR_{it} + \beta_2 AP_{it} + \beta_3 SocGov_{it} + \beta_4 Env_{it}$$
$$+\beta_5 \ln(Revenue)_{it} + \mu_i + u_{it} \qquad (3)$$

As mentioned earlier, another commonly used panel data model in the pay-performance literature is the first-difference model. The first-difference specification has been used to test whether a change in the financial performance of a firm has affects CEO compensation. The first-difference model eliminates the unobserved effects by taking first-differences of the variables. Because of the first differencing, the first-difference model is also not suitable for data that involves independent variables that do not change over time. When the values of the independent variables do not change much over time, the random effects model is the most suitable. The first-difference model is the most suitable in cases when there is serial correlation in the error term, or when the error term follows a random walk. (Wooldridge, 2002, pp. 279–281, 286.) When it comes to this thesis, firms that do not link CEO compensation to corporate social performance in one year may not do so in the next year either. As a result, the error terms of the regressions persist over time and could be serially correlated.

Following Wooldridge (2002), the first-difference model specification with the model variables is as follows:

$$\Delta\ln(CEOpay)_{it} = \beta_1 \Delta AR_{it} + \beta_2 \Delta AP_{it} + \beta_3 \Delta SocGov_{it}$$
$$+\beta_4 \Delta Env_{it} + \beta_5 \Delta\ln(Revenue)_{it} + \Delta u_{it,} \qquad (4)$$

where Δ stands for the logarithmic or absolute first-difference of the variables.

However, the first-difference model specification assumes that the relationship between total CEO compensation and CSP is only contemporaneous. In this case, a change in a CSP measure would only have an effect on total CEO compensation in the contemporaneous year. (Viittaniemi, 1997.) This assumption may not be valid as long-term incentive plans in the Nordic countries commonly have a performance period of three years. As an example, a stock option plan that has a vesting period of three years and an exercise price set at a 20 percent premium to the market price at grant can be considered. If the market price of the stock increases by 30 percent during the first year and 0 percent during the next two years, the increase in the first year still affects the value of the options after two years, when the options are exercisable.

The selection of the relevant model also depends on the assumption that is made about the exogeneity of the independent variables. An independent variable is exogenous when it is not dependent on the dependent variable. Simultaneous causality bias occurs when the independent variable is endogenous and when, not only x causes y, y also causes x. In this case, the error term is correlated with the independent variable, and the coefficients of the regression are biased. The models presented above rely highly on the strict exogeneity assumption, according to which the error term is not correlated with any of the independent variables. (Wooldridge, 2002, pp. 252–254.) Callan and Thomas (2014) find that CEO compensation, financial performance, and ESG performance are endogenous and determined simultaneously. The results thus indicate that corporate social performance affects CEO compensation, but CEO compensation also affects corporate social performance. As such, previous models may be inconsistent, and further specifications may be needed.

A solution for the endogeneity problem is to introduce lags of the independent variables in the model (Wooldridge, 2002, p. 255). In this study, introducing lags of the independent variables to the model is also meaningful logically, because the grants of long-term incentive plans depend on the level of corporate performance metrics over three years. As an example, using once lagged independent variables in the random effects, fixed effects and first-difference models yields the following model specifications, respectively:

$$\ln(CEOpay)_{it} = \beta_0 + \beta_1 AR_{i,t-1} + \beta_2 AP_{i,t-1} + \beta_3 SocGov_{i,t-1}$$
$$+\beta_4 Env_{i,t-1} + \beta_5 \ln(Revenue)_{i,t-1} + \beta_6 IndustryDummies + u_{it} \qquad (5)$$

$$\ln(CEOpay)_{it} = \beta_1 AR_{i,t-1} + \beta_2 AP_{i,t-1} + \beta_3 SocGov_{i,t-1}$$
$$+\beta_4 Env_{i,t-1} + \beta_5 \ln(Revenue)_{i,t-1} + \mu_i + u_{it} \qquad (6)$$

$$\Delta\ln(CEOpay)_{it} = \beta_1 \Delta AR_{i,t-1} + \beta_2 \Delta AP_{i,t-1} + \beta_3 \Delta SocGov_{i,t-1}$$
$$+\beta_4 \Delta Env_{i,t-1} + \beta_5 \Delta\ln(Revenue)_{i,t-1} + \Delta u_{it} \qquad (7)$$

For equations 5-6, total CEO compensation data needs to be collected for 2013-2017, whereas corporate social performance and firm size data need to be collected for 2012-2016. Equations 5-6 lead to a smaller number of observations than the previous models

due to social and governance and environmental ratings being only available for a limited number of firms in 2012.

To find a model that best fits the sample data, several methods can be used. First of all, the sum of squared residuals (SSR) of a regression measures the variation in the dependent variable that is not explained by the model. The model with the lowest SSR thus fits the sample data the best. Further, the R-squared of a regression measures the fraction of variance in the dependent variable that is explained by the independent variables. Thus, the regression with the highest R-squared explains the variation in the dependent variable the best. In addition, F statistic, for the null hypothesis that the regression coefficients are all zero against the alternative hypothesis that at least one of the coefficients is not zero, can be computed. Thus, the independent variables of the models that reject the null hypothesis significantly explain the dependent variable. (Wooldridge, 2002, p. 55, 92, 513.)

The statistics explained above, however, do not detect inconsistency of the models due to correlation between the unobserved effects and the independent variables or due to serial correlation. To test whether the fixed effects model, which controls for the correlation between the unobserved effects and the independent variables, is preferred over the random effects model, a Hausman test can be used. The Hausman statistic tests the null hypothesis that the random effects model is the preferred model against the alternative hypothesis that the fixed effects model is more consistent. (Wooldridge, 2002, pp. 288-289.)

