The relationship between current financial slack resources and future CSR performance.

A quantitative study of public companies in the Nordic Markets

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**Abstract**

Companies are expected to be good corporate citizens and fulfil expectations of both shareholders and stakeholders. Depending on their corporate objectives, companies undertake different CSR activities using their preferred financial resources. The relationship between these two notions is interesting to investigate in the Nordic context since companies in this geographical area are the global leaders in sustainability. We formulate the following research question as:

*What is the relationship between financial slack and the CSR performance in Nordic countries?*

As such, the purpose of this thesis is to investigate the underpinnings of whether companies choose to allocate their financial slack resources towards improving performance of CSR, or so called value creation. Doing so, we investigate the relationship between financial slack resources and CSR score.

In adopting a regulatory position on the development of society, we conduct our research in accordance with the functionalist research paradigm, namely through commitment to the objectivist ontic and positivist epistemic research philosophies. We answer the research question using the deductive approach. Our research design is framed with an explanatory purpose relying on archival strategy to perform a quantitative study.

The theoretical underpinnings for analysis comes in the form of legitimacy theory, the institutional differences hypothesis, Resource-based theory, slack resources theory, stakeholder and shareholder theory. We use multiple linear regressions to analyse cross-sectional data for the period between 2005 and 2015 collected from Thomson Reuters DataStream.

Our result indicates that the relationship between financial slack and CSR performance in the following year is mixed with both positive and negative relationships being present. Our most important finding is a pattern indicating that during the year 2008 the relationship changed from being positive to negative. This implies that the more funds a company has at its discretion, the less likely it is for them to invest it in developing their CSR performance the following year. This could have severe negative implications on shareholders, stakeholders and society.

**Keywords:** CSR, ESG, legitimacy theory, institutional differences hypothesis, Resource-based view, slack resources theory, stakeholder theory, shareholder theory, agency theory, stewardship theory, Nordic countries
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List of Abbreviations
CEO - Chief Executive Officer
CFP - Corporate Financial Performance
CSP - Corporate Social Performance
CSR - Corporate Social Responsibility
ESG - Environmental, Social and Governmental
FCF - Free Cash Flow
Net PM - Net Profit Margin
ROA - Return on Assets
ROE - Return on Equity
IDH - Institutional Differences Hypothesis
CHAPTER 1. Introduction
This chapter reviews the background of the study, providing the reader with an introduction of how CSR and financial slack is perceived by companies and society in the contemporary business world. Moreover, the chapter provides an overview of existing theoretical and practical developments within the research field of CSR and financial slack. The identification of the knowledge gap in the research area is followed by formulating the problematization related to financial slack resources and CSR performance. This leads to the formulation of the research question that this study aims to answer, together with an outline of the link between the research question and the research purpose. Delimitations, ethical and social considerations associated with the topic of this study are presented at the end of the chapter. We conclude the first chapter with the disposition of the following chapters.

1.1. Background
Adam Smith identifies, in his Theory of Moral Sentiments, a normative core of responsibility and prescribes guidelines to act according to a specific set of manners namely prudence, temperance, civility, industriousness and honesty (Smith, 1759, cited in Semeniuk, 2012, p. 19). The notion of corporate responsibility is implied when reflecting on the relationship that exists between companies and society. In the current business world, it is reasonable to have concerns about companies not being inherently moral and this raises the importance of sustainable contracts between companies and society. According to a Global CEO survey conducted by PwC (2016, p. 13), 64% of the CEOs from more than 1400 companies across 83 countries consider corporate social responsibility (CSR) a part of their core business, rather than just a stand-alone program. Additionally, the same CEOs say that 45% of their investors will only be seeking ethical investments in the next 5 years (PwC, 2016, p. 13). Accordingly, there are existing signals of strategic importance of corporate social responsibility and positive movements towards sustainable investment trends.

1.1.1. Theoretical point of departure
"Morality consists in the set of rules, governing how people are to treat one another, that rational people will agree to accept, for their mutual benefit, on the condition that others follow those rules as well." (Rachels, 2003, pp. 150)

For a long time, the common approach of companies towards society was to obey the law, which resulted in undertaking only the minimum social responsibility (Friedman, 1970). Friedman (1962) states that the companies should focus all their activities and effort on profit seeking and to leave societal problems for governments and public institutions. Consistent with shareholder theory, Friedman (1962) takes the shareholder approach and states that it is only towards this group that companies must behave responsibly. In other words, companies should perform their activities on markets, and governments should provide these markets with stability, security and prosperity. Friedman’s most debated paper within the literature on social issues, The Social Responsibility of Business Is to Increase Its Profits, written in 1970, targets corporate social responsibility as pure socialism. Additionally, the paper states that only people can have moral responsibilities, by that he insinuates that companies cannot have moral responsibilities as they are not persons. It can be reasonably contended that companies are legal entities without moral responsibilities, but one cannot conclude that there are no social responsibilities at all. This is emphasized by social contract theory as already
indicated in the quote above by Rachels and The Elements of Moral Philosophy, written in 2003, where the notion of social contract is legitimized not only to the actions of the individual person, but to the activities of companies as well.

It is possible to see through the perspective of the legitimacy theory whether companies adapt to current trends within society. These trends are different through different national cultures, where globalization supports the spread of minimum standards necessary in every country, followed by culturally specific consistent norms. Creation and implementation of CSR can also be explained by the stakeholder theory. In the stakeholder model the driving force of CSR comes from stakeholders expressing their expectations to management, with the expectations constantly changing and evolving over the time (Carroll, 2004, p. 116). As such, companies are expected to be focused on both wealth creation and value creation which benefits society (Logsdon & Wood, 2002).

1.1.2. CSR & financial slack in the era of globalization
The possible implication of Princeton professor Peter Singer’s quote “How well we come through the era of globalization will depend on how we respond ethically to the idea that we live in one world” (2016, pp. 15) is that business success in the current and globalized world depends on the ethical principles practiced by companies towards stakeholders and shareholders. There is an increasing trend toward companies’ participation in activities that are and have been originally in scope of governments, and especially multinational corporations are more involved in areas including health, education, social security, protection of human rights, and in defining ethical codes (Cragg, 2005). Actions are also taken to fill global gaps in legal and moral issues by self-regulation (Scherer & Smid, 2000).

One of the effects of globalization is the challenge for corporate agents to effectively manage firm’s slack resources while minimizing the negative effects of globalization and maximizing the outcomes of available opportunities (The European Business and Management Conference, 2015, p. 118). The slack creates financial flexibility which is a great concern in managerial decision-making (Bancel & Mittoo, 2004). The study on the decisions concerning capital structure from a sample of European managers performed by Bancel and Mittoo (2004, p. 1) reveals that one of the most important determinants of such decisions is financial flexibility. This also highlights the fact that companies achieve higher flexibility with higher financial slack through allocating their slack resources, broadening the range of opportunities available to management. On the other hand, companies with lower levels of financial flexibility can have difficulties in responding advantageously to changes in stakeholder expectations or market conditions. The importance of financial slack and the flexibility it provides increases in times of economic downturn, for example during the financial crisis in 2008. As the period examined in this study covers the period before, during and after the crisis, it is of a high interest to see whether companies changed their allocation of slack in relation to CSR.

One impact of globalization on CSR is the so called regulation vacuum with multiple initiatives which can be undertaken in order to create new global governance, such as subscribing to UN Global Compact, better CSR reporting with Global Reporting Initiative (GRI) or Transparency International in the fight against corruption (Scherer & Palazzo, 2011, p. 28). Reporting on CSR is one of the current CSR concerns, with a lack
of sustainability accounting integrated into internal management processes, as was examined in a study of external reports of 100 large Australian and 100 British companies, resulting in the findings that only 23% of Australian and 32% of British companies incorporated CSR performance measures in their management systems (Adams & Frost, 2006, p. 34). Moreover, 85% of Australian and 54% of British companies failed to provide any information on future CSR performance targets (Adams & Frost, 2006, p. 34).

