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Impact of CEO remuneration on corporate performance

Comparisons between Nordic and U.S. corporations

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Abstract

Executive compensation measures for corporate Chief Executive Officers and the effectiveness of such measures have been historically modeled by multiple theories, in particular Agency Theory, Stewardship Theory and Resource Dependence Theory. Research of such measures are mostly restricted to USA only.

This study attempts to highlight differences in executive compensation measures and corporate cultures between two distinct economic areas while investigating whether certain compensation measures are favorable to the companies and their stakeholders.

Accounting information from 25 publicly traded Nordic Companies is used to determine Nordic context and additional 25 companies from NYSE index is used in USA context. Timeframe is from between 2011 and 2016 inclusive. Descriptive statistics, correlations and OLS regression analysis is performed for both datasets separately. Analysis results are interpreted and compared for similarities and differences. SPSS statistical software is used during analysis.

Positive relationships is observed between accounting performance as performance pay portion of compensation increases in both Nordic and US contexts, with Nordic effect being more pronounced. We also find total compensation size to have no effect in Nordics while in USA CEO pay has a substantial relationship with multiple accounting metrics. Market effects between Nordics and USA are virtually nonexistent.

Keywords
limited companies, finance, chief executive officers, pay systems, wage differentials, international comparison

Miscellaneous

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Tiivistelmä

Toimitusjohtajien palkkarakenteita ja niiden toimivuutta on historiallisesti tarkasteltu useamman teorian näkökulmasta, pääosin agenttiteorian palvelijateorian ja resurssiriippuvuusteorian kautta. Tutkimusalue on yleisesti rajoittunut vain Yhdysvaltojen alueelle.

Tämän tutkimuksen tavoite on korostaa toimitusjohtajien palkkarakenteiden ja erityispiirteitä kahden toisistaan eroavan talousalueen välillä selvittäen samalla onko suoritusperustaiset palkkiot hyödyllisiä yrityksille ja heidän omistajilleen.

25:n pohjoismaisen julkisen osakeyhtiön tilitietoja käytetään havainnollistamaan pohjoismaisia erityispiirteitä, ja 25 julkista osakeyhtiötä NYSE -indeksistä käytetään havainnollistamaan Yhdysvaltain erityisyyksiä. Aikajänne on, sisältyvästi, 2011 ja 2016. Tietueista luotiin kuvailevat tilastot, korrelaatiot sekä OLS-regressio suoritettiin kummallekin tietojoukolle erikseen. Tulokset tulkitaan erikseen, ja niiden yhteneväisyyksiä ja erilaisuuksia verrataan keskenää. SPSS tilastointiohjelmistoa käytettiin analyysissa.

Sekä Yhdysvaltain alueella ja pohjoismaiden alueella havaitaan positiivinen suhde suoritusperustaisen palkkionosan ja koko palkan suhteessa sekä yrityksen tulosmittareiden välillä. Pohjoismaissa suhde oli Yhdysvaltoja selkeämpi. Lisäksi toimitusjohtajan palkan suuruudella ja tulosmittareilla oli positiivinen suhde Yhdysvalloissa, mutta pohjoismaissa ei. Markkinasuorituskykymittarien ja palkkamittareiden välillä ei ollut yhteyttä

Asiasanat
osakeyhtiöt, rahoitus, toimitusjohtajat, palkkajärjestelmät, palkkaerot, kansainvälinen vertailu

Muut tiedot

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1 Introduction

In the 1980's United States of America, the level of executive compensation began rising rapidly, attracting the academic interest to the subject (Murphy, 1999, 1). Since then chief executive officer (CEO) pay has been an evergreen subject of scrutiny, for political, ethical and performance reasons. Majority of research concerns often a single economic area, in particular the USA. While comparative studies between multiple economic areas have been developed before, evidence from Nordics appears limited.

A common academic talking point seems to be that executive pay is at unreasonable levels (Conyon et al. 2005, 28), and that performance-based measures should be implemented to keep CEOs working for company interests. (ibid. 29). Additional intent of this paper is to see if evidence points to performance-based measures impacting performance, and if so, how does it differ between Nordics and USA.

This thesis approaches the questions through the lens of three prominent theories in the field of governance, which attempt to explain the complex motivations and behaviours of firms and their executives. These theories are Agency Theory, Stewardship Theory and Resource Dependence Theory. Fundamental philosophies inherent to each theory are summarized in their separate chapters in literature review. Then. the CEO compensation structure and their determinants are explained in light of these theories. CEO pay is broken down to its most common components, as evident in the literature and key accounting, market performance and governance metrics pertinent to this research are defined and explained.

This thesis analyses the components of CEO pay using corporate accounting data from Nordics and USA. The data consists of multiple accounting and market performance metrics retrieved from the companies' respective annual filings. Data is analytically studied by descriptive analysis, correlations and by OLS correlation. Differences in the compensation structures and their effects on company performances are compared between both economic areas. The data is gathered between 2011 and 2016, after major impacts of 2007 financial crisis, but before the effects of COVID-19 pandemic in 2020.

2 Theoretical Background

This section establishes a theoretical background for the research and introduces research hypotheses. To properly understand the subject matter, key concepts from the mechanics of firms and firm performance must be explained and laid out. A mechanical challenge in assembling the theoretical background is that especially official and legal bibliography in Nordic context is in each nation's native tongue while United States context is in English. Intertwined with the theoretical subject matter are notable academic findings relating to the role, nature and disposition of chief executive officers and their pay structures, along with foundational theories pertinent to the subject.

2.1 Corporate Governance

A corporation is a legal entity with a legal personality and is mandated to act according to the legal framework of the state it is based in (Calder, 2008, 6).

The history of joint-stock companies, according to Calder (ibid. ,7), can be traced to 1601 when Dutch East India Company was formed. Contrary to previous business models, that were formed for a duration of a single ship voyage and was liquidated once voyage was over, the East India Company had joint stock issued to small investors and port authorities along a particular route. This has led to the existence of modern publicly traded companies.

The management of firm operations, especially in public companies, is convoluted and multi-faceted, due to the involvement of dozens of people with individual goals, aims and motivations.

The system of various measures by which a firm is directed is collectively called "Corporate Governance", and the exact methods of firm's governance is dictated by national laws and the decisions of shareholders (1992, 15).

A Board of Directors is an authority of a firm that is formed of one or more individuals with a mandate from the company stakeholders to oversee firm's daily operations. In eg. Finland, under the Limited Liability Companies Act a firm must have a board, selected by a general meeting, that has the responsibility to manage and

make sure the firm's operations are adequate and its financials are in good order. Other rights and duties may be defined in the Articles of Association as long as they do not override the law (L 21.7.2006/617).

A board of directors have a fiduciary duty; their intent is to shield the owners of the company from managerial conflicts of interest. Because Board of Directors answer to shareholders and stakeholders, they are also responsible for monitoring and, in some cases, replacement of their executives (Abels & Martelli, 2011,3).

According to Orozco et al (2018, 183), Jensen & Meckling argue that smaller boards of directors can foster more control over the firm and improve financial performance.

However, from Resource Dependence Theory perspective larger board increases the opportunity for advice, deliberation and relation (ibid. 184). Despite prior research not finding a link between board size and financial performance (ibid. 184), Orozco et al. finds that larger boards of directors tend to show lower financial performance (ibid. 191).

In USA, the corporate law is predominantly defined in the laws of individual states instead of federal law. State laws give minimal definitions to the roles and definitions of the Board of Directors and managers, allowing individual boards wide freedoms regarding the financing, structure, and command of their firm (Cioffi, 2020, 59).

In Nordic sector, companies share substantially similar characteristics; a common ownership characteristic of Nordic listed companies is that company ownership is concentrated around few shareholders that exercise executive control as a way of tending their investments. As shareholders are fewer and hold more control over their ownership, they also have a vested interest in devoting time and effort to their company (Lekvall, 2018, 168).

According to Arize et al. (2015), Buigut, Soi and Koskei (2014) discovered that on many occasions boards of directors have been attempting to rein in CEO's power and most effective solution has been to ensure the board has a high proportion of independent directors with no ties to management.

2.2 CEO

Shareholder assembly elects their chief executive officers (CEO's). They are managers and symbols of their firm, and the power they wield simultaneously exposes them to extremely high risk, as their firm's successes and shortcomings are largely pinned on them. Sudden and tremendous downfalls may cost them their entire careers (Pfeffer & Salancik, 2003, 17)

CEO is central in formulating and executing firm's strategic plans, having most influence and most deliberation than any other officer spearheading the company. There have been multiple studies into CEO's influence and its relation to firm performance, but their results have been mixed (Busenbark et al., 2016).

CEO has influence, and an expectation, over setting and exemplifying the corporate culture, where their actions and inactions alike send signals to managers, board members and workers alike. They reflect the understanding of company values, which in turn deliver expectations on how company conducts themselves externally, and where are the limits (Asuquo & Amede, 2018, 78)

Companies are globally competing over talent (Fernandez et al., 2012,3). CEO's skills in leadership and organizational management, collectively named human capital is formed from the education and training they have received. (Hillman and Dalziel, 2003). Human capital can be divided into three skillsets, that are General Skills, including aptitude to balancing and settling disputes, leadership, information processing and general decision-making (Harris & Helfat, 1996, 895);(Mintzberg, 1973), industry-specific skills that may be transferrable between enterprises of similar industry, and firm-specific skills, which are only useful within the specific firm and may not be used outside of it. (Harris & Helfat 1996)(Rajagopalan & Prescott, 1990). Additionally, CEOs have relational capital, that are formed from CEO's personal networks, be it ties to external actors, other firms and other external contingencies. (Pfeffer & Salancik, 1978).

CEO duality is a situation where a CEO is simultaneously in the chair of the board of directors, a characteristic common to U.S. firms (Arize et al. ,118). CEO duality has opposing arguments between agency- and stewardship theories where prior theory

argues against duality, and stewardship theory argues for it. However, empirical results between CEO duality and corporate performance are mixed (Shrivastav, Kalsie, 2018, 38-39).

2.3 Agency theory

Most of the existing academic literature is based around principal-agent problem (Aguilera et. Al, 2008, 2).

In a typical publicly traded company, there is a separation of powers between shareholders that own the company and directors that manage the company. Due to the dispersion of firm's stakeholders and the hands-on approach of its executives, the executives have the capability to assume considerable power and influence over the company (Fried, Bebchuck & Arye, 2004, 15).

CEOs, the agents of a company and shareholders, or the principals, have conflicting, perhaps mutually exclusive, goals and hopes for a company. The friction between them is called a principal-agent problem. If both stakeholders and directors are working towards maximization of profits, in situations where directors have had powers delegated to them by their principals, it is reasonable to assume that the directors may not always work towards shareholder goals, instead fulfilling their own goals (Jensen & Meckling, 1976).

Manifestations of agency problem may affect daily decision-making and firm operations in a number of ways, from effort exerted to private interests regarding how perks are distributed and used. There is an incentive for executives to not put in all the effort, because they cannot fully reap the rewards of their effurts but they will suffer the full effect, should they fail. Conversely, executives enjoy all their perks to their fullest, but will not fully bear the cost of the perks (Fried, Bebchuck & Arye, 2004, 16). Executive has an incentive to receive as much compensatory benefits with minimal effort. Executive compensation is where principal-agent problem may manifest the most. This may be directly in contrast with stakeholder aims, including a possibility for an executive to make less risky decisions. (ibid., 63) Lack of such risk-

taking may hurt firm performance in the long term, as executives would rather ensure their own continued remuneration, rather than improve the company and provide value to its stakeholders.

As Agency Theory seeks to make plain, and provide tools to monitor and control the Agents, it also introduces monitoring costs. Monitoring costs are generally always non-zero incentives or payments levelled at the Agent (Jensen & Meckling, 1976, 5). These monitoring costs are exercised via agreements between the CEO and the shareholders, that curtail undesired actions from shareholder's point of view, such as risk aversion, self-interest and conflicting goals between CEO and the enterprise (Martin, Butler, 2016, 635).