7   RESULTS

This chapter aims to answer the question of whether CEO compensation in the Nordic countries is linked to corporate social performance. The link is examined by running six separate regressions: one regression with each of the panel data models presented in the last chapter (random effects, fixed effects, and first-difference model) using contemporaneous explanatory variables and one regression with each of the panel data models using lagged explanatory variables. Due to the nature of the sample data, it is necessary to run all six regressions and test them statistically. The random effects model could be preferred due to the ESG ratings being rather time-invariant. However, the random effects model does not control for unobserved effects, such as firm culture or managerial ability, which could bias the results. Fixed effects and first-difference models, in turn, control for the unobserved effects. Further, the first-difference model could be preferred in the case of serial correlation in the error term. To see which model is the most consistent, the models and their results are compared with the metrics and tests presented in the last chapter. Finally, the results of the most consistent model are discussed in depth, along with the limitations of the study. All regressions, metrics, and tests are run in R software.

7.1   Results of the regressions using contemporaneous explanatory variables

Table 6. reports the regression results obtained with the random effects, fixed effects, and first-difference models, using contemporaneous explanatory variables. The models yield similar results, but with some exceptions. Surprisingly, all the models find a negative relationship between total CEO compensation and contemporaneous annual return. However, the relationship is not significant, regardless of the model specification. Moreover, the models do not find a significant relationship between total CEO compensation and contemporaneous ROA. The results are in contrast with Mäkinen (2007) and Oreland (2007), who find a positive and significant relationship between CEO compensation and contemporaneous stock return in Finland and Sweden, but in line with Firth et al. (1996), who do not find such a significant relationship in Norway. However, Firth et al., Mäkinen and Oreland do not find a significant relationship between CEO compensation and contemporaneous ROA, which is in line with the results obtained.

Table 6. Results of the regressions using contemporaneous explanatory variables

Explanatory variable	Random effects model (equation 2)		Fixed effects model (equation 3)		First-difference model (equation 4)	
Intercept	**10.017***	**10.290***			-0.023	-0.025
	(0.0000)	(0.0000)			(0.416)	(0.376)
Annual	-0.0001	-0.0001	-0.0001	-0.0002	-0.0002	-0.0002
Return	(0.861)	(0.893)	(0.801)	(0.781)	(0.756)	(0.672)
ROA		0.002		0.001		0.0005
		(0.362)		(0.647)		(0.872)
ROE	**0.002***		0.002		0.001	
	(0.075)		(0.155)		(0.213)	
SocGov	0.146	0.138	0.105	0.098	0.279	**0.343***
	(0.242)	(0.264)	(0.459)	(0.491)	(0.124)	(0.056)
Env	0.064	0.062	-0.148	-0.186	-0.047	-0.098
	(0.588)	(0.599)	(0.358)	(0.250)	(0.818)	(0.638)
Firm size	**0.173***	**0.169***	**0.238***	**0.206***	0.094	0.085
	(0.0000)	(0.0000)	(0.003)	(0.009)	(0.313)	(0.370)
N	453	461	453	461	355	362
SSR	66.732	69.489	51.591	53.968	90.470	94.885
R-squared	0.531	0.467	0.033	0.023	0.016	0.014
F statistic	495.711	392.484	2.388	1.668	1.172	1.022
	(0.0000)	(0.0000)	(0.038)	(0.141)	(0.323)	(0.405)

SocGov = numeric social and governance rating, Env = numeric environmental rating, N = number of observations, p-values in parentheses. * = 0.10 level of significance, ** = 0.05 level of significance, and *** = 0.01 level of significance. Coefficients with significance level below 0.10 appear in bold.

The random effects model finds a positive and significant relationship between total CEO compensation and contemporaneous ROE. According to the results, a one percent increase in ROE is associated with a 0.002 percent increase in total CEO compensation. A 0.002 percent increase in mean total CEO compensation during 2013-2017 equals approximately $52. As shown by the descriptive statistics, variation in ROE is high, and ROE could thus explain differences in CEO compensation across firms. However, the ROE of an individual firm does not commonly change significantly across time. When it comes to previous literature, Randoy and Nielsen (2002) do not find a significant relationship between CEO compensation and contemporaneous ROE in Sweden and Norway, whereas Tosi et al. (2000) find that ROE is, out of all financial performance measures, the most significant determinant of CEO compensation.

When it comes to social and governance performance, the models predict a positive relationship between total CEO compensation and social and governance ratings, which is significant only in the case of the first-difference model. The first-difference model predicts a 0.343 percent increase in total CEO compensation when the social and governance rating increases by one unit. A 0.343 percent increase in mean total CEO compensation in 2013-2017 equals approximately $8,930. However, changes in social and governance ratings are commonly marginal. When it comes to environmental performance, the random effects model predicts a positive, and fixed effects and first-difference models predict a negative, relationship between total CEO compensation and environmental ratings. However, none of the coefficients are significant.

As predicted by previous literature, firm size seems to be the most significant determinant of total CEO compensation, except in the case of first-differences. The models predict about a 0.2 percent increase in total CEO compensation, which equals about $5,200 increase in mean total CEO compensation in 2013-2017, when revenues increase by one percent, across firms and time. The result is large in economic terms since revenues vary greatly across firms and time, as presented in section 6.2.4.