Failing to provide insight of incorporating the CSR information into the internal decision-making processes creates a problem of how companies adhere to current trends within society. As such, companies fail to provide insight into how they create the value for stakeholders and society. The potential benefits for companies to report on sustainability activities are to differentiate their position on the market compared to their competitors, the identification of gaps in operational management, higher value for investors, better operational efficiency and potential risk reduction (PwC, 2014, p. 1). Moreover, actors on financial markets, such as shareholders, investors and mainstream analysts show interest in sustainability information, asking for more transparency (Ernst & Young, 2013, p. 10).

There are numerous different methods to analyse the positive benefits of CSR on businesses and society, however there is no common and universal quantified measure of CSR-impact within corporate or research practice as of yet (Bleher et al., 2013, p. 2). For the purpose of this study we undertake a strategic departure of CSR and argue with support in the Resource-based view that allocation of slack resources towards CSR yields a certain competitive advantage (McWilliams & Siegel, 2011, p. 1484). In academia, the Resource-based view is a widely accepted theory explaining the sources of competitive advantage and argues that those sources are valuable, rare, inimitable, and non-substitutable (Barney, 1991, cited in McWilliams & Siegel, 2011, p. 1484).

1.1.3. Financial slack resources & Slack resources theory
Bourgeois (1981, p.30) defines an organizational slack as “that cushion of actual or potential resources which allows an organization to adapt successfully to internal pressures for adjustment or to external for change in policy as well as to initiate changes in strategy with respect to the external environment”. Since the organizational slack can have a variety of discretionary levels, for the purpose of this study is used the most discretionary level which is the financial slack (Sharfman et al., 1988, p. 602). The financial slack refers to the unabsorbed corporate resources such as cash, cash equivalents and receivables without commitment to any current purpose and is a highly flexible source of capital which can be invested into a wide range of activities (Sharfman et al., 1988, p. 602). In order to use the slack in connection with value creation, it is needed to specify the position of financial slack in a firm. Thompson (1967, cited in Sharfman et al., p. 603) states that one of the purposes of slack is the smoothing effect and the absorption of environmental fluctuations. Sharfman et al. (1988, p. 603) elaborates further, arguing that slack only comes in a physical form, protects a firm from internal fluctuations and creates a financial buffer to target specific needs in the future. The stated predictors of financial slack are the environmental conditions, characteristics of the organization and the values of surrounding communities (Sharfman, 1988, p. 604). In terms of market growth, one can argue that in growing and developed markets, there are higher absolute values of resources leading to higher values of slack.
Value creation occurs through the engagement in CSR, which is based on voluntarily invested financial slack into CSR activities. The slack is a resource generated from their business activities that can be invested into CSR which eventually creates value measured by CSR performance. Making the decision about how much of slack to be allocated is generally made based on a comparison between investment costs and benefits (Lev, 2005, p. 302). If the company cannot measure the benefit from an invested slack, or if the benefit is measured inappropriately, this can lead to misallocation of slack which threatens shareholders’ ownership value. However, financial slack provides the highest level of freedom in allocation to the alternative purposes in decision-making (Nohria & Gulati, 1996, cited in Kim at al., 2008, p. 405). Additionally, financial slack represents “the agency-theoretic concept of free cash flow and in turn allows for a more accurate test of agency-theoretic predictions” (Jensen, 1986, cited in Kim et al., 2008, p. 405). One can argue that higher organizational resources allow companies to undertake more activities such as R&D (Kim et al., 2008, p. 405) and the same argument can be applied to the new societal and environmental ideas and projects that require longer investment horizons and whose outcomes occur later in time and space (Bourgeois, 1981). There are various areas into which slack can be invested, meaning that the particular decision-making is individually based on corporate goals. Strategic managers face decisions on how to allocate on the competitive markets and within the environment that creates the pressures on companies (Waddock & Graves, 1997, p. 4). Prahalad and Hamel (1994, cited in Waddock & Graves, 1997, p. 4) argue that these pressures come rather from the social issues in management than the traditional concerns of strategic management. Moreover, they argue that influences on strategic decisions go beyond traditional industry-based competitive forces such as changing customer expectations, changes in regulation or environmental concerns (Prahalad & Hamel, 1994, cited in Waddock & Graves, 1997, p. 4).

Whether successful companies simply have more slack resources to invest into CSR and therefore attain a higher standard is a notion of slack resources theory. One can argue that better financial performance creates an opportunity to invest into areas such as community and employee-relations or the environment, in other words, the better social performance would result from an allocation of the slack resource. The empirical studies supporting this statement come from McGuire et al., (1988; 1990, cited in Waddock & Graves, 1997, p. 10). Additionally, a moderate amount of studies was undertaken to investigate what influence has corporate financial performance on CSR, or what are the ascendants of CSR. This direction is supported with slack resources theory as stated above, as such the theory is deeply rooted in the idea that “better financial performance potentially results in the availability of slack (financial and other) resources that provide the opportunity for companies to invest in social performance domains” (Waddock & Graves, 1997, p. 313). However, researchers cannot find a universal answer to whether doing well enables doing good. Doing well by doing good is a notion of whether profitability creates slack resources that can eventually be allocated to the CSR pool (Waddock & Graves, 1997). Research that use the slack resources theory to explain whether companies raise involvement in CSR using higher financial slack have mostly undertaken in developing countries, with findings such as higher available financial resources in Ghanaian companies lead to lower CSR (Julian & Ofori-Dankwa, 2013). In an examination of Nordic countries, we noted that they don’t face a similar financial capital context as in emerging countries; they understand the
value of CSR and have a great regulatory supervision and support to engage in CSR activities.

1.1.4. CSR in Nordic countries

Nordic countries are open economies, dependent on international markets and that increases the sensitivity of globalization for companies trading in this geographical area. In the Global competitiveness report from the World Economic Forum (2015), Sweden, Denmark, Finland and Norway are among top 12 most competitive economies in the world. This result shows the positive impact of the similar institutional framework used in the countries. The efficient and transparent institutional framework prominent in these countries impacts the innovation profile and educational system which in turn contribute to increased levels of corporate performance.

In the context of this study, we will refer to the Nordics as the following countries: Denmark, Sweden, Norway and Finland. When comparing the Environmental, Social and Governance (ESG) profiles of companies worldwide, Nordic countries are ranked among the top 10 by RobecoSAM in October 2016, with the first three positions taken by Norway, Sweden and Finland respectively and Denmark on the 8th position. Results from the RobecoSAM ranking are clearly underpinning the fact that Nordic countries are not only performing best in Europe, but are ESG leaders globally. Besides having some of the best ESG profiles worldwide, Sweden and Denmark exceeded all targets set for the EU 2020 strategy with Finland very close to the same result (European Commission, 2015, p. 5).

To assess the attitude of Nordic companies towards CSR, one must look at both national and business cultures. One of the first determinants of CSR is country profile, supported by the Institutional Difference Hypothesis, stating that there are institutional differences between developed and developing countries. It is therefore natural to assume that where we come from impacts the nature and implementation of our actions. Nordic countries are creating the right sustainable environment for their companies, allowing Nordic companies to complement the state and perform well in areas where the government fails to reach. The trend is to complement rather than duplicate governmental efforts. This can be seen in the better supply chain management which is outside the reach of local governmental policy when the companies are operating abroad. Other trends include better reporting and effective communication with stakeholders due to a long history of environmental policies and sustainable development in the Nordic society (RobecoSAM, 2013, p. 4). On the other hand, government involvement and regulations in economy, business responsibilities to society, safety at work, environmental externalities, and competition provisions explain why companies adhere more to regulation and control rather than to deregulation (Mullerat, 2013, p. 11). As examples, concerns and discussions regarding regulation and control, non-shareholder interest representatives with emphasis on employees, the local community, consumers and environmental interests are common in companies’ meetings (Mullerat, 2013, p. 11). We can assume that cooperation between Nordic governments and companies is well functioning because the division of roles between the state and the organizations have contributed to them being able to efficiently target social and environmental issues together. This provides a basis for companies’ clarification of where to invest their resources for CSR issues overall improvements.
1.2. Problematization

Our problematization concerns whether companies can create value by engaging in CSR activities and protect shareholder value by investing slack resources. In this study, problematizing is whether companies undertake CSR initiative in future based on their current financial resources that are uncommitted to further purposes. As such, value creation for society and value protection for shareholders are interesting from the theoretical point of view of legitimacy and shareholder theory, but also in investigating of what drive CSR in a firm.