Criticism towards agency theory is that it does not comprehensively explain corporate governance mechanisms. According to Yusof (2016), Brudney (1985), scattered shareholders do not possess the required information to accurately bargain over the terms of executive compensation, nor can they effectively control managers themselves. This caveat is also identified by Jensen & Murphy (1998), though they did not level it as a criticism towards agency theory, rather noting that shareholders possession of incomplete information over CEO actions is a feature of principal-agent problem itself, rather than a flaw.

Edmans and Gabaix (2016, 1233) contest that models built around agency theory are not consistent with practical reality and does not relate to CEOs directly, because agency theory frameworks were devised to solve principal-agent problem as a whole. For example, CEO compensation may be used to attract talented CEOs to chief the company, as opposed to CEO artificially increasing their own salaries within the company.

According to Dhliwayo & Bussin (2018), Bol (2008), traditional agency theory models do not consider a concept of fairness, where distributive fairness is sought in remuneration, especially among employees. Unfair remuneration practices may lead to negative attitudes, reduced motivation and, therefore, adverse actions from firm's perspective.

Yusof (2016), Aguilera et al. (2008) defines agency theory as a closed system, but Yusof's citation is lacking. Aguilera et al. actually mention that most literature on corporate governance assumes that if principal-agent problem is managed, firms' performance grows, an approach which introduces overarching, universal assumptions about firm performance, but pays no attention to the complex contexts the firms are embedded in.

Summing up the literature concerning Agency Theory is recognized as a favored theory in explaining the power dynamics and motivations between shareholders and the executives in any firm, while shedding light to, and attempting to address, problems the dynamics may cause, but primary criticism reminds that principal-agent problem is not the whole story and in the years following Agency Theory's conception, multiple other theories have been developed that attempt to grasp the fine nuances of the executive world.

2.4 Stewardship Theory

Stewardship Theory focuses on managerial behavior and contrasts Agency Theory by positing that the conflict of interest between a firm and an agent does not exist.

An agent that functions as a steward seeks to fulfil the goals of the organization they are in and does not let their own self-interest get in the way of organizational goals, such as profit maximization. A steward will always cooperate for the benefit of the organization and principal even if the steward's views and principal's views do not align (Davis et al., 1997).

A steward is honest, will not lie or steal and will keep their word. (Martin & Butler, 2017, 636 ; Jones, 1995). A steward benefits external principals and shareholder value, because as the value of the organization maximizes, the utility of the steward maximizes. (Davis et al., 1997).

It is proposed that stewardship is born because the stewards personally values behaviour that furthers welfare for other in the long term (Hernandez, 2012), and that monitoring measures for a steward is not required, because the steward's attitude is already aligned with the organization's goals.

The question Stewardship Theory presents is that, lacking internal motivation, how well a manager can improve firm performance. Performance variations are explained by Stewardship Theory to be a cause of structural variations within a firm that may not encourage firm performance to its fullest. (Donaldson & Davis 1991 ;Donaldson 1985).

CEO Remuneration suggestions are different in Stewardship Theory compared to Agency Theory (Martin & Butler., 2017, 636). Since stewardship theory posits that CEO always works for the benefit of the company, complex remuneration packages are not needed for motivation, a "satisfactory remuneration" is enough (Glinikowska & Kaczmarek, 2015).

Instead, under Stewardship Theory CEO's authority and discretion should be maximized, so that the CEO can maximise their utility to the organization (Davis et al., 1997, 26). As less resources are needed to keep the CEO in check, corporate governance under the principles of Stewardship Theory should give the enterprise a competitive advantage over those that rely more on the principles of agency theory (ibid., 26).

While Stewardship Theory alleviates rigid confrontation between Agency Theory's "Agent versus Principal" -thinking, it does not sufficiently link corporate governance with wider organizational environment (Aguilera et al., 2007, 2). The criticism of stewardship theory is aimed towards is unrealistically clear-cut characteristics of the steward, as the thinking of people in reality is much more nuanced and complicated than what Stewardship Theory posits. Rather, a more realistic approach to explain CEO dynamics could be achieved by combining both Agency and Stewardship theory.

2.5 Resource Dependence Theory

Resource Dependence Theory approaches firms and organizations from a viewpoint that firms cannot live in isolation. To survive, resources are needed; resources which are limited and most of the time out of reach. If a firm fails to acquire particular resources, it may prove problematic for their survival. This induces a dependency of the environment on a company (Pfeffer & Salancik, 2003, 258).

Core ideas of the theory are that social context matters, organisations strategize to pursue their interests and increase their autonomy, and at the core of understanding organizational actions is power (Davis, Cobb, 2010).

Pfeffer and Salancik (2003, 40-42) continue that interdependet agents are responsible for all organization's outcomes; organizations seldom survive by themselves. Interdependence is not always symmetrical, or two agents, organizations or entities may not be dependent on one another equally. Rather, interdependence between two entities vary according to supply and demand of a resource. If a particular resource is abundantly available for organizations, less interdependence manifests between them as resource abundance fulfil demands.

Hillman & Dalziel (2003), Korn & Ferry (1999) stated that firm executives both provide and control resources at firm's disposal. According to Hillman et al. (2009, 1408) Pfeffer & Salancik (1978) claim that directors bring in specialized advice, information that is otherwise out of reach, legitimacy and authenticity and information channel accesses. Hillman et al. (2009) continue that Provan (1980) found a link between increased access to critical resource and acquisition of powerful board members.

While Resource Dependence Theory is most commonly used to explain organizational behaviours in relation to other organizations, it can have inferences drawn between organizations and their boards.

As discussed in Chapter 2.2, CEOs accrue human and relational capital that benefit them in decision-making. Beneficial decisions increase the value and the profitability of the organization the CEO works for. This makes a CEO a resource from resource dependence theory perspective. Special set of skills, among them managerial and communicational, are needed to keep a firm afloat, and to convince stakeholders that the future of the firm is in good hands.

Therefore, CEOs are resources firms would attempt to have control over, but at the same time CEOs themselves wish to expand their power over available resources.

2.6 Executive compensation and its components

In the United States, CEO Compensation is a focus of constant scrutiny and debate and the discussion revolves around the fairness and modesty of CEO compensation. According to Frydman & Jenter (2010, 2), CEO compensation has been in growth for the past 30 years and has stirred up debates on the nature of the pay packages.

In the beginning of 2000's, credibility of chief executive officers has been damaged in USA. This has been attributed to enormous compensation often attributed to inverse performance (Monks & Minow, 2011, 348).

Additionally, the academic interest on executive compensation has been in a rise. CEO pay research has grown even faster than CEO compensation, skyrocketing from 1-2 papers per year prior to 1985 to sixty papers in 1995 (Murphy, 1998, 2). Following the 2008 financial crisis government attempts to indirectly control the increasing executive pay increased by increasing accounting requirements and additional filings (Maruffi et al. 2015, 114).

In USA, CEOs earn many times more in compensation than in other countries, as pointed by numerous studies in the past (Arize et al, 2015, 115). However recent studies also point towards the pay cap diminishing, such as Fernandes et al, stating that US CEOs earn an average of 26% more than their foreign counterparts in 2006, far less than the 100% or 200% premiums documented in the academic research (2012, 2). This pay gap has been found narrowing down as companies have internationalized and firms outside USA have adopted more U.S.-like firm characteristics (ibid. 123).

Fernandez et al. found that although high pay of CEOs in United States has been found excessive, comparative results after firm, ownership and board characteristics are considered, are economically modest (2012, 27).

One link to growing CEO compensation has also been identified to be partially due to internationalization of companies. Internationalized company CEOs are exposed to more risk and more unknowns they necessarily would not encounter in domestic firms. Therefore, CEOs may desire more premium to counter the risk (Arize et al.,

2015, 117; Oxelheim & Randov, 2004,5). Additionally, Conyon et al. found that although CEO pay in United States was substantial compared to other countries, it could partially be explained by U.S. CEOs having higher risk premiums due to equity incentives (2005, 28).

Akram & Abrar ul haq (2019), Conyon (2006) mention that to keep executives in a company, proper compensation is a critical attractor and motivator, simultaneously incentivizing CEOs to reach company-adjacent goals.

Incentive-based compensation components, or tying parts of compensation package to firm performance, have gained favor in the planning of executive compensation. Long-term incentive-based compensation is perceived as a natural way to improve firm performance (Enayati et al. 2016, 2) (PricewaterhouseCoopers 2012, 9).

In 1991 Donaldson & Davis found in their study that shareholder returns of a firm was not substantially different, CEO long-term incentives did not increase shareholder returns in Australian context (1991,16). Enayati et al. (2016,9) found a statistical relationship in S&P 500 firms in US where implementing long term incentive plans increased firm performance in short-term followed by decline in the future. Additionally, corporate lobbying, firm's attempts to influence government lawmaking, had a positive association with increasing executive compensation, while firm performance was negatively impacted (Maia et. al. 2022, 10).

In contrast, and in direct opposition to existing theory, especially Agency Theory, it was found that as CEO's tenure lengthens, it positively impacts the accounting performance of a firm, in particular when they receive a higher cash compensation, but conversely a negative relationship to firm performance can be found as long-term incentive portion grows. This finding was reported from a meta-analysis testing 385 studies (Cao et al, 2021).

CEO salaries are composed from varied structures. To gain an accurate understanding over how executive compensation structures differ between Nordics and United States, the composition of the payment packages must be determined. Existing literature hints that five compensation categories can be often identified. These are salary, annual bonus, incentive plan pay-outs, option grants and stock grants.

Also, CEOs often receive multitude other benefits, such as various perquisites and pension plans. If a CEO is to be sacked, they also often have substantial severance payments as well (Frydman & Jenter, 2010, 5).

Next the common compensation components are defined.

2.6.1 Base Salary

Base salary is the basis of executive compensation and is typically determined through competitive "benchmarking", depending on general industry salary surveys and detailed analyses of industry peers. Base salaries are a fixed component in the executive contracts, such that they are received regardless of firm performance. This is favorited by CEOs that dislike risk (Murphy, 1998, 9-10). A combination of skills, expertise, seniority and education may also effect the base salary size (Giroux, 2014, 20).

2.6.2 Bonus

Bonuses are incentives which are paid at the end of the year if a CEO has reached agreed productivity thresholds.

Such performance thresholds may be earnings per share, or other performance levels where a measurable level must first be reached before a bonus is received. In pay-performance structures once a CEO reaches a threshold on some KPI, they are monetarily awarded (Kim & Jeff, 2018).

Bonuses are tracked by performance measures, and most companies favor two or more metrics. Measures are often either added on remuneration, acting as an individual contract. Alternatively bonus can be multiplied by another performance indicator, increasing as performance measures are met (Murphy, 1998). In still other cases, bonus payments are determined by a "matrix" of performance measures (1998, 11).

Cash bonuses are often paid annually as a lump sum. They can be determined individually or, paid as a given amount of cash, a percentage from salary or in some other measure (Giroux, 2014, 15).

A CEO must cross a threshold (often a percentage of performance target) to receive the bonus, and a "minimum bonus" (often a percentage of the target bonus) is paid at the threshold performance. Bonus percentages increase on an "incentive zone," an area where increasing performance on CEO's part corresponds to increasing bonuses typically until a percentage "cap" on bonuses paid (ibid, 10-11).

2.6.3 Stock options

Stock options are incentives that may be offered to CEOs when they sign in for the company. Stock-based compensation motivates executives to take real actions to increase firm value (Kadan & Yang, 2005, 2). The way stock options may be offered to a new CEO is that they do not get company stocks straight away. Instead, they get a right to buy a certain amount of company shares after some time has passed.