F statistics on the regression coefficients of each model indicate that the coefficients of the random effects and fixed effects models are significantly different to zero whereas the coefficients of the first-difference model specifications are not different to zero. In addition, according to the R-squared metrics, the explanatory variables of the first-difference specifications only explain about one percent of the variance in total CEO compensation. Further, SSR metrics are the highest for the first-difference model. All of the metrics thus indicate that the first-difference model does not fit the sample data well. When the random effects and fixed effects models are compared, fixed effects specifications yield lower SSR metrics but also lower R-squared metrics. R-squared metrics of the random effects specifications indicate that the explanatory variables of the random effects specifications explain about 50 percent of the variance in total CEO compensation. In addition, the Hausman test on the random and fixed effects models does not reject the null hypothesis that the random effects model is the preferred model.

The results may be explained by the fact that the ESG ratings are rather time-invariant and the fixed effects and first-difference models may thus fail at separating the effects of the ESG ratings from the unobserved effects. In addition, industry dummies are included

in the random effects model, whereas they cannot be included in the fixed effects or the first-difference models, which may explain the results. As mentioned earlier, the industry of a firm plays a significant role in the design of executive compensation plans. For example, the base salary of a CEO is often set at an average base salary of all CEOs in the relevant industry. The base salary further provides a basis for the other components of the compensation plans. As such, the industry dummies could effectively control for the unobserved effects, such as the culture in a firm.

7.2   Results of the regressions using lagged explanatory variables

Table 7. reports the regression results obtained with the random effects, fixed effects, and first-difference models, using once lagged explanatory variables. Again, the models yield very similar results, when it comes to the effect of annual return. Now, when once lagged annual returns are used, the relationship between total CEO compensation and the annual return is positive and highly significant. As such, the result is in line with previous studies, such as Viittaniemi (1997) and Mäkinen (2007). According to the results, a one percent increase in annual return is associated with a 0.002 percent increase in total CEO compensation. A 0.002 percent increase in mean total CEO compensation during 2013-2017 equals approximately $52. At first glance, the result seems small in economic terms. However, it should be noted that the variation in annual returns across firms and time is high, the standard deviation of annual returns being about 50 percent during 2013-2017.

When it comes to accounting-based performance measures, the random effects and fixed effects models find a positive and significant relationship between total CEO compensation and once lagged ROA. The models predict about 0.010 percent increase in total CEO compensation, which equals about $260 increase in mean total CEO compensation in 2013-2017, when ROA increases by one percent, across firms and time. The relationship is higher than in the case of total CEO compensation and contemporaneous ROE. However, there does not exist a significant relationship between total CEO compensation and once lagged ROE.

In the case of ESG performance, the signs of the coefficients on the once lagged ESG ratings vary between the model specifications. However, any of the coefficients are not significant. As such, it seems like CEO compensation in the Nordic countries is not linked to contemporaneous or past ESG performance.

Table 7. Results of the regressions using once lagged explanatory variables

Explanatory variable	Random effects model (equation 5)		Fixed effects model (equation 6)		First-difference model (equation 7)	
Intercept	**8.880***	**8.861***			-0.015	-0.021
	(0.0000)	(0.0000)			(0.576)	(0.458)
AR_1	**0.002***	**0.002***	**0.002***	**0.002***	**0.002***	**0.002***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0001)
ROA_1		**0.011***		**0.009***		0.0002
		(0.004)		(0.054)		(0.965)
ROE_1	0.002		0.002		-0.002	
	(0.130)		(0.286)		(0.372)	
SocGov_1	0.020	0.007	0.027	0.036	-0.135	-0.139
	(0.884)	(0.956)	(0.861)	(0.816)	(0.467)	(0.464)
Env_1	0.118	0.138	-0.056	-0.058	0.047	0.074
	(0.348)	(0.265)	(0.751)	(0.751)	(0.829)	(0.738)
Firm size_1	**0.240***	**0.238***	**0.235**	**0.233***	**0.175***	**0.207**
	(0.0000)	(0.0000)	(0.005)	(0.007)	(0.082)	(0.049)
N	403	409	403	409	306	311
SSR	49.401	51.481	36.911	39.322	66.495	70.563
R-squared	0.640	0.613	0.097	0.099	0.061	0.059
F statistic	691.945	625.645	6.446	6.750	3.918	3.813
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.002)	(0.002)

_1 = lag by one year, SocGov = numeric social and governance rating, Env = numeric environmental rating, N = number of observations, p-values in parentheses. * = 0.10 level of significance, ** = 0.05 level of significance, and *** = 0.01 level of significance. Coefficients with significance level below 0.10 appear in bold.

In addition to contemporaneous firm size, also past firm size seems to be a highly significant determinant of total CEO compensation. The effect of past firm size on total CEO compensation is of similar size than in the case of contemporaneous firm size, as the models predict about a 0.2 percent increase in total CEO compensation when revenues increase by one percent.

When it comes to the consistency of the models, random effects specifications seem to best fit the sample data, as in the case of contemporaneous explanatory variables. In the case of the random effects specifications, R-squared metrics predict that the once lagged explanatory variables explain about 61-64 percent of the variance in total CEO compensation. Again, R-squared metrics are low for the fixed effects and first-difference

models. In addition, the Hausman test does not reject the null hypothesis that the random effects model is the preferred model in comparison to the fixed effects model.

Regressions using twice lagged independent variables were also run, and the results for the random effects model are in appendix 2. The results show that there exists a positive and significant relationship between total CEO compensation and ROA as well as total CEO compensation and ROE. As such, the effect of accounting-based financial performance on total CEO compensation persists over two years.

7.3   Implications and limitations

Hypothesis 1 of this thesis predicted that there exists a positive relationship between Nordic CEO compensation and firm size. Further, this relationship was predicted to be stronger than the relationship between CEO compensation and CSP. Consistent with the hypothesis, the results show that, out of the independent variables, firm size seems to be the most significant determinant of total Nordic CEO compensation. Nordic CEOs are thus compensated mostly based on the complexity of the firm, as large firms can be considered to be more complex to manage. As argued by Randoy and Nielsen (2002), it is more natural for social democratic cultures to explain inequalities in compensation by differences in the complexity of tasks rather than by differences in the performance of an individual or firm.