On a European level, the EU's 2020 strategy on smart, sustainable and inclusive growth creates a framework for better adaptation to long-term challenges including globalization or pressures on resource efficiency, in order to achieve economic and social progress (European Commission, 2011, p. 3). Whether high country sustainability of Nordic countries, as mentioned above, fosters high corporate social performance was examined by RobecoSAM (2013, p. 2 - 3). The participation in the RobecoSAM (2013) study shows that the participation of Nordic companies was 16% higher than the average participation. This shows the level of importance assigned to the accessibility of data pertaining to sustainability and to sustainability as a concept by organizations in the Nordic countries. Comparing participating companies from all over the world showed that Nordic companies outperformed the global average in categories such as climate strategy, supply chain management, environmental reporting and social reporting. However, they underperformed in areas such as innovation, corporate governance, talent attraction and retention (RobecoSAM, 2013, p. 3).

As such, it is in our interest to examine how the above phenomenon influences companies and their decisions towards CSR. Focusing on the relationship between financial slack and CSR performance, it is important to investigate whether companies can adapt to the challenges of globalization, financial constraints and pressures on resource efficiency and achieve social progress. It is natural to assume that where companies come from impacts the nature and implementation of CSR actions. As such, focusing on Nordic companies which are established in the most sustainable region in the world, it is of high interest to see whether these companies achieve their high CSR performances from their excess financial resources, or whether CSR is rather deeply embedded into their core business strategies. In the latter, companies do not wait until they achieve a slack in their financial resources and after that undertake CSR initiatives. Instead, such investments derive from the same source as for example advertising or R&D expenses. We assume that a company scoring high on an independent ranking list issued in the present, must have implemented the strategy and invested into CSR in the past. Therefore, current financial slack can play an important role in future social performance ratio. A company scoring low on ranking can be explained by the company’s prior weak CSR activities and prior little investments allocated to this matter.

1.3. Research Question

In later years, not much research has been undertaken on how ex-post financial slack resources impact the social performance of the company. Many theoretical perspectives have been assumed in combination with each-other for the purpose of mapping their connections. Over time, CSR performance and resource allocation towards it have become more accepted and a common practice for companies. Research has shown that CSR could be crucial in intertemporal profit maximization, shifting focus from the
short, to medium and long-term investment horizons (Bénabou & Tirole, 2010, p. 13). Despite the more accepted status, and intense research in the field, not all companies choose to undertake in CSR. This realization lends itself to a heap of follow-up questions such as why do some companies choose to invest in CSR, what financial variables are considered to be important predictors, or if companies will choose to invest in CSR in the future to increase their social performance. We have chosen to narrow our research to the investigation of the financial patterns, finding the relationship between financial slack and CSR performance for public companies in Nordic countries. We assume that when companies allocate their resources to CSR activities, this increases the value they created by CSR, followed by an increase in their CSR performance. Thus, the research question we aim to answer in this thesis is:

- What is the relationship between current financial slack and the future CSR performance in Nordic countries?

1.4. Research Purpose

With an increasing corporate engagement and performance in socially responsible activities, the concern is on how companies finance such activities. Companies, as the agents of social value creation, need capital for both the business survival and discretionary activities. The purpose of this thesis is to investigate the underpinnings of whether companies choose to allocate their most discretionary resources towards improving performance of CSR, or so-called value creation. In doing so, we aim to research the relationship between several variables used as proxies for financial slack resources and CSR performance. This includes investigating and analysing patterns of the relationships found within the researched period through the lens of several well-known theories.

Our purpose is different from most of the existing empirical studies on CSR as the thesis considers the firm level financial antecedents of social performance. We research the financial factors that might predict engagement in CSR. This makes the purpose special in that other models often focus only on consequences of CSR.

1.5. Theoretical contribution

In this study, we will take aforementioned issues in current research field into consideration while trying to avoid mistakes made in research undertaken by previous scholars. To the authors’ knowledge, there is no academic research that has investigated the same or similar correlations in the chosen geographical area. Firstly, the contribution of this study lies in chosen parameters avoiding common mistakes from existing empirical studies. Secondly, in the chosen geographical area, where national CSR is outperforming global CSR performance. Lastly, examining time relations in a way that current financial slack and future social performance is considered. Shareholders, investors and mainstream analysts seek a modest understanding of what determines the CSR success of Nordic companies and this study will contribute to explain to these actors whether financial slack is one of the questioned determinants.

The impact of financial performance on social performance is most commonly researched by scholars, and to date, the majority of studies found positive and significant relationships, however the link between these two notions is perceived as bilateral and simultaneous, with possible methodological weaknesses. Since previous researches cannot find a common ground to build upon and this lack of agreement on
the established CSR link can lead to difficulties for companies when they allocate their cash to socially responsible activities, our theoretical contribution is to use Resource-based view of a firm to extend literature on stakeholder’s and shareholder’s theory. Besides the Resource-based view, we extend existing literature of slack resources theory with investigating whether Nordic companies spend their financial slack on CSR.

Given that the institutional difference hypothesis (IDH) in connection with CSR has been mostly theoretical and conceptual (Campbell, 2007); we broaden this area by providing an empirical research in the area of the Nordics. This study further broadens the notion of CSR by providing an insight into institutionally stable national and corporate social responsibility in context of Nordics. Therefore, the aim of this study is to examine whether there is an existing relationship between financial slack and CSR performance rather than which other variables drive CSR. Doing so, we will contribute to the gap in existing literature and empirical studies with findings from Nordic countries.

1.6. Delimitations
In this subgroup delimitations are mentioned as they are a natural part of every research project with no exception for this study. As mentioned above, the aim of this study is to investigate the underpinnings of whether companies are allocating their uncommitted financial slack resources towards improving the performance of CSR. Moreover, in this regard the aim is to examine whether a relation exists between current financial slack and future CSR performance reviewing a 10-year time period in the Nordic context. As such, there is no investigation of current financial resources and current CSR performance. Due to lack of time, it is not attainable to investigate the relation among different industries and countries in Nordic context. Moreover, this study does not aim to examine differences in prevailing relationship between Nordic countries themselves. The study will neither investigate what other sources of capital are used nor to survey managers about their decision making towards the CSR investments.

1.7. Ethical and social considerations

“The company is a system that is open to the environment, governed by persons who live in specific contexts and are the bearers, in their performance of the function of corporate governance, of the aspirations, culture and morality that characterise them, because they are part of a society that hopes for or conceals these values, and expresses them more or less strongly and consciously.” (Cavalieri, 2007, p. 24)

As might be already seen from the topic of this study, there is a great involvement of ethical, social and also environmental means. With CSR increasing the benefits for companies and its positive impact on society, it is necessary to cover the ethical and social aspects around the topic of this study. Cavalieri (2007, p. 24) states that the ethics established in companies consists of the same factors as the ethics in socio-economic context in which they operate. The increase in ethicality of corporate behaviour is driven by globalisation and networked economy based on coordinated management of knowledge. In other words, this change is being implemented from both inside and outside of companies.
European Commission (2017) identifies corporate social responsibility as the responsibility of companies for their impact on society. Such responsibility includes besides business responsibility, the ethics and social responsibility as well. According to this, it is logical to assume that the companies are responsible for society in which they operate. In order to use the success of companies and create progress for society, companies should not limit themselves in incorporating the business activities in their own value chain a way that does not harm society and also by seeking the investment opportunities that produce benefits for society (Cavalieri, 2007, p. 30).