The purpose of using stock options as a compensation is to tie executive compensation to share price and ensure CEO's alignment towards shareholder profits (Frydman & Jenter, 2010, 5). However, stock options loose incentive appeal if the stock price falls sufficiently below the exercise price, calling for an option repricing (Murphy, 1998, 18). Also according to Ekonen (2014, 16), eg. Bebchuck and Fried (2003) argue that option-based remuneration may award a CEO due to factors that the CEO had no effect on.

There was significant development in option compensations during the 80's and 90's, as option compensations rose from 20% to 40% between 1990 and 2000. Thus, Frydman and Jenter posit that option compensation has been the sole driver in CEO compensation increase, and any theory that attempts to explain the growth in CEO pay needs to account for this change in the structure of pay as well (Frydman & Jenter, 2010, 6).

By contrast, Bebchuck and Fried allege that in the rising popularity of performance-based pay in form of options, managers have used their influence to increase their option-based compensation portions without giving up their respective salary portions. Additionally, the options did not link into any substantial performance metric (Bebchuck & Fried, 2003, 7). Many stock options are issued "at the money", the exer-

cise price of a stock option is set to the market price of the grant-date. While its intention is to incentivize executives to make profit-maximizing managerial decisions, Bebchuck & Fried (2002, 45) suggest that it is highly unlikely that an at-the-money option plan is optimal and well suited for all firms at once, because every firm is ultimately different.

2.6.4 Perquisites

Perquisites are benefits that do not neatly fall into above categories and are often comprised assets other than cash and securities. These can be memberships, aircrafts, cars or favourable loan contracts paid by the company. Disclosure of such perquisites is difficult especially in United States of America (Frydman & Jenter, 2010).

In 2009 it was found that weakly governed firms were more likely to award their executives more perquisites over strongly governed firms and were more likely to obfuscate or hide their executive perquisites (Andrews et al. 2009).

2.7 Accounting Performance

Accounting performance measures must be identified, because identifying common accounting performance metrics form one of the backbones of this research.

Any organization must adhere to financial constraints and deliver value to its shareholders. To avoid financial failure and eventual bankruptcy, organizations must manage and monitor their finances and ensure that the financial constraints are not breached. (Neely, 2002). One of the most significant ways to measure firm performance is accounting-based measures, which indicates how efficiently agents of a firm have utilized firm's resources (Guney, Karputz & Komba, 2020).

Annual financial statements are the most important supplier of organization's financial information, allowing historical recording and comparisons over time. (Boby 2013)

There are multiple well-established accounting-based financial metrics available that can be used to give an indication towards firm's profitability, capability of meeting its financial obligations.

A single measure does not give a full picture, and determinants of financial performance should involve multiple measures (Capon et al., 1157).

Total Revenue, is the total amount of cash brought in by firm's principal operations.

Operating Profit is the profit from firm's principal operations after cost of revenue and costs of operation has been deducted. (ibid, 63).

$$Operating\ Profit = Revenue - Operating\ Expenses$$

Operating Profit Rate is a ratio that reveals how much returns a company has earned form principal operations (Bragg, 2012, 38).

Net Profit is the so called 'bottom line' measure that is left after all expenses and taxes have been deducted from all income. (Berk & DeMarzo, 2017, 62).

Book value of assets constitutes the total value of both short-term and long-term assets in a company as shown on financial statements after depreciations. (ibid. 59).

Book value of debt contains the value of all debt a company has accrued as noted in the financial statements.

Book value of intangible assets contains assets that are intangible such as patents, trademarks and intellectual property. (ibid. 60).

Operating Returns

Some common metrics used by analysts is to measure company's operating returns are Return on Assets and Return on Capital Employed. Measuring operating returns yields valuable data, because that type of return is impacted by firm's principal operations only.

Return on Assets is a ratio that determines how profitable a firm is when compared against their available assets. (Berk & DeMarzo, 2017, 77).

$$Return\ on\ Assets = \frac{Net\ Profit}{Total\ Assets}$$

Return on Capital Employed is a ratio between company's profit during a given period and the amount of capital a company has put into use for firm operations. (ibid. 77).

$$Return\ on\ Capital\ Employed\ = \frac{Net\ Profit}{(Total\ Assets - Current\ liabilities)}$$

Earnings Per Share is a closely looked performance ratio that measures profitability compared to the amount of outstanding shares a company has, essentially revealing how much a shareholder has gained or lost value per share over an accounting period. (Bragg, 2017, 125).

$$Earnings\ Per\ Share\ = \frac{Net\ Profit}{Shares\ Outstanding}$$

2.8 Market Performance

Beta measures the sensitivity of a given share in relation to the market the share belongs to, most often the stock market index it is traded in. It can be used as a proxy for a riskiness of an investment (Berk & DeMarzo, 2017, 376). A stock beta gives a guideline towards how risky a given stock is; beta below 0.8 is generally accepted as low-risk, 0.8-1.2 as risk-neutral and over 1.2 as high-risk

$$Beta = \frac{Covariance(R_e, R_m)}{Variance(R_m)}$$

Where:

R_e = Return of Stock

R_m = Return of market

Tobin's Q

Tobin's Q is the ratio of market value of assets to their book value

$$Tobin's\ Q\ = \frac{Total\ Market\ Value + Liabilities}{Total\ Asset\ Value + Liabilities}$$

A ratio of 1 or more indicates that firm's market value is overvalued compared to its actual recorded assets. (Singh et al., 2018).

2.9 Company size and governance

It may be generally unlikely that analysis results are a result of changes in a single variable, rather the outcome is the combined effect of multiple factors. Despite an independent variable exhibiting links between dependent variables, it does not mean that some other variable is not interfering with results.

According to Becker (2005, 274), Schmitt & Klimoski (1991), such explanations may be managed with the use of control variables. Additionally Becker (2005, 274), Schwab (1999) state that control variables may reduce the error terms and increase statistical power.

There are two ways to control variables in the study. First one is to control by experimental design (Becker, 2005, 274 ;Keppel, 1991). Second way to control variables is to include them in the analyses (Becker, 2005, 274 ;Neter et al. 1996). In this research the second method is used, by including control variables as part of the analysis.

Company size and governance variables were selected control variables, because they are believed to impact analysis results. In this thesis company size is determined by the natural logarithm of the book value of assets. In the scope of this research, author believes that book value of assets may most interfere with results, as companies with more assets are generally large, with more means to perform revenue-increasing activities.

Additional control variables are governance variables, which are board size; how many directors are in Board of Directors, and board independence ratio; what portion of board of directors also have executive roles in the company.

Controlling for board size is important, because Agency Theory and Resource Dependence Theory make claims towards links between board size and company financial performance, thus the possibility of board size influencing performance cannot be ignored.

Because the focus of the research is particularly CEO compensation, and CEO's may additionally serve in the Board of Directors of companies, CEO's influence in Board of Directors as a decisionmaker may have effects on the results.

2.10 Hypothesis Formation

Hypothesis is a tentative explanation that accounts for a set of facts that can be tested by further investigation (Mourogan & Sethuraman, 2017). To proceed with the research we must gather conclusions from the literature review and distil them into research hypotheses that can be tested with data.

Careful establishment of a hypothesis cannot be overstated. A comprehensive literature review eventually leads to an understanding of the subject in general. The general subject will ben then distilled down to a more specific, targeted research question and eventually the question is reduced down to a mathematical representation of an expected relationship between selected variables (Weathington et al. 2012, 152).

We have expanded on the role of a CEO and the primary functions of a firm via the lenses of three separate theories, Agency Theory, Stewardship Theory, Resource Dependence Theory.

Especially in public policymaking, Agency Theory has gained much more attention than Stewardship Theory (Martin, A. & Butler, F., 2017). All three theories present a CEO as an integral asset of a firm, capable of producing benefits or drawbacks, while at the same time having the capacity of choosing between the benefit of their firm or themselves.

Agency Theory and Stewardship Theory present an executive of an extreme – either an extreme actor of self-interest or an extreme actor of benevolence. Both agency

theory and stewardship theory can be tied together with their monitoring and bonding costs, which may be useful in guiding the actions and decisions of a CEO.

Additionally, from the viewpoint of resource dependence theory, a CEO can be seen simultaneously as an agent of the company and as a resource for the company. As firms compete over limited resources, skilled CEOs being among them, there is an organizational cost, or other monitoring measures, or legal measures that needs to be substantial enough such that a CEO does not simply move over to more profitable organizations.

Existing literature concentrates on justifying their own paradigms and comparing theories between one another. It also makes apparent a tight balancing act that executive remuneration faces, where the goalposts exist at the underlying interests executives and stakeholders. The difference between set goalposts, we anticipate, is a breeding ground for corporate politics and influencing; top talent needs a fair and substantial incentive to have their skillsets retained by the company, but on the other hand compensation must be correctly managed such that executives' interests follow the company's interests.

Dynamics between CEO and the firm stakeholders are extensive, however this thesis only concerns itself with following end goals: To highlight differences between executive pay packages between two geographical areas, separated by two substantially similar, yet different cultures, and to find whether differing executive pay packages have any substantial effect on financial, non-financial and market performance of the companies. The research is approached from performance pay perspective, where the proportion of performance pay form total pay is measured against

Highlighting differences between the executive pay packages between two different macro-economical fields is valuable, as it will provide new data for comparison, and could reveal differences in culture and mentality of corporate governance.

Based on the literature we formulate following hypotheses.

H1: Size of CEO pay has a positive impact on firm accounting performance.

H2: Whenever CEO's performance-based pay portion from total pay increases, it has positive impact on firm financial performance.

H3: Whenever CEO's performance-based pay portion from total pay, it has positive impact on firm market performance.

3 Methodology

The methodology chosen for this research is longitudinal quantitative research.

Longitudinal research can be defined as research that emphasizes the study of change, with a minimum of three observations collected in a manner that units may be linked over time (Ployhart & Vandenberg 2010, 97).

Positivist worldview assumes that facts exist, such facts can be proven, reality is same to everyone, and measurement reveals the nature of reality. (Ryan, 2018, 15). An extreme positivist stance implies that any research conducted by a positivist aims for measurable and observable regularities using pure data. Such data is rigorously analyzed for causal relationships, aiming to form generalizable laws. (Alharahsheh et al. 2020 41). According to Kazim & Antwi (2015, 220) positivist worldview demands an objective research approach. A research method best fitting a positivist mindset is called quantitative research. Quantitative research focuses on gathering of quantifiable, most commonly numerical data, that is used to tests hypotheses with defined variables, and links them to causal explanations.

Quantitative data by itself does not necessarily convey useful information, therefore data must be processed by analytical and statistical techniques, such that the data can be distilled to useable interpretations (Saunders et al., 2009,414).

A quantitative research approach applies best to the goals of this research, because all data collected is quantifiable data, and there is a good chance the data may be distilled into valuable insights by analytical methods. Additionally longitudinal research is most logical approach, because single data point in collection constitutes

one year's worth of data and observing companies over the course of a single year may not yield sufficiently generalizable results.

Data concerning this research is collected from two geographically different economic areas, the Nordics and USA. This data is collected to investigate linkages between CEO compensation compositions, firm performances, and compare findings between the economic areas. While a body of research concerning CEO compensation in United States is vast, comparisons between the select economic areas are limited.

3.1 Data collection

25 manufacturing companies domiciled in one of the Nordic countries were selected as secondary data. These companies were selected from OMX Nordic 40 based on total share turnover. They were gathered by non-probability sampling (Borén, 2015).

The data was collected from the companies' regulatory annual filings, namely annual reports, cash flow statements and balance sheets.

In the Nordics largest companies were selected, because it is believed to best represents the Nordic population and the data would be most available and most consistent in terms of quality (Borén, 2015).

To complement the Nordic company data, an additional year of data was added to the dataset, increasing the total dataset to six years, between 2011 and 2016, inclusive.