In addition, it seems like the industry of a firm plays a huge role in the design and level of executive compensation. The random effects model, which includes industry dummy variables, explains about 50-60 percent of the variation in total CEO compensation, whereas the R-squared metrics for the fixed effects and first-difference models are very low. Again, the relationship between industry classification and CEO compensation could be explained by the complexity assumption. The tasks of CEOs in some industries are more complex than in others. In conclusion, CEO compensation is mostly set at the average compensation of firms of the same size and in the same industry.

After the firm size and industry, financial performance seems to explain differences in CEO compensation across firms and time, to some degree. The results for the most consistent panel data model, the random effects model, show that the total CEO compensation in the Nordic countries is significantly linked to corporate financial

performance. Specifically, there exists a positive and significant relationship between total CEO compensation and once lagged annual return, total CEO compensation and lagged ROA, and total CEO compensation and ROE. The coefficient on the once lagged annual return is the most significant, as the significance level is 1 percent. Once lagged ROA and contemporaneous ROE are significant with 1 percent and 10 percent significance levels, respectively. As such, the results are mostly in line with previous literature on pay-financial performance link in the Nordic countries, and with the hypotheses 2 and 3 of this thesis. Hypothesis 2 predicted a positive relationship to exist between Nordic CEO compensation and stock-based financial performance. Further, hypothesis 3 predicted a positive, but weaker, relationship to exist between Nordic CEO compensation and accounting-based financial performance.

However, the results show that the total CEO compensation in the Nordic countries is not significantly linked to ESG performance, regardless of whether lags are used in ESG ratings or not. The results are thus is in line with hypothesis 4 but not in line with hypothesis 5. Hypothesis 4 of this thesis predicted that there does not exist a significant relationship between Nordic CEO compensation and environmental performance whereas hypothesis 5 predicted that there exists a positive and significant relationship between Nordic CEO compensation and social and governance performance. Further, the results are in line with Stanwick and Stanwick (2001), who do not find a significant link between CEO compensation and environmental performance in the US, but not in line with Callan and Thomas (2014), who find a significant link between CEO compensation and overall ESG performance in the US.

There exist several reasons which could explain the absent link between CEO compensation and ESG performance in the Nordic countries. The most straightforward explanation would be that CEO compensation simply is not explicitly linked to ESG performance in any way. It may be that Nordic corporate governance, or at least outcome-based contracts, still follow the more traditional, shareholder-based agency theory. The main goal of an outcome-based contract should thus be to motivate CEOs to act in the interest of shareholders and to increase stock-based and accounting-based performance measures. Stakeholder interests should only be taken into account if they are in the interest of shareholders as well. This assumption is supported by the fact that the ESG performance of Nordic firms is only medium on average, as shown by the descriptive statistics of the ISS-oekom Corporate Ratings.

However, the fact that the Nordic legislation requires strong protection of stakeholder rights (Randoy and Nielsen, 2002) does not support the view that Nordic corporate governance would not follow the stakeholder-based agency theory at all. For example, some Nordic laws even require large firms to select employee representatives to their board of directors (Lekvall, 2014). Perhaps, the link between CEO compensation and stakeholder interests is not needed, as the stakeholders can efficiently monitor CEOs through laws and regulations, auditors, representatives in the board of directors or special interest groups. It may also be that corporate financial performance efficiently measures the interests of all stakeholders, and any additional ESG performance measures are thus not needed.

Another argument explaining the absent link between CEO compensation and ESG performance could be that, even if the executive compensation plans were attached to ESG ratings or other similar measures of stakeholder issues management, these ESG performance metrics may be uncontrollable by CEOs. The simple agency model by Murphy (1999) predicts that the pay-performance link is lower, the harder the performance metrics are to control by managers. A firm has several stakeholders, with several conflicting interests, which may be extremely hard for an individual CEO to manage. As such, even if CEOs were economically motivated to act in the interest of stakeholders, they may not be able to directly affect ESG performance metrics.

However, Cordeiro and Sarkis (2008) show that firms that report an explicit link between their CEO compensation and environmental metrics, do statistically have a significantly positive link between environmental performance and CEO compensation, whereas other firms do not. As such, Cordeiro and Sarkis argue that ESG performance metrics need to be explicitly included in executive compensation plans for the pay-ESG performance link to exist and that linking CEO compensation to ESG performance metrics can efficiently motivate CEOs to act in the interest of stakeholders. As a managerial implication, firms in the Nordic countries, which wish to increase their ESG performance, should consider linking their executive compensation plans to ESG performance metrics. Further, for the best effect, these metrics should be linked to long-term compensation, since Callan and Thomas (2014) show that ESG performance has the largest effect on long-term compensation.

This study is, however, limited by several facts. First of all, this study only uses one measure of ESG performance, ISS-oekom Corporate Ratings. The results could be different if ESG ratings of other firms were used or if other measures of stakeholder issues management were used. In addition, ISS-oekom Corporate Ratings measure social and governance issues in one rating. It would be interesting to have these issues divided into two ratings and study whether the link between CEO compensation and social ratings and CEO compensation and governance ratings is different.