Many scholars and professionals ask the same question in relation of finance and society: “What is the role of finance in good society?” (Shiller, 2013, pp. 2). Shiller (2013, pp. 6) argues that finance is the science of a goal architecture, where finance serves as the tool in achieving both business and societal goals. He also states that finance should meet the good society. This approach is consistent with the approach of Porter (2006, p. 84), which he calls shared value. In the shared value model, companies create both economic value for shareholders and social value for stakeholders.

This approach is widely accepted as the right interaction between companies and its environment. On the other hand, the other view is that CSR is perceived as a cost and thus a value destroying tool for companies’ shareholders, and that the only purpose of companies should be wealth maximization for shareholders. It is natural that every theorem face criticism, however there are currently more evidences of CSR carrying a value for society, business, and subsequently for shareholders. It seems crucial to study the impact of available financial resources on CSR performance due to the fact that financial resources play an important role in all business and non-business activities; furthermore, these resources might be a key driver of decision making towards CSR. In other words, the contradiction between companies profit and ethical incentives can cause a strong profit desire to overcome ethics when making decisions.

By studying this issue, the thesis can indicate whether availability of financial resources is what drives CSR value creation. Such findings may further the discussion to what extent value creation for society is dependent on available financial resources in both developed and developing countries. Another discussion point could be focused on which other financial factors are driving CSR performance.

1.8. Disposition
Chapter 1: Introduction
The first chapter lays the foundation of this study, explaining the background of chosen topic and providing an overview of existing theoretical and practical developments within the research field. This is followed by an identification of the knowledge gap in the research area and formulating the problematization, which further leads to the formulation of the research purpose and research question. The chapter ends with discussions on delimitations, theoretical and practical contributions together with social and ethical considerations.

Chapter 2: Methodology
The second chapter delves into methodology that relates to particular philosophical values that serve as the basis for this research. It is presented before the theoretical framework and empirical method due to the chapter describing the positions and assumptions made regarding the scientific aspect of this study. The notion and
framework of the “Research onion” was adopted in order to aid in the presentation of the major research philosophies, approaches, strategies, choices, time horizons, techniques and procedures used in collecting and analysing the data. The framework sets these aspects in relation to each other, elaborates on their relevancy to this study and the way we seek to answer the chosen research question. The chapter ends with a discussion on social and ethical considerations pertaining to the research as well as the choice and criticism of used literature.

Chapter 3: Theoretical Framework
The third chapter establishes the theoretical framework which is intended to familiarize the reader with relevant theories required to understand the theoretical underpinnings of this study. This chapter is divided into three main sections, each focusing on a certain area. The first section starts with both the definition and case of CSR. The chapter continues to provide a theoretical base of the societal context in terms of the prevailing relationship between society and companies influencing what resources are allocated into CSR. The section ends with an introduction to the state of CSR within Nordic countries. The second section covers theories on the decision-making process of allocating resources towards better CSR performance. Lastly, theories on different actors potentially influenced by resource allocation and/or CSR performance are introduced.

Chapter 4: Empirical Method
The chapter four details the process involved in obtaining the results sought after to answer the research question. The chapter contains information on the population, the creation of the sample, an introduction to the method of multiple linear regression and the assumptions associated with it. Furthermore, we justify the choice of variables used in the specific models and detail the specific actions taken in processing the data. The chapter concludes with a discussion on social and ethical considerations accompanied by an evaluation of the data-source used and criticism of the literature used.

Chapter 5: Results
The fifth chapter presents the results of the statistical procedures performed, starting with descriptive statistics, continuing to present the results from the individual models and concluding with a discussion on social and ethical considerations.

Chapter 6: Analysis
The chapter six elaborates on the results presented in the previous chapter, compares them to previous research in the field, analyses and discusses the results in connection with previous research and the theoretical framework we have chosen as foundation to undertake this study. Social and ethical considerations are discussed; furthermore, the chapter also includes a presentation on statistical issues and their potential consequences for this study.

Chapter 7: Conclusions
The chapter seven concludes the thesis and provide suggestions for future research to be conducted based on the results, analysis and discussion provided in the thesis. Theoretical and practical contributions are presented. The thesis concludes with social and ethical considerations as well as the credibility of the research being discussed.
Appendix
The appendix presents selected output from each individual model used in the thesis, including formulas, tables and figures.
CHAPTER 2. Research Methodology

This chapter lays the methodological foundation upon which we undertake our research. We start by discussing the role of research philosophy in general from which we move to explain our Sociological, Ontological, Epistemological and Axiological assumptions. Based on the assumption that society develops under regulatory forms through rationality, the objectivist ontic stance, positivist epistemic position and that science undertaken shall be value free, the positions taken in these four areas are combined to define the overarching functionalist research paradigm under which we undertake our research. In addition, we describe our reasons for choosing a deductive research approach. We explain in detail the underpinnings of the specific choices we have made in constructing the appropriate research design. This includes our arguments for choosing an explanatory purpose and using archival strategy to do research using quantitative techniques on a cross-sectional basis. The chapter concludes with a discussion on the possible ethical and societal implications which requires attention.

2.1. Choice of Topic and Preconceptions

When choosing a topic of this thesis, the authors were influenced by content in courses from the major in finance, accounting and management, experiences gathered while working in companies placing a great importance on society and the environment, and by the current corporate efforts to integrate CSR into their business culture. At the same time, there are nowadays numerous concerns about corporate social performances among companies, which create a need to target CSR from several sides. The authors can clearly see that CSR is one of the aspects that is beneficial not only for a company itself but also for the whole society and environment.

In the process of reviewing the existing literature, the authors identified the main aspects of their thesis, the financial slack and corporate social performance. One of the drivers, which is profitability, might create the monetary support to promote sustainability activities and incorporate them into their corporate culture. In combining all mentioned above, the authors gradually created an interest in sustainability in connection with corporate world and decided to further investigate the current literature on this phenomenon.

Uncommitted available resources can be invested into CSR, and improve the performance score. This area is not widely examined, and to the authors knowledge there is no other research examining such relationship in Europe, or in the Nordic context. Therefore, we decided to investigate the issue within Nordic countries. Due to the fact that Nordic countries are shown to perform as the best on existing CSR rankings for the last several years, we assume that companies operating in such national context must adopt the moral manners as well and therefore it would be interesting to see whether good financial health is what drives high CSR scores.

As mentioned above, besides majoring in finance, accounting and management, the authors have professional experiences from tasks on financial and managerial levels at international companies reaching high scores of CSR. At the same time, the popularity of sustainability issues, and the appearance of this topic in news is considered to be influential towards knowledge about the topic. These are sources of the author’s knowledge about this topic. Regarding the preconceptions, it is necessary to ensure that
no bias occurs and therefore remaining objective through the whole research undertaken.

2.2. Perspective of the Thesis
This study primarily takes the perspective of shareholders and stakeholders. From the shareholders’ perspective, focus is on whether improvements in CSR performance are financed by financial slack rather than by an operational capital, so called value protection. Naturally, not only existing shareholders are likely to be interested in the results of this study. Investors and other actors on financial markets can potentially include such outcome into their investment decision making. On the other hand, the stakeholders’ perspective is present in this study as well. Even though, this is a very broad group of individuals surrounding the companies, their common concern is on the societal and environmental value protection. Therefore, their stand is on whether companies have the underpinnings of CSR with deep or narrow presence in their corporate strategy. Differences between the shareholder and stakeholder perspectives lie in the fact that shareholders are interested in how companies use their corporate financial means, while stakeholders are interested in overall improvements of CSR performance with no interest on what their preferred choice of funding is.