The U.S. data was secondary data of 50 publicly traded companies in New York Stock Exchange that are active and legally domiciled in United States of America. The amount of publicly listed companies in USA overshadows companies listed in Nordic exchanges by several orders of magnitude. One of the author's concerns was that selecting only top-performing companies from the U.S. market would skew results, as top companies in USA are traditionally much larger in size than those in the Nordics. Therefore, a random sampling was used such that the sizes of the companies were relatively dispersed, and that small companies would also contribute to the data. Similarly, U.S. dataset includes company data between 2011 and 2016.

Data availability was not an issue with USA data, as federal securities laws mandate regular and consistent annual filings to be filed by publicly listed companies. (15 U.S.C 78m) These filings intend to give a comprehensive look over the company itself as well as audited financial records.

3.2 Description of Variables

From each of the 50 companies 15 data points were gathered. These data points include accounting measures available from corporate annual filings, market measures and executive compensation data. These data points are also used as sources for derived measures and ratios.

For accounting measures total revenue, operating profit, net profit, return on assets, return on capital employed and earnings per share will be used, as there is a best chance these variables give a comprehensive insight on how a company performs accounting-wise, provided that generating returns is a company's foremost objective. Additionally book value of debt and equity is used to give insight into company financial health. Book value of intangible assets is used to measure the non-material assets a company has, including trademarks, brands, intellectual property and patents.

For market measures we will be using market capitalization, annualized daily return of stock, stock beta, market capitalization and Tobin's Q. They give insight to size and value as perceived by the market.

For independentvariables Fixed Pay, Total Pay and Performance Pay is used. In the annual filings the varied means of performance-based pays were commonly grouped under 'Performance pay' without a granular breakdown. Thus, CEO's performance-based pay, CEO's fixed pay and total pay will be used. Also, ratio of performance-based pay to total pay and ratio of performance-based pay to fixed pay will be used.

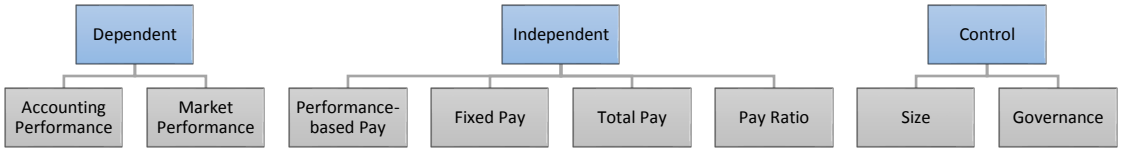
Book value of assets, board independence ratio and board size are used as control variables. Definition lists either the original definition, or a formula used to compute the variable. Source column mention either the source of the data, or 'Derived' if a variable in question is computed from other variables in this study.

Table 1. List and definitions of independent, dependent and control variables

Compensation Measures (Independent)		
Label	Definition	Source
RatioPerfPay	PerfPay / TotalPay	Derived
LNFixedPay	Fixed (salary) portion of compensation	Annual Reports
LNPerfPay	Performance-based portion of compensation	Annual Reports
LNTotalPay	Total compensation size	Annual Reports
Accounting Performance Measures (Dependent)		
LNTotalRevenue	Natural logarithm of Total Revenue	Annual Reports
LNNetProfit	Natural logarithm of Net Profit	Annual Reports
LNOperProf	Natural logarithm of Operating Profit	Annual Reports
OPR	Operating Profit Rate	Derived
LNBVIntAsset	Natural logarithm of Book Value of Intangible Assets	Annual Reports
LNBVDebt	Natural logarithm of Book Value of Debt	Annual Reports
LNBVEquirty	Natural logarithm of Book Value of Equity	Annual Reports
Return on Assets	Net Profit / Book Value of Assets	Derived
Return on Capital Employed	Net Profit / (Book Value of Debt + Book value of Equity)	Derived
Earnings Per Share	Net Profit / Total Shares Outstanding	Derived
Market Performance Measures (Dependent)		
Market Capitalization	Total Shares Outstanding * Share Price	Annual Reports, Nasdaq OMX Nordic, Yahoo! Finance
Annualized Stock Return	Percentage of return a stock has gained during one year.	Annual Reports, Nasdaq OMX Nordic, Yahoo! Finance
Beta	Measure of share sensitivity compared to market	Annual Reports, Nasdaq OMX Nordic, Yahoo! Finance

Tobin's Q	Measure of perceived value of the company in the market	Annual Reports, Nasdaq OMX Nordic, Yahoo! Finance
Governance & Size Measures (Control)		
RatioBInd	Ratio of non-executive directors / board size	Annual Reports
LNBVAssets	Natural logarithm of Book Value of Assets	Annual Reports
LNBsize	Natural logarithm of total members in board	Annual Reports

Figure 1. Hierarchy of variables



3.3 Data Analysis

To gain insight and answers to the hypotheses outlined, the gathered secondary data is processed in three phases, such that data for Nordic companies and USA companies are processed separately. To aid in data analysis, SPSS statistical software will be used. First, descriptive statistics are extracted from both datasets to gain cursory insights over the range and distribution of data.

For descriptive statistics, raw values of data are used. In later steps, natural logarithmic values of variables are used to mitigate against large numbers impacting results solely due to their magnitude.

In second phase, Pearson correlation statistics are taken from the dataset, to find out how variables correlate with one another. Correlations are especially important

In third phase, ANOVA test is run against the data to obtain overall significance for regression data, so that non-significant results may be discarded.

Finally, The Ordinary Least Square Regression will be performed separately for Nordic and USA datasets by using compensation metrics as independent variables and accounting and market performance measures as dependent variables. OLS regression equation is as follows:

$$Y_{it} = \alpha_{it} + \sum_{k=1}^{p} \beta_k x_{it} + \varepsilon_{it}$$

Where:

Y_i is the dependent variable of i at period t

A_{it} is the intercept variable

X_i is the model's variable at position *i*

E is the error term

I denotes a sample firm

t denotes time period.

Regression coefficients are measured between independent, dependent and control variables, exact models are given below. Because pay variables used in the study are derived from each other (Total Pay contains within itself Performance Pay and Fixed Pay and Pay Ratios are ratios between Performance Pay and Fixed or Total Pay), there is a very high likelihood of variable correlating with one another. To avoid correlation issues during regression, the models are run separately for RatioPerfPay, LNPerfPay, LNFixedPay and LNTotalPay. This is repeated for Nordic data and USA data separately, so that economic are specific links between variables become apparent. These links will then be studied and compared for culture-specific insights, and answers to the research questions will be discovered from these results.

Performance Pay Ratio:

$$LNNetProf = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(RatioPerfPay)_{it} + \varepsilon_i$$

$$LNOperProf = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(RatioPerfPay)_{it} + \varepsilon_i$$

$$OPR = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(RatioPerfPay)_{it} + \varepsilon_i$$

$$MargProd = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(RatioPerfPay)_{it} + \varepsilon_i$$

$$ROA = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(RatioPerfPay)_{it} + \varepsilon_i$$

$$EPS = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(RatioPerfPay)_{it} + \varepsilon_i$$

$$LNMarCap = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(RatioPerfPay)_{it} + \varepsilon_i$$

$$StockRet = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(RatioPerfPay)_{it} + \varepsilon_i$$

$$Beta = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(RatioPerfPay)_{it} + \varepsilon_i$$

$$TQ = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(RatioPerfPay)_{it} + \varepsilon_i$$

Fixed Pay:

$$LNNetProf = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNFixedPay)_{it} + \varepsilon_i$$

$$LNOperProf = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNFixedPay)_{it} + \varepsilon_i$$

$$OPR = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNFixedPay)_{it} + \varepsilon_i$$

$$MargProd = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNFixedPay)_{it} + \varepsilon_i$$

$$ROA = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNFixedPay)_{it} + \varepsilon_i$$

$$EPS = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNFixedPay)_{it} + \varepsilon_i$$

$$LNMarCap = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNFixedPay)_{it} + \varepsilon_i$$

$$StockRet = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNFixedPay)_{it} + \varepsilon_i$$

$$Beta = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNFixedPay)_{it} + \varepsilon_i$$

$$TQ = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNFixedPay)_{it} + \varepsilon_i$$

Performance Pay:

$$LNNetProf = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNPerfPay)_{it} + \varepsilon_i$$

$$LNOperProf = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNPerfPay)_{it} + \varepsilon_i$$

$$OPR = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNPerfPay)_{it} + \varepsilon_i$$

$$MargProd = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNPerfPay)_{it} + \varepsilon_i$$

$$ROA = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNPerfPay)_{it} + \varepsilon_i$$

$$EPS = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNPerfPay)_{it} + \varepsilon_i$$

$$LNMarCap = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNPerfPay)_{it} + \varepsilon_i$$

$$StockRet = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNPerfPay)_{it} + \varepsilon_i$$

$$Beta = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNPerfPay)_{it} + \varepsilon_i$$

$$TQ = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNPerfPay)_{it} + \varepsilon_i$$

Total Pay:

$$LNNetProf = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNTotalPay)_{it} + \varepsilon_i$$

$$LNOperProf = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNTotalPay)_{it} + \varepsilon_i$$

$$OPR = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNPerfPay)_{it} + \varepsilon_i$$

$$MargProd = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNTotalPay)_{it} + \varepsilon_i$$

$$ROA = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNTotalPay)_{it} + \varepsilon_i$$

$$EPS = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNTotalPay)_{it} + \varepsilon_i$$

$$LNMarCap = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNTotalPay)_{it} + \varepsilon_i$$

$$StockRet = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNTotalPay)_{it} + \varepsilon_i$$

$$Beta = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNTotalPay)_{it} + \varepsilon_i$$

$$TQ = \alpha_{it} + \beta_2(BoardIndR)_{it} + \beta_3(LNBVAssets)_{it} + \beta_4(Bsize)_{it} + \beta_5(LNTotalPay)_{it} + \varepsilon_i$$

3.4 Validity and reliability

In general, the validity and reliability of data used in research should be, brought under question, as many factors may impact either in data quality or the way the researcher has interpreted the data.

Saunders et al (2009, 156) and Easterby-Smith et al. (2008) define four threats to data validity.

These threats are *subject error*, where research results are impacted by when the results are obtained; *subject bias*, where research data is based on what is thought to be wanted to be instead of what the data actually is; *observer error* where ambiguity has been introduced in data gathering and *observer bias* where interpretation of data has been ambiguous.

Alongside reliability there may be questions with data validity, further elaborated by Saunders and colleagues.

The questions or threats to reliability may arise in most recent historical events that have caused upheaval near measurement. Additionally testing or instrumentation can cause impacts to data, such that policies or behaviors that are in place are impacting the results of the test. Finally, mortality of subjects, where test subjects become unavailable before the research is complete, and threat of maturation, where passage of time has impacted the results. (Saunders et al., 2009, 157).

The author identifies subject error and observer error as potential threats to data validity. Despite care being taken to ensure secondary data has been meticulously gathered and processed, there is an increasing probability of processing errors in data as data points increase. As half of the secondary data is based on earlier research and earlier thesis, the concerns in that dataset may carry over to this research. In particular, Borén (2020, 40); (Ghauri & Gronhaug 2002) identified selection bias as a situation in which subjects are not randomly assigned.

Additionally, timeframe during which data was gathered may be impacted by close historical events. In particular, the data has been gathered from a time period that has been dubbed in popular and specialist media as the greatest upward market development in USA stock market in recent history (Partington, R. 2018; Egan, M. 2018;

Isbitts, R. 2021). While the data may be valid for contemporary history, validity issues may rise when attempting to compare the results to timespans longer than last 10-20 years.

4 Results

4.1 Case Nordics: Descriptive Statistics

For descriptive statistics, actual values of the variables are used whereas natural logarithms of the data are used for regressions.

Table 1 displays full descriptive statistics for Nordic companies with minimum, maximum and mean values alongside standard deviation, skewness and kurtosis of the values. All data is in millions of euros, except for EPS and compensation data which is in euros.