This study also merges all components of CEO compensation into one measure, total CEO compensation. Past studies show that the effect of the CSP measures is different on different components of CEO compensation. For example, Callan and Thomas (2014) show that ESG performance has the largest effect on long-term compensation. The reason is that not all the components of compensation are explicitly linked to corporate performance. For example, base salaries, which are not explicitly linked to performance measures, commonly form a big part of executive compensation plans. Total compensation figures also include components like severance pay, which can be relatively large in a specific year and bias the results. As such, it would be more meaningful to divide the total compensation figures into several categories, such as fixed compensation, annual bonuses, and long-term compensation, and study them separately. However, the availability of the data restricted this study from doing so.

Finally, even if Nordic countries do share several similar characteristics when it comes to corporate governance mechanisms, the relationship between CEO compensation and CSP may not be the same in every country. For example, the link may be different in Norway, in which oil and fishing industries dominate other industries. As argued before, the industry plays a huge role in the design of executive compensation plans. This argument is supported by Firth et al. (1996), who do not find a significant relationship between any measures of financial performance and CEO compensation in Norway, whereas other studies in other Nordic countries do find significant links with the same performance measures. As such, it could be more meaningful to study the relationship between CEO compensation and CSP in each country separately. Again, the availability of the data did not allow for doing so without risking the validity of the study.

8 CONCLUSIONS

The purpose of this thesis is to contribute to the growing literature on stakeholder theory and its implications. Particularly, this thesis deals with the management problem introduced by the stakeholder theory, according to which firms need to consider the interests of all its stakeholders and not only focus on the interests of its shareholders. A problem arises as firms need to balance several stakeholder interests, which may be conflicting, but which all have intrinsic value and potential to increase corporate performance. A firm can balance stakeholder interests by applying a stakeholder management approach. In practice, this is achieved through a sustainable development perspective where economic, environmental, and social dimensions are integrated into organizational systems by participating all stakeholders in corporate governance mechanisms. As such, ESG factors should also be integrated into CEO compensation plans, one of the corporate governance mechanisms, to motivate CEOs to act in the interest of all stakeholders. This thesis also contributes to the literature on the ethical issues surrounding CEO compensation plans by arguing that CEO compensation that is linked to ESG performance is ethical as it rewards CEOs for making socially responsible decisions.

The research problem of this thesis is to study whether Nordic firms have been successful at integrating ESG factors into their CEO compensation plans and whether CEOs are efficiently, economically motivated to participate in sustainable development and socially responsible business. Specifically, the following research questions are answered: What are the main determinants of CEO compensation in the Nordic countries? Are CEOs in the Nordic countries compensated based on the financial performance of their companies? Are CEOs in the Nordic countries compensated based on the ESG performance of their companies?

Out of the independent variables used, firm size and industry explain the level of Nordic CEO compensation the most. Firms in the Nordic countries set the level of CEO compensation to be close to an average CEO compensation among firms of the same size and operating in the same industry. In addition, the level of total CEO compensation depends on corporate financial performance as high levels of financial performance are associated with high levels of total CEO compensation, regardless of whether financial performance is measured by accounting-based or stock-based performance measures.

However, CEO compensation is more significantly related to stock-based performance than accounting-based performance. Moreover, CEOs in the Nordic countries are compensated based on both contemporaneous and past financial performance.

However, CEOs in the Nordic countries seem not to be compensated based on the ESG performance of their companies as there does not exist a significant link between total CEO compensation and social and governance performance or total CEO compensation and environmental performance, as measured by ISS-oekom Corporate Ratings. As such, Nordic CEOs seem not to be economically motivated to increase social equity, environmental sustainability or participative governance of their companies. However, the results cannot be generalized so that CEOs in Nordic firms would not be motivated to participate in sustainable development or act in the interest of stakeholders at all. It may be that, in Nordic firms, the ESG dimensions are already efficiently integrated into other corporate governance mechanisms and that the optimal contracting between stakeholders and CEOs is achieved through monitoring.

In this thesis, the link between CEO compensation and social performance is only studied among Nordic main index companies. As such, the results can only be generalized in a setting of large Nordic companies. The link is likely different among smaller companies and in other countries, as previous literature shows. Further research in these settings is thus needed. Further research could use other measures of financial and ESG performance to see if the results depend on the performance measures chosen. Moreover, it would be interesting to study the differences in the pay-performance link between different components of CEO compensation, such as fixed compensation, annual bonuses and long-term incentives, and between the Nordic countries.

The results of this study provide information for firms and managers who wish to improve their sustainable development practices and participate stakeholders in corporate governance mechanisms. This thesis also provides information for stakeholders, such as retail and institutional investors, who want to participate in the decision-making processes of firms and demand firms to increase their corporate social performance. Particularly, this thesis provides information on how corporate social performance is measured in theory and practice and how a firm can increase its corporate social performance by integrating financial and ESG performance metrics in its executive compensation plans. Previous literature shows that firms that include performance

metrics in their executive plans generally have better corporate social performance. As such, Nordic firms should consider including ESG metrics in their compensation plans to motivate CEOs to increase their financial and ESG performance further. Additionally, CEO compensation that rewards for achieving environmental, social, and governance-related goals could be considered ethical by stakeholders and the general public.

REFERENCES

Bendheim, C. L., Waddock, S. A. & Graves, S. B. (1998). Determining best practice in corporate-stakeholder relations using data envelopment analysis: An industry-level study. *Business & Society, 37*(3), 306-338. doi:10.1177/000765039803700304

Calder, A. (2008). *Corporate governance: A practical guide to the legal frameworks and international codes of practice*. London: Kogan Page Ltd.