2.3. On Research Philosophy
To study the research question stated in the introduction of our thesis, we need to commit ourselves to certain philosophical values; these will serve as the basis for how we do research (Holden & Lynch, 2004, p. 2). We will go through this chapter much in accordance with the framework referred to as the “Research onion” (Saunders et al., 2009, pp. 108). The research onion depicts and puts the major research philosophies, approaches, strategies, choices, time horizons and finally the techniques and procedures used in collecting and analysing data in relation with each other. Whichever outer layer of the onion is chosen will impact the suitability of the choices available to the researchers in the inner layers (Holden & Lynch, 2004, p. 5). It serves as a checklist of where to start the discussion of the chosen methodological standpoint (Saunders et al., 2009, pp. 106). The reasoning behind carefully choosing methodological assumptions is the impact on how the research undertaken will be performed, analysed, discussed and subsequently added to the collective knowledge of humanity, a potent force propelling us forwards (Saunders et al., 2009, pp. 108). Choosing a methodology which is inconsistent with the framing of the research question can produce erroneous and spurious results, lowering the actual and perceived professionalism of the researcher (Holden & Lynch, 2004, p. 18). Furthermore, it allows other researchers to scrutinise the suitability of other studies on a methodological basis.

2.3.1. Sociological assumptions - Regulatory
According to Holden and Lynch (2004, p. 3), as a researcher, it is necessary to form a standpoint on two different subjects. The first being the nature of society, why and how it progresses and the second one is the nature of science. As researchers, we position ourselves on the regulatory side of a spectrum ranging from regulatory to radical change. By doing this we assume that society has progressed and continue to progress and evolve through human rationality, together as a cohesive, unified whole. Radical change takes a more extreme position in which society develops through struggle, a continuing fight to free ourselves from societal structures (Burrell & Morgan, 1979, in Holden & Lynch, 2004, p. 3). This impacts our study in the way that through the ages, humanity has come together to build the future as it is the present today. Likewise,
researchers of today come together to create the present of future generations. Given that we intend to study the relationship between Corporate Social Responsibility and Slack resources, we can assume that evolutions in the subject are occurring because of rational thought. Furthermore, rationality has been an underpinning of most business research (Holden & Lynch, 2004, p. 4). Below we continue to our position on science.

2.3.2. Ontological assumptions - Objectivism
Our discussion on science and research methodology starts with clarifying our ontological assumptions, this aims to present and explain our view on reality and the world (Saunders et al., 2009, pp. 108). Ontology delves into the ancient question of whether the world exists, or is simply the product of the thinking mind (Burrell & Morgan, 1979, in Holden & Lynch, 2004, p. 5). This frames the discussion on ontological viewpoints in realist and idealist terms (Ryan et al., 2002, p. 13), which in Holden and Lynch (2004, p. 6) is termed realist and nominalist, the latter being the rejection of either or both abstract objects and universals (Rodriguez-Pereyra, 2002, cited in Stanford Encyclopedia of Philosophy, 2015). We have chosen to adopt the ontological position of objectivism for this thesis.

In choosing objectivism as our ontological standpoint it entails that we assume that social phenomena are external to the actors experiencing them (Saunders et al., 2009, pp. 110). We also assume that the world existed long before humanity wandered upon it; hence we see the world as an empirical entity which exists no matter what the human consciousness conceives of it, nor what our sensory organs perceive of it (Holden & Lynch, 2004, p. 7). In this sense, we take a realist ontological viewpoint, indicative of the objectivist position.

Holden and Lynch (2004, p. 6) describe a range, with the objectivist realist viewpoint and the subjectivist nominalist viewpoint being two extremes between which there is a continuum of possible standpoints. They state that it is rare for researchers to assume extremist positions as their ontological position (Holden & Lynch, 2004, p. 7). Thus, research undertaken in the subject of business tends to take a more moderate objectivist position (Holden & Lynch, 2004, p. 7). In this research, we will adhere to the examples set by previous researchers in choosing a moderate objectivist ontological position in which we choose to see the world according to “Reality as a contextual field of information” (Holden & Lynch, 2004, p. 6). If we were to move one step further towards extreme objectivism, we would see the world in terms of “Reality as a concrete process” which we interpret as being more closely related to the natural sciences in which objectivism has its roots.

2.3.3. Epistemological assumptions - Positivism
Epistemology deals with the question of the nature of knowledge, where it comes from and which requirements should be fulfilled for knowledge to be credible (Hughes & Sharrock, 1997, in Holden & Lynch, 2004, p. 5). Questions treated in epistemology and ontology date back to two famous philosophers in ancient Greece. Plato’s rationalism, postulated that knowledge, or justified true belief, can be obtained a priori without having perceived the object in question. Aristotle’s empiricism on the other hand, focused on observation and categorization (Ryan et al., 2002, p. 11, 12). These schools of thought have served as the starting point for discussions leading on for centuries, developing new and rivalling theories as time passed.
Since we have chosen the objectivist ontological position, it follows that a positivist epistemological position is suitable for the purposes of this thesis (Holden & Lynch, 2004, p. 6). Being rooted in the natural sciences, the positivist epistemological position postulates that knowledge is obtained from phenomena which are observable (Saunders et al., 2009, pp. 113). The ability to observe whatever is being researched is crucial since it is only through observable phenomena that we can find credible data suitable for analysis (Saunders et al., 2009, pp. 113, 119), measure the data (Gill & Johnson, 1997, in Holden & Lynch, 2004, p. 7) and find law-like generalisations to explain relationships and causal effects (Holden & Lynch, 2004, p. 9; Remenyi et al., 1998, cited in Saunders et al., 2009, p. 113; Saunders et al., 2009, pp. 119). With focus being put on the observability of observations and phenomena, any metaphysical properties, subjective or intangible, brought forward to serve as foundation for empirical research are considered meaningless and discarded for not being able to provide knowledge (Giddens, 1976; Morgan & Smircich, 1980, cited in Holden & Lynch, 2004, p. 7).

Positivism, as other epistemological philosophies, has implications for the research undertaken. Among these implications are the operationalization of variables used in a reductionist fashion to provide generalizability of the causal effects, found through the creation and testing of hypotheses based on the results of previous studies and existing theory (Holden & Lynch, 2004, p. 9). The hypotheses then play a part in furthering science when they are then subjected to tests which either prove or refute the applicability of the theory to the observations made (Saunders et al., 2009, pp. 113; Holden & Lynch, 2004, p. 9).

Like in the case with ontology, there is a continuum of more modest standings between the extreme versions of the objectivist positivist and subjectivist anti-positivist viewpoints which researchers can adhere to. For this thesis, we will build our epistemological view based on the assumption made in ontology where we explained that we see “Reality as a contextual field of information”. Therefore, our modest positivist epistemological position is that we need “To map contexts” to be able to answer our research question and thus obtain the knowledge we seek (Holden & Lynch, 2004, p. 6).

2.3.4. Axiological assumptions - Value free
In having taken the positivist epistemic position, we as the authors of this thesis should strive to be independent (Holden & Lynch, 2004, p. 9). This means that research is done without any influence by the observers in any way, including not letting personal beliefs or interest impact the choice of the method employed (Holden & Lynch, 2004, p. 9, 10). Because of our independence, we could argue that the research we undertake would be “Value-free” (Saunders et al., 2009, pp. 119) if we relied solely on objective criteria in the choice of subject and method (Holden & Lynch, 2004, p. 9). In our case, where we research as part of the completion of a thesis, it is not possible to argue that our research will be entirely value-free since we have actively chosen the subject of the research question. However, apart from choosing the subject for our study, we will strive to remain objective (Saunders et al., 2009, pp. 119).