In Net profit we see an average profit of 4,4 million € with a loss of 3 Mil € as a lower bound and 37,9 Bil € profit as an upper bound, range 41746 Mil €. Standard deviation of 6544 suggests high variability among sample companies, but skewness of 2,39 suggest a positive skewness; more data is situated close to the lower bound.

In Operating Profit, the lower bound was a 3 752 Mil € loss and upper bound was 49 ,444 Bil € profit on operations. Range was 5 3196 Mil €. On average Nordic companies in the dataset had a 6 423 Mil € profit.

For Operating Profit Rate there was a lower bound of -0,6 and an upper bound of 4,11, with range 4,742, mean rate being 0,11 and standard deviation 0,34. Skewness was 10 and kurtosis 121 suggesting extremely leptokurtic data where most data points are closer to mean.

The lowest Return on Assets as -13,8% and highest 129% with an average of 7% and a range of 142,5%. Standard deviation of 0,13 suggests high dispersion in the data. However, as return on assets is a ratio that employs revenue and book value of assets as components, if the components have a high dispersion, so must the ratio be dispersed. Positive skewness of 5,922 suggests more datapoints are closer to lower bound in scale; higher returns on assets were rarer than lower.

Return on Capital Employed was -71,5% at lowest and 49,7% at highest with a range of 121,4% and a mean of 7%, indicating that on average 7% of returns is generated per 1€ investment. Interestingly, return on capital employed has a negative skewness, indicating that higher returns per capital employed are common than lower in the distribution. Additionally the sheer distribution of returns indicate that companies are varyingly efficient in using their capital.

In Earnings per Share -24,81€ lowest number and 203,40€ was the maximum, with range of 228,21€. Mean EPS was 7,71€ with a standard deviation of 18,77€ suggesting a high variability in the dataset- Additionally EPS is positively skewed and highly leptokurtic with a value of 79, suggesting that most of the datapoints are situated very close to each close to the lower bound of the dataset.

Market Capitalization was 41,26 million € at lowest and 2119345 million € at highest with a mean market capitalization of 103090,68 Mil €, range of 2119305 Mil € and a standard deviation of 227031 Mil €.

With stock returns a range of 19,349%, a mean of 0,434% and standard deviation of 1,887 was observed. Positive skewness of 8,6 and high kurtosis of 74 indicates that, while a typical return for a Nordic company is ~0,4%, most returns distribute close to it. The returns are not normally distributed; High kurtosis suggests that few data points are in the extreme ends of the distribution; only some companies see extreme returns.

Observing compensation ratios we see that highest total compensation is 361 Billion € whereas lowest compensation was 13 000€. The very high upper bound may be contributing to the average of 121602 Mil € compensation – this is further supported by a very high standard deviation, skewness of 10 and an extreme kurtosis value of 120. This suggests that most of the data points are closer to the lower bound of 13000€ with very high concentration close to mean, but with multiple outliers further out from mean. This suggests that most CEOs in Nordic sector have low overall compensation package, and high compensation packages are received by a limited number of CEOs.

Company betas had a range of 1,83. On average, with a beta of 0,312, it can be stated that companies are fairly low-risk investments compared to their markets.

With Tobin's Q the average was 6,17 indicating that by average firms tend to be overvalued based on the Q ratio alone. Positive skewness and a high kurtosis of 74 indicates that most companies in the dataset are either properly valued or undervalued.

Pay ratios show high variability between annual compensations. Most notably performance pay component ranges from 0€ to 22 Mil €. Lowest fixed pay is 9000€. Average CEO salaries are 3,2 Mil € in performance-based pay, 6,2 Mil in fixed pay. In total Nordic CEOs get 12,16 Mil € in compensation. Especially total pay is positively skewed, indicating that only few CEOs have a compensation closer to 12 Mil €

On average Nordic companies had 80 790 Mil € worth of assets in books. The lowest book value of assets was 3 809 Mil € and highest value was 398 916 Mil €. High standard deviation of 87295 suggests that the value of assets vary a lot between the companies.

In governance, Nordic companies have at minimum 11 board members and 33 members at maximum: Median size is 22. Board independence ratio fluctuates between 35% and 83%, with a mean of 53%; by average half of the board members also serve in executive functions whereas the other half are external directors.

Table 2. Case Nordic: Descriptive Statistics

	range	min	max	mean	st.dev	skew	kurt
NetProfit	41746,000	-3821,000	37925,000	4405,700	6544,402	2,396	7,665
OperProf	53196,000	-3752,000	49444,000	6423,525	8833,894	2,270	6,785
OPR	4,742	-0,630	4,111	0,110	0,347	10,394	121,096
ROA	1,425	-0,138	1,287	0,070	0,131	5,922	51,255
ROCE	1,214	-0,716	0,498	0,073	0,122	-1,438	12,523
EPS	228,210	-24,810	203,400	7,708	18,769	7,857	79,969
MarCap	2119305	41	2119346	103091	227032	5,961	45,129
StockRet	19,349	-0,910	18,439	0,434	1,887	7,682	66,396
Beta	1,830	-0,374	1,456	0,312	0,372	1,200	1,036
TQ	353,814	0,000	353,814	6,176	37,425	8,615	74,157
PerfPay	22000000	0	22000000	3226855	4134838	1,946	4,166
FixedPay	40060722	9000	40069722	6281231	5743924	1,488	6,308
TotalPay	360987000	13000	361000000	12160239	30327935	10,478	120,254
RatioPerf-Pay	0,941	0,000	0,941	0,306	0,180	0,380	0,470
RatioBInd	0,483	0,350	0,833	0,534	0,101	0,588	0,079
Bsize	22,000	11,000	33,000	21,740	4,574	0,303	-0,368
BVAssets	395107,00	3809,00	398916,00	80790,40	87295,46	1,847	3,408

Table 3. Case Nordic: Pearson correlation results

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	Y1	Y2	Y3	Y4	Y5	Y6	Y7
X1	1,000	,722**	,923**	,278**	-0,087	,358**	,745**	,281**	0,118	,318**	,457**	-0,111	-0,124	0,081	0,070	0,042	,223*	,214*	,336**	,721**	,219*
X2	,722**	1,000	,762**	0,006	-0,063	,644**	,893**	0,030	-0,038	,174*	,496**	-0,123	-0,158	0,020	-0,070	0,136	,415**	,390**	,194*	,924**	,528**
X3	,923**	,762**	1,000	,270**	-0,115	,443**	,763**	,275**	0,117	,202*	,495**	-0,133	-,206*	0,062	0,050	0,051	,245**	,245**	,194*	,735**	,400**
X4	,278**	0,006	,270**	1,000	-0,151	-0,156	0,103	,421**	,387**	0,068	0,026	-0,005	-0,055	-0,060	0,071	0,077	0,015	0,036	0,042	0,082	0,023
X5	-0,087	-0,063	-0,115	-0,151	1,000	0,032	-0,151	-,190*	-0,075	-0,159	-0,098	0,036	0,065	-0,143	0,058	0,050	-0,131	-0,090	-,209*	-0,087	0,138
X6	,358**	,644**	,443**	-0,156	0,032	1,000	,637**	-,164*	-,211**	-,177*	,203*	-0,141	-,391**	0,098	-0,136	-0,031	,243**	,198*	-0,011	,678**	,472**
X7	,745**	,893**	,763**	0,103	-0,151	,637**	1,000	0,062	-0,059	,229**	,475**	-0,110	-0,159	0,003	-0,040	,167*	,470**	,471**	,250**	,962**	,437**
X8	,281**	0,030	,275**	,421**	-,190*	-,164*	0,062	1,000	-0,013	0,067	,289**	,479**	-0,010	0,017	0,147	0,145	-0,106	-0,010	0,001	-0,089	0,024
X9	0,118	-0,038	0,117	,387**	-0,075	-,211**	-0,059	-0,013	1,000	0,089	-0,056	-,365**	-0,042	-0,011	,393**	0,149	-,207*	-,198*	-0,093	-0,006	0,055
X10	,318**	,174*	,202*	0,068	-0,159	-,177*	,229**	0,067	0,089	1,000	,165*	-0,045	0,039	0,057	0,072	0,069	0,153	,163*	,235**	,198*	-0,158
X11	,457**	,496**	,495**	0,026	-0,098	,203*	,475**	,289**	-0,056	,165*	1,000	,295**	0,083	0,037	-0,122	0,096	,249**	,265**	,210*	,454**	,204*
X12	-0,111	-0,123	-0,133	-0,005	0,036	-0,141	-0,110	,479**	-,365**	-0,045	,295**	1,000	0,017	-0,012	-0,152	0,027	-0,073	0,007	-0,081	-,206*	-0,017
X13	-0,124	-0,158	-,206*	-0,055	0,065	-,391**	-0,159	-0,010	-0,042	0,039	0,083	0,017	1,000	-0,072	0,065	0,080	-0,030	-0,004	0,041	-0,159	-0,093
X14	0,081	0,020	0,062	-0,060	-0,143	0,098	0,003	0,017	-0,011	0,057	0,037	-0,012	-0,072	1,000	-0,057	0,026	-0,002	-0,026	0,057	0,001	-0,027
Y1	0,070	-0,070	0,050	0,071	0,058	-0,136	-0,040	0,147	,393**	0,072	-0,122	-0,152	0,065	-0,057	1,000	,530**	-0,140	-0,040	-,186*	-0,039	0,049
Y2	0,042	0,136	0,051	0,077	0,050	-0,031	,167*	0,145	0,149	0,069	0,096	0,027	0,080	0,026	,530**	1,000	,291**	,391**	-0,101	0,153	0,060
Y3	,223*	,415**	,245**	0,015	-0,131	,243**	,470**	-0,106	-,207*	0,153	,249**	-0,073	-0,030	-0,002	-0,140	,291**	1,000	,950**	,258**	,489**	,205*
Y4	,214*	,390**	,245**	0,036	-0,090	,198*	,471**	-0,010	-,198*	,163*	,265**	0,007	-0,004	-0,026	-0,040	,391**	,950**	1,000	,207*	,464**	,229**
Y5	,336**	,194*	,194*	0,042	-,209*	-0,011	,250**	0,001	-0,093	,235**	,210*	-0,081	0,041	0,057	-,186*	-0,101	,258**	,207*	1,000	,256**	-,309**
Y6	,721**	,924**	,735**	0,082	-0,087	,678**	,962**	-0,089	-0,006	,198*	,454**	-,206*	-0,159	0,001	-0,039	0,153	,489**	,464**	,256**	1,000	,472**
Y7	,219*	,528**	,400**	0,023	0,138	,472**	,437**	0,024	0,055	-0,158	,204*	-0,017	-0,093	-0,027	0,049	0,060	,205*	,229**	-,309**	,472**	1,000

Variables: X1 = LNNetProfit, X2=LNTotalRev, X3=LNOperProf, X4=OPR, X5=LNIntAssets, X6=LNBVDebt, X7=LNBVEquity, X8=ROA, X9=ROCE, X10=EPS, X11=LNMarCap, X12=TQ, X13=StockRet, X14=Beta, Y1=RatioPerfPay, Y2=LNPerfPay, Y3=LNFixedPay, Y4=LNTotalPay, Y5=LNBsize, Y6=RatioBInd, Y7=LNBVAssets

Significance levels: *=<0.05, **=<0.01, N=150

4.2 Case Nordics: OLS Regression results

Below are listed the OLS regression results for Nordic data with each independent variable separately. Tables 4 – 7 list independent variables in columns and dependent variables in rows. Intercept variable is always on first column, followed by a pay variable that is studied, and three control variables. Last column is the R^2 coefficient for a model of that particular row. For brevity, results with at least one significant variable p<0.5 are displayed in a table. If no significant results were found, the variables in the table were excluded. Excluded variables are mentioned below respective tables as "Excluded"