Callan, S. J. & Thomas, J. M. (2014). Relating CEO compensation to social performance and financial performance: Does the measure of compensation matter? *Corporate Social Responsibility and Environmental Management, 21*(4), 202-227. doi:10.1002/csr.1307

Carroll, A. B. (1979). A three-dimensional conceptual model of corporate performance. *The Academy of Management Review, 4*(4), 497-505. doi:10.2307/257850

Chartered Institute of Internal Auditors. (2019). *Governance of risk: Three lines of defence*. Retrieved from https://www.iia.org.uk/resources/audit-committees/governance-of-risk-three-lines-of-defence/?downloadPdf=true

Clarkson, M. (1995a). *A risk based model of stakeholder theory*. Centre for Corporate Social Performance and Ethics, University of Toronto.

Clarkson, M. (1995b). A stakeholder framework for analyzing and evaluating corporate social performance. *Academy of Management Review, 20*(1), 92-117. doi:10.5465/amr.1995.9503271994

Conyon, M. J. & Leech, D. (1994). Top pay, company performance and corporate governance. *Oxford Bulletin of Economics and Statistics, 56*(3), 229-247. doi:10.1111/j.1468-0084.1994.mp56003001.x

Conyon, M. J. & Schwalbach, J. (2000). Executive compensation: Evidence from the UK and Germany. *Long Range Planning, 33*(4), 504-526. doi:10.1016/S0024-6301(00)00052-2

Cordeiro, J. J. & Sarkis, J. (2008). Does explicit contracting effectively link CEO compensation to environmental performance? *Business Strategy and the Environment, 17*(5), 304-317. doi:10.1002/bse.621

Davis, J. H., Schoorman, F. D. & Donaldson, L. (1997). Toward a stewardship theory of management. *The Academy of Management Review, 22*(1), 20-47. doi:10.2307/259223

Deckop, J. R., Merriman, K. & Gupta, S. (2006). The effects of CEO pay structure on corporate social performance. *Journal of Management, 32*(3), 329-342. doi:10.1177/0149206305280113

Directive 2007/36/EC.

Directive (EU) 2017/828.

DirectorInsight. (2017). *Mind the gap: CEO remuneration and the Scandinavian corporate governance landscape*. Retrieved from https://learn.diligent.com/rs/946-AVX-095/images/Scandinavian-Pay-for-Performance-1.pdf

Directors' Institute Finland. (2018, March 26). SHRD II: Osakkeenomistajien oikeudet - muutosdirektiivi - markkinaharmonisaatiota runsaalla liikkumavaralla. Retrieved from https://dif.fi/teema-artikkelit/2018/q1-2018-hallitus-ja-johto/shrd-ii-osakkeenomistajien-oikeudet-muutosdirektiivi-markkinaharmonisaatiota-runsaalla-liikkumavaralla/

Donaldson, T. & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *The Academy of Management Review, 20*(1), 65-91. doi:10.2307/258887

Duffhues, P. & Kabir, R. (2008). Is the pay–performance relationship always positive?: Evidence from the Netherlands. *Journal of Multinational Financial Management, 18*(1), 45-60. doi:10.1016/j.mulfin.2007.02.004

Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *The Academy of Management Review, 14*(1), 57-74. doi:10.2307/258191

Eriksson, T. & Lausten, M. (2000). Managerial pay and firm performance? Danish evidence. *Scandinavian Journal of Management, 16*(3), 269-286. doi:10.1016/S0956-5221(99)00026-3

Fama, E. F. (1980). Agency problems and the theory of the firm. *Journal of Political Economy, 88*(2), 288-307. doi:10.1086/260866

Fernandes, N. (2008). Board compensation and firm performance: The role of "independent" board members. *Journal of Multinational Financial Management, 18*(1), 30-44. doi:10.1016/j.mulfin.2007.02.003

Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Boston: Pitman.

Firth, M., Lohne, J. C., Ropstad, R. & Sjo, J. (1996). The remuneration of CEOs and corporate financial performance in Norway. *Managerial and Decision Economics, 17*(3), 291-301. doi:10.1002/(SICI)1099-1468(199605)17:33.0.CO;2-X

Frydman, C. & Jenter, D. (2010). CEO compensation. *Annual Review of Financial Economics, 2*(1), 75-102. doi:10.1146/annurev-financial-120209-133958

Gerritsen, R. & Bueno, B. (2019). *Evaluating pay for performance alignment: Implementing a P4P model for Europe*. Institutional Shareholder Services Inc. Retrieved from: https://www.issgovernance.com/file/policy/active/emea/European-Pay-for-Performance-Methodology-Overview.pdf

GRI. (n.d.). *About sustainability reporting*. Retrieved from https://www.globalreporting.org/information/sustainability-reporting/Pages/default.aspx

GRI. (n.d.). *GRI Standards download center*. Retrieved from https://www.globalreporting.org/standards/gri-standards-download-center/

Hall, B. J. & Liebman, J. B. (1998). Are CEOs really paid like bureaucrats? *The Quarterly Journal of Economics, 113*(3), 653-691. doi:10.1162/003355398555702

Harris, M. & Raviv, A. (1979). Optimal incentive contracts with imperfect information. *Journal of Economic Theory, 20*(2), 231-259. doi:10.1016/0022-0531(79)90073-5

Healy, P. M. (1985). The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics, 7*(1), 85-107. doi:10.1016/0165-4101(85)90029-1

Hill, C. W. L. & Jones, T. M. (1992). Stakeholder-agency theory. *Journal of Management Studies, 29*(2), 131-154. Retrieved from http://www.econis.eu/PPNSET?PPN=260057460

Huber, B. M. & Comstock, M. (2017, July 27). ESG reports and ratings: What they are, why they matter. *Harvard Law School Forum on Corporate Governance and Financial Regulation*. Retrieved from https://corpgov.law.harvard.edu/2017/07/27/esg-reports-and-ratings-what-they-are-why-they-matter/

ISO 26000:2010 Guidance on social responsibility.