2.3.5. Research paradigm - Functionalist
To bring our assumptions on society and science together we use the paradigm framework developed by Burrell and Morgan (1982, cited in Saunders et al., 2009, pp. 120). The framework is built on the axis explained in this chapter, the radical
change/regulation view on society and the subjectivist/objectivist views on science (Saunders et al., 2009, pp. 120). Burrell and Morgan (1982, cited in Saunders et al., 2009, pp. 120) used the paradigms to present a framework with the goal that it would facilitate the explanation and understanding of assumptions made by researchers as they could use it as a guide for their undertaking (Saunders et al., 2009, pp. 120). Given the explanation of our choices in the sections above, this thesis is created in accordance with the functionalist paradigm which is established when crossing a regulatory view of societal development processes with an objectivist view on science. This paradigm is the most commonly used in business research (Saunders et al., 2009, pp. 120), this knowledge provides confidence that our methodological assumptions are indeed suitable for the research we undertake.

2.4. Research approach - Deductive
In having committed ourselves to the objectivist view, entailing realist ontic and positivist epistemic assumptions, there is a consensus that the appropriate way to approach theory in the subject is to adopt a deductive approach (Saunders et al., 2009, pp. 124). The main goal of the deductive approach is to be able to find causal effects between variables (Saunders et al., 2009, pp. 125; Holden & Lynch, 2004, p. 9). Robson (2002, in Saunders et al., 2009, pp. 124, 125) describes the procedure of the deductive approach in five stages. Several features present in the five stages of the deductive approach have already been mentioned as implications of the positivist epistemology above. The first stage of the deductive approach entails that we study existing literature and create hypotheses based on the findings and theory. The hypotheses need to be framed and formulated to allow for subjecting the hypotheses to rigorous testing to verify its properties. The second stage involves operationalizing the variables necessary to the testing, this allows for the transformation of variables to allow them to be measured and tested using quantitative methods. When researchers operationalize variables, they use reductionism to simplify complex phenomena into more understandable and testable elements (Saunders et al., 2009, pp. 125). In the third stage the testing is undertaken and the results are analysed in the fourth stage. Depending on whether the outcomes of the tests were favourable or not, the fifth stage concludes the procedure by modifying the theory in accordance with the new findings (Saunders et al., 2009, pp. 125). There are other characteristics of the deductive approach, such as the collection of ample samples of quantitative data with the inclusion of controls to increase validity (Saunders et al., 2009, pp. 125, 127), and using a structured methodology to allow for easy replication which increases reliability (Saunders et al., 2009, pp. 125).

2.5. Research Design
In this part, we describe aspects of our research design in more detail. We take care to compare the suitability of the choices available when possible. The research design builds on our choices on research philosophy and are suited to fit the purpose of answering the research question presented in chapter one.

2.5.1. Purpose - Explanatory
When undertaking research there are three major purposes to choose from, the studies are either performed with the intention to explore, describe or explain. The exploratory purpose aims to identify, clarify and understand new areas within which research can take place (Saunders et al., 2009, pp. 139). Exploratory research is flexible and versatile yet does not pursue investigation without direction as the researchers move from
broader spectrums to more focused research areas (Saunders et al., 2009, pp. 140). Robson (2002, cited in Saunders et al., 2009, pp. 140) frames the purpose of a descriptive research as to accurately provide the reader with characteristics and a portrait of persons, events and situations. Though accuracy is a very good trait in certain situations, the descriptive study does not attempt to analyse the data to find potential relationships between whatever has been studied (Saunders et al., 2009, pp. 140).

For this thesis, we will use the third option, the explanatory purpose, whose focus lies in observing a situation or context and from there try to explain the relationships between the variables (Saunders et al., 2009, pp. 140, 141). Explaining the relationships observed within contexts is a perfect fit with our ontic and epistemic positions. The fulfilled prerequisites for choosing this purpose is made clear from the phrasing of our research question, in that we want to investigate the relationships between a CSR-score variable and variables introduced as a measure of slack resources.

2.5.2. Strategy - Archival
Among the several options available as research strategies, this thesis will adopt the archival research strategy. This entails that we will collect our data from sources providing administrative records (Saunders et al., 2009, pp. 150). Because these documents disclosing the data we seek were not initially created to serve that purpose, we will be analysing secondary data (Saunders et al., 2009, pp. 150). The advantage of using the archival strategy to study our research question is that we can use and analyse data created over time (Saunders et al., 2009, pp. 150) and since the data is often supplied or sourced by organisations without financial incentives to alter the data, it facilitates researcher objectivity and independence. The documents or data are part of the daily operations of the administrative entity responsible for its creation (Hakim, 2000, in Saunders et al., 2009, p. 150), in so being, they are part of the reality of the subjects we study (Saunders et al., 2009, pp. 150). However, there are disadvantages which could impact the research process. The risk of being denied access to the information in question is one such disadvantage, whether it is because the data is in some way restricted or of a confidential nature (Saunders et al., 2009, pp. 150).

2.5.3. Method choice - Quantitative
Up to this point, we have argued that because of the nature of our research question, it would be prudent to attack the question from an objectivist position with the underlying view that societal progress is made under regulative and rational forms. We have presented our philosophical choices and to a certain extent explored the implications we expect to be part of our research. This study will be archival in nature with the purpose of explaining causal relationships between variables using a positivist epistemic view as to what constitutes knowledge while relying on a realist ontic view of reality. From this information, we can infer that the data we require to perform our analysis and reach an answer to our research question is numerical in nature. Given the availability of a third party created score on Corporate Social Performance and related variables on financial and organisational slack, measured and calculated over time while being in the hands of a highly respected source for archival data, Thomson Reuters, we have chosen to collect quantitative data (Saunders et al., 2009, pp. 154). To obtain the sought after answer in accordance with our explanatory purpose, it will be necessary to subject the collected sample data to rigorous statistical tests and analysis as has been indicated in the subsection on positivism above. We will only undertake purely quantitative tests and analysis in the form of statistical methods. Since we choose to not incorporate any
techniques of qualitative nature, neither in our data-collection process nor in our statistical analysis, we have chosen a mono-method (Saunders et al., 2009, pp. 151). There are both advantages and disadvantages to choosing either quantitative or qualitative techniques (Smith, 1981, cited in Saunders et al., 2009, pp. 154). Among the advantages of choosing between qualitative and quantitative data collection techniques and their associated data-types is that we could avoid the process of either having to qualitise or quantitise the data in question (Saunders et al., 2009, pp. 153). Since this renders any potentially biased interpretation unnecessary, we argue that this has the effect of increasing the level of reliability in the data and subsequent results obtained. However, the fact that there will obviously be involvement from the researchers themselves affects the reliability negatively, since the choice of which data collection techniques to be used impacts the type of result obtained (Saunders et al., 2009, pp. 154).

2.5.4. Time horizon - Cross-sectional
In choosing the archival strategy when sourcing samples, researchers profit from the sheer amount of data available (Saunders et al., 2009, pp. 155). The availability of data kept in records, both quantitative and qualitative, provides researchers choosing to analyse the using archival strategy choice with the option of two types of analysis. The cross-sectional analysis allows researchers to investigate effects between variables at a specific point in time whereas the longitudinal approach is used to isolate changes and variations in the relationship between variables (Saunders et al., 2009, pp. 155). This study will adopt a cross-sectional time horizon to answer our research question, this time horizon will in turn be used on several sets of consecutive years. This allows us to profit from mostly pre-calculated variables available for a period of at least ten years. However, as a consequence of using a cross-sectional time horizon we will not be able to study the time-varying relationship between our dependant and our independent variables (Bouma & Atkinson, 1995, cited in Saunders et al., 2009, pp. 156; Saunders et al., 2009, pp. 155).