Table 4. Nordic regression results, RatioPerfPay as independent variable

Label	(constant)	RatioPerfPay	LNBVAssets	LNBsize	RatioBInd	R^2
LNTotalRev	-0,385 (-0,567)	-0,287 (-1,335)	0,823*** (21,929)	0,704** (3,083)	0,035 (0,938)	0,86
LNNetProfit	-1,027 (-0,616)	1,554** (3,027)	0,852*** (0,743)	-0,634 (-1,142)	2,011 (1,82)	0,572
LNOperProf	-4,329* (-2,531)	1,188* (2,255)	0,782*** (8,904)	0,981 (1,743)	1,102 (0,991)	0,568
LNBVEquity	-0,265 (-0,494)	-0,013 (-0,081)	0,997*** (33,546)	-0,163 (-0,904)	-0,123 (-0,342)	0,927
ROCE	-0,058 (-0,35)	0,264*** (4,994)	-0,001 (-0,072)	0,02 (0,365)	-0,009 (-0,081)	0,156
EPS	21,719 (0,84)	11,9 (1,453)	4,389** (3,071)	-24,013** (-2,761)	16,575 (0,955)	0,13
MarCap	2,892 (1,299)	-0,845 (-1,198)	0,515*** (4,189)	0,424 (0,566)	1,818 (1,216)	0,225
TQ	40,351 (0,752)	-35,264* (-2,077)	-7,536* (-2,543)	19,21 (1,065)	-3,647 (-0,101)	0,079

OLS Estimate beta shown in cells above, t-values in parentheses
Variables excluded: OPR, LNIntAssets, ROA, StockRet, Beta
*= p<0,05; ** = p<0,01; *** = p<0,001, N=150

Table 5. Nordic regression results, LNPerfPay as independent variable

Label	(constant)	LNPerfPay	LNBVAssets	LNBsize	RatioBInd	R^2
LNTotalRev	-0,552 (-0,789)	0,001 (0,173)	0,819*** (21,014)	0,712** (3,071)	0,147 (0,318)	0,863
LNNetProfit	0,235 (0,134)	-0,008 (-0,27)	0,838*** (9,154)	-0,687 (-1,194)	1,405 (1,236)	0,533
LNOperProf	-3,275 (-1,855)	-0,008 (-0,271)	0,765*** (8,495)	0,932 (1,631)	0,697 (0,619)	0,543
LNBVDebt	-2,582 (-1,191)	-0,092** (-2,832)	1,118*** (9,26)	0,836 (0,088)	-3,861** (-0,189)	0,524
LNBVEquity	-0,422 (-0,77)	0,009 (1,197)	0,988*** (32,327)	-0,139 (-0,766)	-0,041 (-0,114)	0,92
EPS	21,147 (0,795)	0,424 (1,064)	4,052** (2,734)	-23,169** (-2,627)	15,82 (0,9)	0,127
MarCap	1,36 (0,622)	0,019 (0,609)	0,525*** (4,316)	0,576 (0,795)	2,567 (1,778)	0,239
TQ	-33,915 (-0,949)	0,517 (0,966)	-6,24** (-3,135)	26,473* (2,235)	30,741 (1,302)	0,067

OLS Estimate beta shown in cells above, t-values in parentheses
Variables excluded: OPR, LNIntAssets, ROA, ROCE, StockRet, Beta
*= p<0,05; ** = p<0,01; *** = p<0,001, N=150

Table 6. Nordic regression results, LNFixedPay as independent variable

Label	(constant)	LNFixedPay	LNBVAssets	LNBsize	RatioBInd	R^2
LNTotalRev	-0,289 (-0,416)	-0,036 (-1,335)	0,84*** (20,987)	0,726*** (3,176)	0,235 (0,518)	0,866
LNNetProfit	0,913 (0,537)	-0,151* (-2,465)	0,918*** (9,799)	-0,567 (-1,008)	1,847 (1,658)	0,548
LNOperProf	-2,804 (-1,625)	-0,145** (-2,312)	0,842*** (9,066)	1,09 (1,932)	1,186 (1,064)	0,569
LNBVEquity	-0,274 (-0,5)	0,0002 (0,012)	0,996*** (31,418)	-0,163 (-0,902)	-0,119 (-0,33)	0,92
EPS	23,464 (0,882)	0,665 (0,631)	4,086** (2,663)	-24,542** (-2,801)	10,576 (0,606)	0,123
MarCap	2,342 (1,023)	0,016 (0,185)	0,504*** (3,82)	0,432 (0,574)	2,071 (1,379)	0,218

OLS Estimate beta shown in cells above, t-values in parentheses
Variables excluded: OPR, LNIntAssets, LNBVDebt, ROA, ROCE, StockRet, Beta, TQ
*= p<0,05; ** = p<0,01; *** = p<0,001, N=150

Table 7. Nordic regression results, LNTotalPay as independent variable

Label	(constant)	LNTotalPay	LNBVAssets	LNBsize	RatioBInd	R^2
LNTotalRev	-0,228 (-0,328)	-0,041 (-1,555)	0,841*** (21,276)	0,736** (3,222)	0,225 (0,498)	0,867
LNNetProfit	0,792 (0,458)	-0,117 (-1,916)	0,894*** (9,577)	-0,566 (-0,995)	1,707 (1,524)	0,537
LNOperProf	-2,797 (-1,59)	-0,12 (-1,879)	0,826*** (8,882)	1,073 (1,889)	1,004 (0,9)	0,563
LNBVEquity	-0,471 (-0,858)	0,027 (1,282)	0,983*** (31,507)	-0,18 (-1,002)	-0,176 (-0,494)	0,928
EPS	20,208 (0,757)	1,055 (1,023)	3,923* (2,589)	-24,915 (-2,846)	10,139 (0,585)	0,127
MarCap	2,027 (0,882)	0,058 (0,658)	0,485*** (3,716)	0,403 (0,534)	1,992 (1,336)	0,22
TQ	0,075 (0,001)	3,015 (1,404)	-9,082** (-2,877)	17,954 (0,985)	2,385 (0,066)	0,06

OLS Estimate beta shown in cells above, t-values in parentheses
Variables excluded: OPR, LNIntAssets, LNBVDebt, ROA, ROCE, StockRet, Beta
*= p<0,05; ** = p<0,01; *** = p<0,001, N=150

In Table 4 the studied variable was RatioPerfPay. In the results we find that RatioPerPay is linked significantly with LNNetProfit, LNOperProf, ROCE and TQ. As the company size and proportion of CEO's performance-based pay to total pay increases, it has a significant link to the increase in operating profits, and finally net profits, but not in total revenue. Additionally, explanatory power for LNNetProfit and LNOperProfi is 0,572 and 0,568 respectively, thus neither variable in by itself explain The link between RatioPerfPay and ROCE may indicate that the ratio of performance pay from total CEO pay has a positive relationship with return on capital employed. Perhaps a Nordic CEO with performance pay components can more accurately either aid in revenue generation or manage existing assets in an efficient manner such that ROCE increases.

LNBVAssets as a control variable has statistically very significant links in nearly all variables except ROCE, where RatioPerfPay appears to explain movements in ROCE more than LNBVAssets.

Finally, there is a negative relationship between RatioPerfPay and Tobin's Q alongside a negative assets with Book Value of Assets. With R^2 of 0,079 the explanatory power is weak, but there is an indication that as book value of assets increases and performance pay ratio increases, Tobin's Q decreases.

Excluded variables were OPR, LNIntAssets, ROA, StockRet and Beta, which yielded no significant links.

Table 5 describes OLS regression results with LNPerfPay as independent variable. In it we find a significant negative link between LNPerfPay and LNBVDebt alongisde a link between LNBVAssets and LNBVDebt and a negative link between RatioBInd and LNBVDebt. The R^2 for this finding is 0,524. This suggests that as the company grows, and company board's independence is reduced, a rising value in Performance Pay may contribute to decreased debt. This could signify that in large companies with non-independent boards the directors may be more likely to reduce their leverage.

No other significant results between LNPerfPay and dependent variables were found. Also OPR, LNIntAssets, ROA, ROCE, StockRet and Beta were excluded entirely.

Table 6 shows regression between LNFixedPay and dependent variables. We find the size of fixed pay being negatively linked to both net profit and operating profit, suggesting that increased fixed pay alongside increasing company size may adversely impact profits, despite LNBVAssets increasing.

Excluded variables were OPR, LNIntAssets, LNBVDebt, ROA, ROCE, StockRet, Beta and TQ, as neither independent nor control variables had statistically significant findings.

Finally, measuring LNTotalPay in Table 7 there are no links between the pay variable and dependent variables, instead majority explanatory variable is LNBVAssets, which is a control variable.

Summarizing findings, the ratio of performance pay, regardless of actual size of pay, is positively linked with operating profit and net profit, however no significant market impact is found apart from Tobin's Q. Sizes of individual pay components may have an impact on some accounting measures, for example fixed pay size seems to negatively impact profit measures. Total CEO salary size appears to have no statistically significant impact in Nordic companies.

4.3 Case USA: Descriptive statistics

In Table 4. the descriptive statistics for USA data is displayed, with amount of data points, minimum, maximum, mean values and the range of given data, and standard deviation, skewness and kurtosis of the values. All data is in millions of dollars USD, except for earnings per share or ratios.

Average operating profit for companies was 1,87 Bil USD with a high standard deviation of 2718,83. High deviation suggests large dispersion in dataset, and high kurtosis of 11,95 suggests that many of the datapoints are clumped closer to the mean.

Average net profit for companies in the dataset was 1,318 Bil USD with a high standard deviation of 2718. At lowest the companies faced 6,126 Bil USD loss and at highest 1,5 Bil USD profits.

Highest return of assets was 25% in the USA sector, and lowest -15% with range 0,406. On average USA companies had a 9,7% return on assets.

At lowest U.S. companies had a -15% loss on assets and 25% at most. Average return on assets was 9,7%. Skewness was -0.9 and kurtosis was 3,5, suggesting normalized returns on assets.

Returns on Capital Employed had a considerable range. Mean return was -0,01% and standard deviation 1,9. While upper bound was 2,39% return on employed capital, the lower bound was -23%. Negative skewness of -11 and a very high kurtosis suggests that despite some companies in the dataset taking tremendous losses on invested capital, most companies have their return on capital closer to 0%

Average earnings per share was $2,95 USD with a minimun of -$6,66 USD and maximum of $10,39 USD. Skewness was 0,204 and kurtosis 1,175 indicating a roughly normally distributed EPS pattern.

Lowest annualized daily return for shares was -0,65% and highest 8,75%. On average US companies in the data set generated 0,31% daily returns. Positive skewness of 6,25 indicates that more data points are closer to the lower bounds than upper bounds.

Moving to descriptive statistics of compensation, lowest total compensation of a CEO was $0,398 Mil USD and highest $64 214Mil USD. On average the total compensation was $100 Mil USD

Mean beta for U.S. companies is 1,16 suggesting a slightly risky average – for each one-dollar development in market index, the companies in the dataset develop $1,16 movement up or down. Riskiest company having a 2,1 beta means their share price would react twice as strong to market developments.

Average Tobin's Q for U.S. companies was 14, suggesting extremely overvalued companies. Upper bound of 1179 and a standard deviation of 115 asserts that U.S. stocks seem to be perceived as more overvalued than shares in the Nordic market.

The ratio of performance-based components from total pay (Ratio of Performance Pay) was 0,04 at lowest, or 4% of the compensation was performance-based compensation. At highest 97% was performance-based. On average US executives in the dataset had 69% devoted to performance-based measures, which suggest to be in line with Frydman & Jenter's findings about high option component in CEO pay. A

skewness of -1,679 suggests that the distribution of performance ratio is closer to the upper bound, or higher performance-based pay ratio is more common.

Average performance pay component in U.S. companies is 6.6 Mil USD and average fixed pay value 1,62 Mil – positive skewness of 7 hints at most fixed pay datapoints landing closer to zero. On average total pay package for CEO's was 10 Bil USD.