ISS-oekom. (2018). *Methodology: ISS-oekom Corporate Rating*. Unpublished internal document.

Jansson, M. & Biel, A. (2011). Motives to engage in sustainable investment: A comparison between institutional and private investors. *Sustainable Development, 19*(2), 135-142. doi:10.1002/sd.512

Jensen, M. C. (2002). Value maximization, stakeholder theory, and the corporate objective function. *Business Ethics Quarterly, 12*(2), 235-256. doi:10.2307/3857812

Jensen, M. C. & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305-360. doi:10.1016/0304-405X(76)90026-X

Jensen, M. C. & Meckling, W. H. (1994). The nature of man. *Journal of Applied Corporate Finance, 7*(2), 4-19. doi:10.1111/j.1745-6622.1994.tb00401.x

Jensen, M. & Murphy, K. (1990). Performance pay and top-management incentives. *Journal of Political Economy, 98*(2), 225-64. Retrieved from https://econpapers.repec.org/article/ucpjpolec/v_3a98_3ay_3a1990_3ai_3a2_3ap_3a225-64.htm

Jones, T. (1995). *Instrumental Stakeholder Theory and Paradigm Consensus in Business and Society: Advances on the Methodological Front*. Proceedings of the Annual Meeting of the International Association for Business and Society. Vienna, Austria.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. & Vishny, R. W. (1998). Law and finance. *Journal of Political Economy, 106*(6), 1113-1155. doi:10.1086/250042

Lekvall, P. (Ed.). (2014). *The Nordic corporate governance model*. Stockholm: SNS.

Mahoney, L. S. & Thorn, L. (2006). An examination of the structure of executive compensation and corporate social responsibility: A Canadian investigation. *Journal of Business Ethics, 69*(2), 149–162. doi:10.1007/s10551-006-9073-x

McGuire, J., Dow, S. & Argheyd, K. (2003). CEO incentives and corporate social performance. *Journal of Business Ethics, 45*(4), 341-359. doi:10.1023/A:1024119604363

Miller, D. J. (1995). CEO salary increases may be rational after all: Referents and contracts in CEO pay. *Academy of Management Journal, 38*(5), 1361-1385. doi:10.5465/256861

Mishel, L. & Schieder, J. (2017, July 20). CEO pay remains high relative to the pay of typical workers and high-wage earners. *Economic Policy Institute*. Retrieved from https://www.epi.org/publication/ceo-pay-remains-high-relative-to-the-pay-of-typical-workers-and-high-wage-earners/

Murphy, K. J. (1999). Executive compensation. In D. Card, & O. Ashenfelter (Eds.), *Handbook of labor economics, vol 3* (pp. 2485-2563). Elsevier. Retrieved from http://www.sciencedirect.com/science/article/pii/S1573446399300249

Mäkinen, M. (2007). *CEO compensation, firm size and firm performance: Evidence from Finnish panel data* (ETLA Discussion Papers No. 1084). Retrieved from https://www.econstor.eu/bitstream/10419/63644/1/526669918.pdf

Nilsson, J. (2009). Segmenting socially responsible mutual fund investors: The influence of financial return and social responsibility. *International Journal of Bank Marketing, 27*(1), 5-31. doi:10.1108/02652320910928218

OECD. (2005). *Guidelines for Multinational Enterprises: 2005 Annual Meeting of the National Contact Points*. Retrieved from http://www.oecd.org/daf/inv/mne/35387363.pdf

OECD. (2011). *OECD Guidelines for Multinational Enterprises, 2011 Edition*. Retrieved from http://dx.doi.org/10.1787/9789264115415-en

Oreland, C. (2007). *CEO cash compensation and ownership structure: The effect of family control on the pay-performance relationship*. Uppsala University. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=CD085B1B763A9DC538C32EC80E8B43D8?doi=10.1.1.515.3434&rep=rep1&type=pdf

Randoy, T. & Nielsen, J. (2002). Company performance, corporate governance, and CEO compensation in Norway and Sweden. *Journal of Management & Governance, 6*(1), 57-81. doi: 10.1023/A:1015511912289

Ross, S. A. (1973). The economic theory of agency: The principal's problem. *The American Economic Review, 63*(2), 134-139. Retrieved from https://www.jstor.org/stable/1817064

SASB. (n.d.). *Why is financial materiality important?* Retrieved from https://www.sasb.org/standards-overview/materiality-map/

Shankman, N. A. (1999). Reframing the debate between agency and stakeholder theories of the firm. *Journal of Business Ethics, 19*(4), 319-334. doi:1005880031427

Stanwick, P. A. & Stanwick, S. D. (2001). CEO compensation: Does it pay to be green? *Business Strategy and the Environment, 10*(3), 176-182. doi:10.1002/bse.284

Starik, M. (1995). Should trees have managerial standing? Toward stakeholder status for non-human nature. *Journal of Business Ethics, 14*(3), 207-217. doi: 10.1007/BF00881435

Swedish Companies Act, (2005:551).

Tosi, H. L., Werner, S., Katz, J. P. & Gomez-Mejia, L. R. (2000). How much does performance matter? A meta-analysis of CEO pay studies. *Journal of Management, 26*(2), 301-339. doi:10.1016/S0149-2063(99)00047-1

UN Global Compact. (n.d.). *About the UN Global Compact*. Retrieved June 24, 2019, from https://www.unglobalcompact.org/about/faq

UN Global Compact. (n.d.). *United Nations Global Compact*. Retrieved June 24, 2019, from https://www.unglobalcompact.org

United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. Retrieved from https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf

Viittaniemi, J. (1997). *Top executive compensation and company performance in Finland* (Centre for Labour Market and Social Research Working Paper No. 97-10). Retrieved from http://pure.au.dk/portal/files/32301049/0001017.pdf

Wartick, S. L. & Cochran, P. L. (1985). The evolution of the corporate social performance model. *The Academy of Management Review, 10*(4), 758-769. doi:10.2307/258044

Wooldridge, J. M. (2002). *Econometric analysis of cross section and panel data*. Cambridge, MA & London, England: The MIT Press.