2.6. Research credibility
Even though it is impossible to say with absolute accuracy that the results and conclusions obtained from performing research will suit all applicable situations in any time-period at any point in time, we take care to minimize the risk and scale of being wrong. Reliability, validity and generalizability are three aspects of research which are very important to pay serious attention to as they have the power to undermine conclusions reached by researchers (Saunders et al., 2009, pp. 156). There is also a risk that in the end, the research method and conclusions will not survive scrutiny (Raimond, 1993, cited in Saunders et al., 2009, pp. 156). The reliability of a research study is related to whether the methods and techniques used to either gain or analyse the data are adequate and suitable for the task. Should the data be mishandled or the statistical methods are not prudent, it will impact how reliable the findings are (Saunders et al., 2009, pp. 156). Errors and biases originating from either the participants in the study or from the observers themselves reduces the robustness of the research (Saunders et al., 2009, pp. 156, 157). Therefore it is crucial to establish a way of handling the research material that will increase the chances of the results obtained being consistent across occasions, that other researchers will come to the same conclusions and that the method used are clearly explained and transparent enough to facilitate replicability (Easterby-Smith et al., 2008, cited in Saunders et al., 2009, pp. 156). The phenomenon of research validity pertains to how well the design of the study measures what it intended to
measure (Saunders et al., 2009, pp. 157). Robinson (2002, cited in Saunders et al., 2009, pp. 157) frames several important factors which could play part in reducing the validity of a study if not treated with care. These are the history of the subject you want to research, biases or errors prevalent in the testing-phase, instrumentation which are changes in the context during the research, research objects or participants dropping out, external changes to the participants, and correctly interpreting the way of causality (Robinson, 2002, cited in Saunders et al., 2009, pp. 157, 158). Generalizability concerns claims about conclusions being transferrable to other observations in other contexts using a different data set (Saunders et al., 2009, pp. 158).

Furthermore, avoiding putting the reader in the position where he or she is expected to make leaps in logic to in order to follow the progress of the thesis is important (Saunders et al., 2009, pp. 158). The population being researched should make logical sense, and be coherent with what the research question seeks to answer. Data collection processes needs to be disclosed and analysed for potential biases. Data needs to be interpreted in accordance with an appropriate theoretical framework, likewise any hypotheses that may arise from the theoretical framework needs to make logical sense (Saunders et al., 2009, pp. 159). Finally, the conclusions drawn need to make logical sense, based on the results obtained using the research design (Saunders et al., 2009, pp. 159).

2.7. Ethical & Social Considerations

There are some ethical considerations to take into account when building a research design, and many of them are either directly or indirectly related to the choice of research topic. Depending on what the topic is, there could be serious ethical dilemmas which need to be addressed. It is important for researchers to consider the risks involved with, and then refrain from building a research design which puts other people through discomfort, causes embarrassment, disadvantage or harm to the participants of the study. Furthermore, the use of hidden or covert research, i.e. where the subject is unaware of the research being undertaken is not considered ethical, and requires substantial ethical considerations should it be necessary or required to perform such research (Saunders et al., 2009, pp. 160).

In our case, since this thesis relies solely on secondary-type data collected under the archival strategy, we argue that the risk of any person being adversely affected by our research is low. The data we collect is recorded in Thomson Reuters and is unaltered in its’ capacity to project numerical values, the transformation or exclusion of certain companies from our population is not based on other than purely factual basis, such as the lack of a reported measure. We will subject our data to standard statistical tests and methods and subsequently report and analyse our findings. Our objective is to map the relations of our collected data. We shall refrain from negatively singling out companies on their behaviour and instead strive to provide constructive criticism where available.

2.8. Choice of Literature & Criticism

For this chapter, we used literature specifically designed for students of business administration, to further explore the concepts we used the scientific articles on the proper use of methodology in finance collected from google scholar, a source we deem trustworthy. Furthermore, we have also used educational material from an online encyclopedia maintained by Stanford University specifically focusing on philosophy. We are confident in the trustworthiness of this source due to the reputation of the host
university. There is a small risk that the terms and nomenclature used in business-administration and philosophy intersects in such a way that it distorts the understanding on the proper meaning of the facts or phenomena in question, however we regard that risk as minimal.

2.9. Summary of methodological positions

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<td>Axiological</td>
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Figure 1- Summary of methodological positions
CHAPTER 3. Theoretical framework

The third chapter develops a theoretical frame used for this study. The theoretical frame is divided into three sections based on the context that they target. The first section is on societal level and starts with a definition of the legitimacy theory and the institutional differences hypothesis (IDH). The second section continues with an introduction of theories related to decision-making when allocating valuable financial resources towards achieving corporate goals or competitive advantage. Lastly, the third section introduces theories on the individual level as it presents theories regarding the individuals that have a stake or a share in a firm.

3.1. Corporate Social Responsibility & Society

In order to explain whether companies spend their slack resources on discretionary purposes, it is necessary to start with describing how the company's legitimacy depends on CSR performance. Investments into CSR and improvement of its performance are one part of fulfilling the prevailing expectations of communities in which the entity operates. Legitimacy theory is followed by explaining legitimacy management, which is a crucial element of managing a relationship between the company and society. Furthermore, institutionalism suggests that cultural definitions can determine how an entity is built and how it is run. Since legitimacy is time and place dependent, this raises the importance of taking into consideration that IDH explains how the used practices by companies are naturally diverse across different societal environments and times. This section ends with the features of Nordic society in order to demonstrate how the environment in which entities operate can influence their preferences of the resource allocation into CSR.

The definition of CSR

Since the last century, there has been a wide discussion among scholars and professionals about the phenomenon called corporate social responsibility (CSR) (Donham, 1927). The existing definitions of CSR can be divided into different levels based on relationship concerns, such as the global, national and corporate level. On a global level, the CSR concerns the relationship between global corporations, governments of countries and individual citizens. On national level, it concerns the relationship between corporations and local society, and on corporate level it concerns the relationship between the corporation and its stakeholders (Crowther & Guler, 2008, p. 10). CSR is not a new concept, and besides the fact that it is a subject of great interest among many, there is no single internationally accepted definition. Moreover, CSR is to be considered an enigma due to its multidimensionality. This highlights the question of what exactly is considered by CSR. According to the European Commission (2015), “CSR is a responsibility of enterprises for their impact on society”. The European Commission states in their “Agenda for Action” from 2011 that companies should have processes in place to connect CSR to their business operations and core strategy (European Commission, 2011).

A discussion the evolution of CSR

As can be seen by observing the world that surrounds us, today’s perception of CSR is different from the one of the past. In the last century, one radical but widely accepted perception of CSR was expressed by Friedman, who argues that CSR is a pure socialism (1970) and the only purpose of a company is to make as much money for its shareholders as possible (1962). For many decades, a common practice of companies was to increase their corporate wealth to the detriment of a societal well-being. This
raised the concerns of society about how corporate operations perform on a societal and environmental level, which eventually led to a widely spread message about requirements for good CSR performance. On the other hand, in recent years there has been an increased interest in moving the world that we live in toward a more sustainable direction, which eventually received the attention of global markets. This movement is framed into the CSR notion in that companies could not maintain their legitimacy without taking into consideration their stakeholders’ expectations.

Nowadays, companies are incorporating these expectations into their business strategies, because without such incorporation, the company can potentially risk a lack of capital, resources, employees, customers and so forth. Moreover, the CSR became more commonplace in the press, among business and political leaders and in academic literature and research. The current trend is to not only maximize profits for shareholders, but also to incorporate social value creation into functional business. In other words, the current trends in CSR are both moral and economic. With increasing focus on CSR and increasing corporate engagement in socially responsible operations, the question is how companies finance these sustainable activities? Companies, as the agents of social value creation, need capital not only for their core business, but also for their discretionary activities.

**A discussion on the case for CSR**

The increasing importance of CSR as a part of corporate strategy and society raises an interest to see how CSR is connected to the social value creation role of companies, especially when these companies are operating in an imperfect institutional framework in the current globalized economy. There is a wide range of motives behind companies engaging in CSR, e.g. competitiveness, improving financial performance, social cohesion, increasing its philanthropic activities to limit consequences of a recent scandal, other might cooperate with NGO organizations to address different shareholders or stakeholders. The case of this study is to find an answer to the nature of the relationship between social value creation and shareholders value protection, thus to find a business case for what the preferred choice of funding towards the CSR activities is. Doing so, we are able to further elaborate on how deeply CSR is integrated in the company.