On average, U.S. -based company boards had 12 board members, 7 at minimum and 21 at maximum. Compared to Nordic counterparts, U.S. boards tend to be smaller. The rate of board independence varied between 25% and 86%. On average, 72% of members in an average U.S. company board are outside directors.

Table 8. Case USA: Descriptive statistics

	range	min	max	mean	st.dev	skew	kurt
NetProfit	21359,000	-6126,000	15233,000	1318,658	2718,830	3,033	11,950
OperProf	20455,823	-357,823	20098,000	1877,620	3299,122	3,158	11,910
OPR	1,345	-0,176	1,168	0,137	0,126	4,041	30,763
ROA	0,406	-0,153	0,253	0,097	0,059	-0,965	3,569
ROCE	25,740	-23,348	2,392	-0,013	1,935	-11,904	144,651
EPS	17,050	-6,660	10,390	2,954	2,614	0,204	1,175
MarCap	870338	0	870338	25978	79057	8,630	88,700
StockRet	9,411	-0,660	8,751	0,314	1,009	6,254	44,071
Beta	1,707	0,396	2,103	1,164	0,320	0,415	0,074
TQ	1179	0	1179	14	115	9,087	84,350
PerfPay	23072000	33000	23105000	6673153	5231297	1,180	0,715
FixedPay	32461538	288462	32750000	1622418	3261075	7,223	60,708
TotalPay	63816180	398476	64214656	10091436	9288769	2,163	7,320
RatioPerf-Pay	0,931	0,044	0,975	0,698	0,175	-1,679	3,162
RatioBInd	0,617	0,250	0,867	0,721	0,115	-2,308	7,494
Bsize	14,000	7,000	21,000	11,620	3,197	1,105	1,294
BVAssets	717240,27	1,73	717242,00	37131,69	118591,040	4,812	22,807

N=150

Table 9: USA Pearson correlation results

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	Y1	Y2	Y3	Y4	Y5	Y6	Y7
X1	1	,920**	,984**	,205*	,652**	,763**	,915**	0,044	-0,003	,585**	,699**	-,367**	-0,093	-,44**	-0,115	,559**	,595**	,690**	,207*	-,174*	,948**
X2	,920**	1	,927**	-0,042	,564**	,717**	,889**	-0,053	0,024	,475**	,616**	-,385**	-0,09	-,38**	-0,113	,543**	,551**	,666**	,170*	-0,131	,948**
X3	,984**	,927**	1	,222**	,653**	,785**	,919**	0,04	-0,021	,554**	,701**	-,382**	-0,081	-,45**	-0,116	,567**	,609**	,697**	,215**	-0,117	,954**
X4	,205*	-0,042	,222**	1	,182*	,235**	,204*	,447**	-0,12	,307**	,220**	-0,031	0,023	-,22**	-0,073	0,113	0,148	0,155	0,033	-0,017	,161*
X5	,652**	,564**	,653**	,182*	1	,660**	,615**	0,009	-0,059	,366**	,516**	-0,114	-0,013	-,32**	0,008	,510**	,557**	,584**	0,017	-0,164	,663**
X6	,763**	,717**	,785**	,235**	,660**	1	,760**	-0,009	-0,058	,365**	,566**	-,273**	-0,013	-,40**	-0,113	,462**	,572**	,598**	0,051	-,170*	,794**
X7	,915**	,889**	,919**	,204*	,615**	,760**	1	-0,053	-0,017	,405**	,616**	-,381**	-0,1	-,38**	-0,109	,533**	,589**	,666**	,216**	-0,137	,950**
X8	0,044	-0,053	0,04	,447**	0,009	-0,009	-0,053	1	0,001	,497**	,202*	0,056	0,002	-,192*	0,034	0,102	0,011	0,102	0,017	-0,119	-0,102
X9	-0,003	0,024	-0,021	-0,12	-0,059	-0,058	-0,017	0,001	1	-0,112	-0,012	0,009	0,002	0,09	-0,112	-0,05	0,034	-0,029	-0,059	-0,045	-0,014
X10	,585**	,475**	,554**	,307**	,366**	,365**	,405**	,497**	-0,112	1	,495**	-0,041	-0,012	-,27**	-0,046	,453**	,377**	,537**	0,142	-0,157	,437**
X11	,699**	,616**	,701**	,220**	,516**	,566**	,616**	,202*	-0,012	,495**	1	0,085	0,047	-,42**	-0,04	,462**	,456**	,547**	0,115	-,161*	,642**
X12	-,367**	-,385**	-,382**	-0,031	-0,114	-,273**	-,381**	0,056	0,009	-0,041	0,085	1	-0,013	0,02	0,052	-0,051	-0,059	-0,082	-0,002	0,006	-,360**
X13	-0,093	-0,09	-0,081	0,023	-0,013	-0,013	-0,1	0,002	0,002	-0,012	0,047	-0,013	1	0,00	-0,065	-0,084	-0,058	-0,073	-0,098	0,078	-0,076
X14	-,440**	-,389**	-,456**	-,226**	-,32**	-,403**	-,388**	-,192*	0,092	-,275**	-,422**	0,029	0,003	1	0,045	-,249**	-,280**	-,328**	0,124	0,068	-,410**
Y1	-0,115	-0,113	-0,116	-0,073	0,008	-0,113	-0,109	0,034	-0,112	-0,046	-0,04	0,052	-0,065	0,045	1	,469**	0,01	0,094	-,165*	0,027	-0,117
Y2	,559**	,543**	,567**	0,113	,510**	,462**	,533**	0,102	-0,05	,453**	,462**	-0,051	-0,084	-,25**	,469**	1	,575**	,909**	0,132	-0,038	,561**
Y3	,595**	,551**	,609**	0,148	,557**	,572**	,589**	0,011	0,034	,377**	,456**	-0,059	-0,058	-,28**	0,01	,575**	1	,627**	0,086	-0,111	,592**
Y4	,690**	,666**	,697**	0,155	,584**	,598**	,666**	0,102	-0,029	,537**	,547**	-0,082	-0,073	-,33**	0,094	,909**	,627**	1	,223**	-0,059	,692**
Y5	,207*	,170*	,215**	0,033	0,017	0,051	,216**	0,017	-0,059	0,142	0,115	-0,002	-0,098	0,12	-,165*	0,132	0,086	,223**	1	0,13	,163*
Y6	-,174*	-0,131	-0,117	-0,017	-0,164	-,170*	-0,137	-0,119	-0,045	-0,157	-,161*	0,006	0,078	0,06	0,027	-0,038	-0,111	-0,059	0,13	1	-0,106
Y7	,948**	,948**	,954**	,161*	,663**	,794**	,950**	-0,102	-0,014	,437**	,642**	-,360**	-0,076	-,41**	-0,117	,561**	,592**	,692**	,163*	-0,106	1

Variables: X1 = LNNetProfit, X2=LNTotalRev, X3=LNOperProf, X4=OPR, X5=LNIntAssets, X6=LNBVDebt, X7=LNBVEquity, X8=ROA, X9=ROCE, X10=EPS, X11=LNMarCap, X12=TQ, X13=StockRet, X14=Beta, Y1=RatioPerfPay, Y2=LNPerfPay, Y3=LNFixedPay, Y4=LNTotalPay, Y5=LNBsize, Y6=RatioBInd, Y7=LNBVAssets

Significance levels: *=<0.05, **=<0.01, N=150

4.4 Case USA: OLS Regression results

Below are listed the OLS regression results for USA data with each independent variable separately. Tables 8 – 11 list independent variables in columns and dependent variables in rows. Intercept variable is always on first column, followed by a pay variable that is studied, and three control variables. Last column is the R^2 coefficient for a model of that particular row. As with Nordic data presentation, results with at least one significant variable $p<0.5$ are displayed in a table. If no significant results were found, the variables in the table were excluded. Excluded variables are mentioned below respective tables as "Excluded"

Table 10. USA regression results, RatioPerfPay as independent variable

Label	(constant)	RatioPerfPay	LNBVAssets	Bsize	RatioBInd	R^2
LNTotalRev	1,233*	0,011*	0,831***	0,132	-0,459	
	(2,321)	(0,045)	(34,876)	(0,796)	(-1,25)	0,9
LNNetProfit	-2,028**	0,021	0,917***	0,344	-1,211**	
	(-3,551)	(0,081)	(34,675)	(1,879)	(-3,022)	0,906
LNOperProf	-2,082***	0,064	0,893***	0,357*	-0,381	
	(-3,903)	(0,268)	(36,872)	(2,087)	(-1,016)	0,91
LNIntAssets	1,222	0,938	0,721***	-0,621	-1,011	
	(0,756)	(1,32)	(10,055)	(-1,243)	(-0,91)	0,459
LNBVDebt	0,354	-0,772	1,159***	-0,775	-1,79	
	(0,21)	(-1,023)	(15,374)	(-1,488)	(-1,558)	0,626
LNBVEquity	-0,212	0,202	0,828***	0,453	-0,625	
	(-0,407)	(0,796)	(35,661)	(2,791)	(-1,743)	0,908
EPS	-2,755	0,31	0,601***	0,964	-2,882	
	(-1,115)	(0,277)	(5,42)	(1,247)	(-1,687)	0,212
MarCap	3,411*	0,431	0,639***	0,226	-1,556	
	(2,333)	(0,041)	(9,738)	(0,496)	(-1,539)	0,423
TQ	172,696	13,269	-24,074***	30,166	-42,657	
	(1,518)	(0,257)	(-4,715)	(0,847)	(-0,542)	0,135

OLS Estimate beta shown in cells above, t-values in parentheses
Variables excluded: OPR, ROA, ROCE, StockRet, Beta
*= p<0,05; * = p<0,01; *** = p<0,001, N=150

Table 11. USA regression results, LNPerfPay as independent variable

Label	(constant)	LNPerfPay	LNBVAssets	Bsize	RatioBInd	R^2
LNTotalRev	0,947	0,024	0,823***	0,127	-0,462	
	(1,288)	(0,528)	(28,98)	(0,773)	(-1,26)	0,9
LNOperProf	-3,047***	0,085	0,864***	0,336	-0,393	
	(-4,161)	(1,835)	(30,472)	(0,051)	(-1,063)	0,916
LNIntAssets	-2,579	0,383*	0,588***	-0,747	-0,939	
	(-1,176)	(2,828)	(7,148)	(-1,541)	(-0,866)	0,484
LNBVDebt	-1,568	0,096	1,132***	-0,702	-1,831	
	(-0,677)	(0,656)	(12,623)	(-1,362)	(-1,591)	0,644
LNBVEquity	0,172	-0,016	0,832***	0,438*	-0,607	
	(0,236)	(-0,352)	(29,851)	(2,716)	(-1,691)	0,908
ROA	0	0,013	-0,008***	0,011	-0,073	
	(0,004)	(2,409)	(-2,605)	(0,564)	(-1,761)	0,068
EPS	-11,307***	0,741**	0,352*	0,81	-2,972	
	(-3,441)	(3,53)	(2,773)	(1,104)	(-1,813)	0,274
MarCap	0,786	0,255*	0,55***	0,139	-1,568	
	(0,392)	(1,995)	(7,12)	(0,312)	(-1,571)	0,436
Beta	1,421**	-0,011	-0,075***	0,244*	-0,011	
	(3,382)	(-0,445)	(-4,643)	(2,607)	(-0,053)	0,207
TQ	-96,595	23,645*	-32,04***	24,913	-45,33	
	(-0,624)	(2,391)	(-5,363)	(0,721)	(-0,587)	0,168

OLS Estimate beta shown in cells above, t-values in parentheses.
Variables excluded: OPR, ROA, ROCE, StockRet
*= p<0,05; * = p<0,01; *** = p<0,001, N=150