Yermack, D. (1997). Good timing: CEO stock option awards and company news announcements. *The Journal of Finance, 52*(2), 449-476. doi:10.2307/2329486

APPENDICES

Appendix 1. The companies included in the sample data

Finland		Sweden		Denmark		Norway	
Cargotec Oyj	Elisa Oyj	Telia Company AB	Alfa Laval AB	Ambu A/S	Carlsberg A/S	Yara International ASA	Telenor ASA
Fortum Oyj	Huhtamäki Oyj	Assa Abloy AB	Atlas Copco AB	Chr. Hansen Holding A/S	Coloplast A/S	TGS-NOPEC Geophysical Co ASA	Gjensidige Forsikring ASA
Konecranes Oyj	Kesko Oyj	Boliden AB	Electrolux AB	Danske Bank A/S	Demant A/S	Schibsted ASA	SalMar ASA
Kone Oyj	Metsä Board Oyj	Telefonaktiebolaget L M Ericsson	Getinge AB	DSV A/S	FLSmidth & Co. A/S	PGS ASA	Leroy Seafood Group ASA
Metso Oyj	Nordea Bank Oyj	Hexagon AB	Hennes & Mauritz AB	Genmab A/S	GN Store Nord A/S	Norwegian Air Shuttle ASA	Norsk Hydro ASA
Neste Oyj	Orion Oyj	Investor AB	Kinnevik AB	ISS A/S	Jyske Bank A/S	Mowi ASA	Orkla ASA
Outotec Oyj	Outokumpu Oyj	Sandvik AB	Svenska Cellulosa AB	H. Lundbeck A/S	Novo Nordisk A/S	Grieg Seafood ASA	Storebrand ASA
Sampo Oyj	Stora Enso Oyj	Skandinaviska Enskilda Banken AB	Securitas AB	Novozymes A/S	Pandora A/S	Equinor ASA	DNO ASA
Nokian Tyres Oyj	UPM-Kymmene Oyj	Svenska Handelsbanken AB	Skanska AB	SimCorp A/S	Tryg A/S	DNB ASA	Aker Solutions ASA
Valmet Oyj	Wartsila Oyj	SKF AB	SSAB AB	Bavarian Nordic A/S	NKT A/S	Aker BP ASA	Aker ASA
YIT Oyj	Tieto Oyj	Swedbank AB	Swedish Match AB	Topdanmark A/S	Sydbank A/S	REC Silicon ASA	Nordic Nanovector ASA

Kemira Oyj	Sanoma Oyj	Tele2 AB	Volvo AB			Nordic Semiconductor ASA	Dolphin Drilling ASA
Amer Sports Oyj	Nokia Oyj	Lundin Petroleum AB	Modern Times Group AB				
		Eniro AB					

Appendix 2. Random effects model regression results using twice lagged independent variables

Explanatory variable	Random effects model	
Intercept	**9.016*****	**8.842*****
	(0.0000)	(0.0000)
AR_2	0.0001	0.00004
	(0.877)	(0.958)
ROA_2		**0.013*****
		(0.001)
ROE_2	**0.005*****	
	(0.003)	
SocGov_2	0.065	0.046
	(0.668)	(0.762)
Env_2	0.188	0.202
	(0.164)	(0.132)
Firm size	**0.221*****	**0.228*****
	(0.0000)	(0.0000)
N	351	355
SSR	45.962	45.548
R-squared	0.808	0.804
F statistics	1,417.05	1,400.98
	(0.0000)	(0.0000)

SocGov = numeric social and governance rating, Env = numeric environmental rating, N = number of observations, p-values in parentheses. * = 0.10 level of significance, ** = 0.05 level of significance, and *** = 0.01 level of significance. Coefficients with significance level below 0.10 appear in bold.

EXECUTIVE SUMMARY

Across countries, firms are facing increasing demands to integrate sustainable development practices into their operations and to act in a socially responsible manner. The purpose of this thesis is to shed light on how firms can respond to those demands and efficiently integrate economic, environmental, and social development goals into their corporate governance mechanisms. In particular, this thesis deals with CEO compensation plans as a corporate governance mechanism and studies whether CEOs in the Nordic countries, Finland, Sweden, Norway, and Denmark, are compensated based on corporate social performance, meaning financial as well as social, environmental and governance (ESG) performance of their companies.

The link between CEO compensation and corporate social performance is studied by running panel data regressions with random effects, fixed effects, and first-difference models. Further, panel data with a cross-section of 99 Nordic main index firms from 2013 to 2017 is used. In the models, total CEO compensation is used as a dependent variable, whereas annual return, return on assets, return on equity, and ESG ratings are used as variables of interest. Total CEO compensation and ESG rating data are obtained from Institutional Shareholder Services Inc., whereas financial data are obtained from Morningstar.

According to the results of this thesis, Nordic CEOs are compensated based on the financial performance of their companies, as measured by annual stock returns, return on assets, and return on equity. However, the link between CEO compensation and financial performance is rather small in economic terms. Moreover, Nordic CEOs seem not to be compensated based on the ESG performance of their companies since there does not exist a significant link between CEO compensation and ESG performance. The results show that, rather than corporate social performance, Nordic CEOs are compensated based on the size of their companies as well as based on the industry in which their company operates.