Table 12. USA regression results, LNFixedPay as independent variable

Label	(constant)	LNFixedPay	LNBVAssets	Bsize	RatioBInd	R^2
LNTotalRev	1,718 (1,705)	-0,039 (-0,534)	0,84*** (28,826)	0,13 (0,797)	-0,47 (-1,28)	0,9
LNNetProfit	-3,297** (-2,958)	0,106 (1,299)	0,893*** (27,702)	0,343 (1,907)	-1,176* (-2,949)	0,908
LNOperProf	-3,421*** (-3,296)	0,115 (1,519)	0,865*** (29,057)	0,352* (2,098)	-0,34 (-0,914)	0,915
LNIntAssets	-5,505 (-1,85)	0,62* (2,918)	0,56*** (6,454)	-0,635 (-1,312)	-0,744 (-0,687)	0,486
LNBVDebt	-8,043* (-2,598)	0,632* (2,8)	1,024*** (11,51)	-0,7 (-1,395)	-1,675 (-1,492)	0,662
LNBVEquity	0,747 (0,672)	-0,062 (-0,766)	0,841*** (28,316)	0,431* (2,677)	-0,633 (-1,76)	0,908
EPS	-10,39* (-2,243)	0,656 (1,943)	0,446** (3,334)	0,938 (1,243)	-2,672 (-1,582)	0,231
MarCap	0,351 (0,127)	0,288 (1,431)	0,569*** (7,121)	0,184 (0,41)	-1,447 (-1,437)	0,429
Beta	1,583* (2,751)	-0,025 (-0,601)	-0,073*** (-4,415)	0,242* (2,588)	-0,02 (-0,097)	0,2077
TQ	-282,64 (-1,336)	38,711* (2,511)	-33,12*** (-5,412)	29,155 (0,846)	-30,547 (-0,396)	0,171

OLS Estimate beta shown in cells above, t-values in parentheses.
Variables excluded: OPR, ROCE, StockRet, Beta
*= p<0,05; * = p<0,01; *** = p<0,001, N=150

Table 13. USA regression results, LNTotalPay as independent variable

Label	(constant)	LNTotalPay	LNBVAssets	Bsize	RatioBInd	R^2
LNTotalRev	0,918***	0,027	0,822***	0,12	-0,458	
	(1,016)	(0,422)	(25,451)	(0,724)	(-1,249)	0,9
LNNetProfit	-3,825***	0,153*	0,866***	0,279	-1,21**	
	(-3,984)	(2,22)	(25,007)	(1,553)	(-3,076)	0,91
LNOperProf	-3,625***	0,135*	0,847***	0,294	-0,376	
	(-4,026)	(2,092)	(26,473)	(1,745)	(-1,021)	0,916
LNIntAssets	-4,733	0,56**	0,526***	-0,883	-0,838	
	(-1,741)	(2,958)	(5,611)	(-1,813)	(-0,775)	0,487
LNBVDebt	-4,841	0,371	1,041***	-0,834	-1,815	
	(-1,719)	(1,853)	(10,407)	(-1,618)	(-1,594)	0,652
LNBVEquity	0,808	-0,068	0,849***	0,456*	-0,618**	
	(0,858)	(-1,019)	(26,24)	(2,817)	(-1,728)	0,809
ROA	-0,102	0,021**	-0,011**	0,004	-0,07	
	(-1,009)	(2,966)	(-3,149)	(0,217)	(-1,716)	0,086
EPS	-17,901***	1,301***	0,158	0,417	-2,846	
	(-4,554)	(4,619)	(1,128)	(0,578)	(-1,785)	0,312
MarCap	-0,941	0,402*	0,499***	0,022	-1,525	
	(-0,384)	(2,291)	(5,704)	(0,049)	(-1,535)	0,44
TQ	-295,274	40,532**	-37,885***	12,758	-41,326	
	(-1,57)	(3,006)	(-5,639)	(0,369)	(-0,541)	0,0185

OLS Estimate beta shown in cells above, t-values in parentheses.
Variables excluded: OPR, ROCE, StockRet, Beta
*= p<0,05; * = p<0,01; *** = p<0,001, N=150

In Table 10 we can see that RatioPerfPay is positively linked with LNTotalRev at p<0.05 level as LNBVAssets increases, however the relationship between LNBVAssets and LNTotalRev appears more significant than RatioPerfPay and LNTotalRev. This could suggest that as company size increases, and the company's director has performance-based payment structures, the performance-based pay may contribute positively to total revenue. No other significant links are found between the ratio of performance pay and any other measured variable.

Book Value of Assets had a very significant relationship with listed dependent variables, apart from Tobin's Q where a strong negative link was present. This suggests

that among US companies the amount of assets the company has strongly highlights their further profit-generation capabilities.

Secondarily we see Board Independence Ratio exhibiting a negative link with net profits. On the other hand, negative link between LNBVAssets and TQ may suggest that larger companies may tend to be more properly valued, or even undervalued in the market instead of being overvalued.

Operating Profit Rate, Return on Assets, Return on Capital Employed, Stock Return and Beta had no significant links to RatioPerfPay, therefore they were excluded.

In Table 11 we observe a weak positive link between LNPerfPay and LNIntAssets at $p<0.05$ significance. Additionally there is a link between LNPerfPay and Earnings Per Share at $p<0.01$ ands a weak positive link between LNBVAssets and EPS. This would suggest that the size of performance pay has more influence on EPS than book value of assets. However, as R^2 value is low, performance pay size by itself does not singularly explain the impact on EPS.

Between LNPerfPay and Market Capitalization there's a weak positive link as Book Value of Assets increase.

Last, LNPerfPay has a link between Tobin's Q as LNBVAssets decreases. This may indicate that as the size of a company increases and the company's CEO has increasing performance-based pay. This, however, makes no indication of the proportion of performance-based pay. Only indication is that as the size of performance pay increases and company size increases, the size of performance-based pay may positively impact Tobin's Q.

Variables for OPR, ROA, ROCE and Stock Return were excluded in Table 11.

In Table 12 we have the regression results measured with CEO fixed pay component as the independent variable. There is a positive link between LNFixedPay and LNIntAssets and a positive link between LNFixedPay and LNBVDebt. These values suggest that CEOs with increasing remuneration as a flat salary may influence CEO's readiness to take on more debt for the company.

There is also a positive link between LNFixedPay and TQ at $p<0.05$, while a link between TQ and LNBVAssets is negative, with R^2 of 0,171 Similarly to LNPerfPay above,

the increasing salary component separately, but not Performance Pay's proportion from Total Pay, may influence Tobin's Q positively; As a firm increases in size, Tobin's Q may be reduced, but CEO's fixed pay component may have an increasing effect on Tobin's Q.

Variables OPR, ROCE, StockRet and Beta were excluded from analysis as no significant links were found.

Table 13 measures the dependent variables against LNTotalPay; CEO's compensation package as a whole.

We observe positive links between LNFixedPay and LNNetProfit, LNOperProf, LNIntAssets, ROA, EPS, MarCap and TQ. In the USA it seems that CEO pay package in total has a measurable impact on revenue metrics, intangible assets and corporate and market returns. While explanatory power (R^2) for net profit and operating profit is >0.9, the R^2 for ROA, EPS and MarCap is 0,08, 0,312 and 0,44 respectively. Therefore movement in CEO pay or total assets do not comprehensively explain all variations.

In general we observe that among US companies the total size of CEO pay has positive links between multiple accounting metrics, at $p<0.5$.

Excluded were OPR, ROCE, StockRet and Beta.

In all 4 CEO pay regressions stock returns or beta had no significant links between any CEO pay variables.

4.5 Comparisons between Nordics and USA

Before comparing the regression results, an important comparison from descriptive statistics is that on average, the portion of performance pay in U.S. companies is higher than in Nordics. Additionally, in the dataset, every U.S. company had some kind of performance measures in their pay, while in the Nordics, all pay in some companies was fixed.

Comparing the results, we find that in the Nordic companies, the ratio of performance pay has influence on company profits after expenses, however in USA performance pay ratio has impact only in revenue.

USA performance pay packages seem to aid more in the intake of revenue whereas Nordic performance pay portions may aid in the internal processes. This is an interesting finding considering that, as found in descriptive statistics, USA companies favor having more performance-based measures in total compensation package than what Nordic companies have. Also, in Nordic companies' performance pay may have some influence in return of capital employed and a decreasing effect in Tobin's Q. Such link does not exist among U.S. companies.

The value of performance pay has a decreasing effect on company debt in Nordic companies depending on the size of the company and how independent their board is. Such debt-influencing link is not found in USA, where instead the size of performance pay affects the size of intangible assets, earnings per share, market capitalization and Tobin's Q.

If a CEO has more fixed pay in a Nordic company, it appears to have a reducing effect on profits. In USA, as fixed pay increases, there's a positive link with debt, intangible assets and Tobin's Q.

Finally in the size of CEO total compensation appears to have no effect on any measures, but in USA the size of CEO compensation seems to affect multiple metrics in US companies.

4.6 Results

In Nordic context, data analysis answers the research questions as follows:

H_1 is rejected and null hypothesis accepted, as CEO total pay exhibited no significant relationships in Nordic context (Table 7).

H_2: Null hypothesis is rejected as Table 4 showed positive relationships between performance pay ratio and three accounting metrics. This is not an indication of causation, as regression models do not comprehensively explain the relationship.

H_3 is rejected and null hypothesis accepted in Nordic context as performance pay ratio exhibited no relationships between key market metrics.

In USA context following conclusions will be made.

With H_1, null hypothesis is rejected as Table 13 shows positive links between CEO total pay and 4 key accounting metrics.

With H_2 null hypothesis is rejected as Table 10 exhibits a positive relationship between performance pay ratio and total revenue. We note that the relationship is not conclusive, and no other accounting metric had significant links. Perhaps more investigation in this area is necessary.

H_3: Null hypothesis is accepted in U.S. context and H3 rejected, as RatioPerfPay did not exhibit significant links between market metrics.

5 Discussion

Despite Nordics and USA being culturally different areas, Nordics being region of welfare states and USA being a capitalistic country, it is found that as ratio of performance pay compared to CEO's total pay increases in Nordic companies and U.S. companies, there is a positive relationship with firm performance, when firm size and governance characteristics are controlled.

In USA the link focuses to the accumulation of total revenue and in Nordics, the link is in accumulation of operating profit and net income. This suggests that agency theory-adjacent strategy of binding a portion of CEO pay to performance metrics may have favorable results from company accounting performance perspective.

At the same time, the total amount of compensation a CEO receives only has links in USA whereas Nordic companies CEO total compensation does not have links to performance. This may suggest that compensation is a driving power for CEO performance in USA, whereas Nordic CEOs may be incentivized by other measures that is not apparent from current data.

This research adds to the body of knowledge by highlighting cultural and ideological differences and similarities between two economic regions in executive compensation context.

5.1 Limitations and further research

The dataset in this research is limited to 6 years of data situated in between the aftermath of 2008 housing crisis and 2020 COVID-19 crisis. While the research gives an insight to the state of companies during one of the greatest market rallies in economic history, the research is limited sample size and possibly affected by manner in which samples where picked. Additionally, the performance pay measures were limited to fixed pay and performance pay in general, and in future more granular effects of performance pay measures could be considered. Furthermore, results may only explain characteristics relevant to last 10-20 years.

It must be outlined that in the results causation cannot be implied; we cannot claim that firm accounting performance is affected positively *because* CEO pay component has performance measures in it. Only thing that may be inferred is that a relationship exists.

Executive compensation is a highly contentious topic, and its popularity as a research subject is unlikely to dissipate. Hence the study of compensation structures across cultural borders will likely yield valuable information in the future, which is why it may be beneficial to continue studying cultural differences across the world.

There are multiple paths for further research. Sample data can be increased either by number of surveyed companies or number of years. Additionally, comparisons could be derived from another culturally distinct economic area and add to the network of comparisons. Ultimately the data of present research could be further divided into subsets and analysed for further insights.

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