**3.1.1. Legitimacy theory**

The legitimacy theory is a positive theory that seeks to explain an entity's behaviour rather than explaining how entities should behave within a society (Hoque, 2006). The theory is also considered to be a systems-oriented theory, as the entity is influenced by, and in turn, have influence on the societal context in which it operates (Hoque, 2006, pp. 166). Legitimacy is conceptualised as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (Suchman, 1995, p. 574).

Additionally, legitimacy is time and place dependent, in the sense that what can be considered legitimate today, do not have to be legitimate in future due to changing societal attitudes (Hoque, 2006, pp. 162). The same implication goes for the place perspective, in the sense that different perceptions of legitimacy can be achieved at different places with existing differences being due to different expectations across various groups in society. Hoque (2006) argues that one needs to be careful with discussing legitimacy as the particular time and place have to be taken into consideration. The societal expectations are likely to be clearly expressed in present
time and expected to be fulfilled by the entities. These entities are receiving the signals and taking particular actions to achieve legitimacy. When organizational behaviour does not meet societal expectations, society is likely to point out such issues in public policy space and when necessary, laws or other regulations are used. At its simplest, the entities do not have an inherent right to exist but can do so only if they meet the requisites of society (Suchman, 1995). Central to legitimacy theory is the “social contract” notion that invisibly exists between an entity and society (Hoque, 2006, pp. 162). The social contract can reveal the state of the relationship between the two. As such, the social contract explains why a company has or has not difficulties in attracting capital, customers, employees, investors, and so forth, which means that legitimacy affects how the environment surrounding the company act.

With continuously changing dynamics in expectations, there is an issue of lack of match between how society wants the company to behave and how it is perceived that the company has behaved. As stated above, the perception is a key term in legitimacy creation. The disparity is called “legitimacy gap” and Lindblom (1994, cited in Hogue, 2006, p. 163) argues that “The legitimacy gap will fluctuate without any changes in action on the part of the corporation. Indeed, as expectations of the relevant publics change the corporation must make changes or the legitimacy gap will grow as the level of conflict increases and the levels of positive and passive support decreases”. Consistent with the definition above, one can claim that there is one main source of legitimacy gap, and that is when societal expectations are changing and companies behave in the same way as before. There is no measure of the gap to provide an overview to understand when the company's survival is threatened if it does not comply with the expectations. The threat also arises if the company does not demonstrate the information to the public.

Therefore, this theory has a broad application for various organizational strategies, especially those that consider public disclosure of information. Both CSR performance scores and CSR information in annual reports are considered to be such information. The argument is that when an entity is complying with societal expectations but without disclosed adequate details about it, it might not be perceived as being legitimate.

**CSR & Organizational legitimacy**

Elaborating on the above definition of legitimacy theory, the company's survival is dependent on the management of its legitimacy, or so called organizational legitimacy. Legitimacy theory suggests that organizational legitimacy can be controlled by the company itself, implemented by the management which is able to impact how society perceives the company. Managing legitimacy requires communication towards different groups of society and it can be argued that CSR performance scores can be considered a communication tool that sends an appropriate response about the corporate behaviour. In order to keep the legitimacy, companies avoid negative perceptions and ensure the long-term continuity and social licence to operate (Aguilera et al., 2007, p. 845). Gaining legitimacy, companies must adapt to laws, societal and environmental expectations from shareholders and stakeholders, and maintain legitimacy by adapting to all norms and regulations of acceptable behaviour or affiliate with companies that are highly legitimate (Pollach, 2015, p. 59). In other words, companies achieve legitimacy in the eyes of different groups in society by being socially responsible beyond their profit-seeking activities and maximizing their own financial well-being with an appropriate communication strategy.
The expectations from stakeholders, shareholders or other companies can influence implementation of CSR into business strategy and consequently affect the usage of available financial resources. In the sense of highly legitimate companies, there is a notion of role models and their effects on other entities, with same implication to business environment, which provides a root to understand how prominent companies with high CSR performance ratings act as role models in our contemporary society. In the same light, it is consistent with assumptions about role models representing specific concepts where other actors will under certain conditions follow (Rachels, 2003, p. 105). Therefore, companies become more moral either by modelling the behaviour of companies performing greatly on CSR scorings, behaving morally to fulfil societal expectations or by behaving morally as a consequence of the core of their business existence. It can be argued that maintaining the legitimacy is an expense, as it requires allocated capital, additional resources or implemented operations. One concern from it is therefore whether the implemented resources are sourced with financial slack.

3.1.2. Institutional differences hypothesis (IDH)
A company's activities are significantly affected by its environment, by political and economic institutions and the direct impact these have on their business behaviour. The example can be shown by comparing Europe and North America, where institutional differences greatly influence their engagements in CSR, where European companies are expected to be engaged more than those in North America (Campbell, 2007). Additionally, there are also differences in perception of financial slack and its usage on discretionary resources in companies in developed and developing countries. As such, developed countries understand the value of CSR, have state support to engage in CSR activities and do not face capital constraints when compared to a developing region. Therefore, the institutional differences are able to explain the CSR role in a company.

There is a broad set of institutional conditions under which CSR is likely to occur within companies. Campbell (2007) defines a series of economic and institutional propositions that specifies conditions under which companies are likely to engage in CSR. First proposition suggests that companies with weak financial performance are less likely to engage in CSR, and vice versa (Campbell, 2007). When a company is less profitable, it has consequently fewer resources and slack to invest into discretionary projects. Additionally, not only social value creation is threatened per se, but it jeopardizes the shareholders’ value as well. Second proposition suggests that competition plays a key role in narrowing profit margins leading to the same primary direction as with financial performance mentioned above. With increased globalized economic activity, it is more difficult to achieve and maintain international competitive advantage. As a response to it, companies are creating pressures towards governments to decrease taxes or to adopt a range of neoliberal policies (Campbell & Pedersen, 2001 in Campbell, 2007, p. 953). Besides economic propositions, Campbell (2007) also identifies institutional ones, such as the role of regulations and argues that developing regulations through the negotiation among companies, government, and other stakeholders matter most in successfully implemented CSR. One can argue that regulations created by the state are not the only rules that companies comply with. Industries tend to self-regulate themselves in regards to the particular issues within an industry. For example, since the tobacco industry entered the CSR debate, it constantly makes sure that its members do not shine a dark light on the whole industry through irresponsible business practices. Third proposition made by Campbell (2007) is that
companies operating in an environment with institutionalized normative calls for operating in socially responsible ways are more likely to do so. It is widely accepted by institutionalists and some comparative political economists that there are different normative standards among different countries (Dore, 1983 in Campbell, 2007). Moreover, there are more institutional factors influencing engagement in CSR, such as existing dialogue with unions, community groups or when a company belongs to an association promoting responsible business behaviour. In such way, companies are the most likely to engage in CSR.

3.1.3. CSR & Nordic countries
The authors introduced the Nordic countries in the first chapter as being the most sustainable countries in the world. We consider Nordic countries and companies as roles models in context of CSR due to their globally leading positions. As such, it is of high interest to present some of the characteristics of the Nordic countries, what the similarities among them are and lastly what position CSR has in each of these countries.

In one of the most comprehensive studies undertaken by Professor Geert Hofstede (Hofstede, n.d.), who developed the model which shows how national cultures among Nordic countries are highly similar in all cultural aspects, such as power distance, individualism, femininity, uncertainty avoidance, long-term orientation and indulgence. The similarity existing among Denmark, Sweden, Norway and Finland allows us to refer to these countries as one geographical area, especially in the identified context of sustainability and national culture. Additionally, Hofstede's cultural dimensions’ theory describes effects of society's culture on values of its members which provide fundamental underpinnings for the study of RobecoSAM (2013, p. 1), examining an impact of national culture on a company's culture in the Nordic context. The highest similarity among Nordic companies was within three cultural dimensions. First, Nordic companies obtained low score in power dimension which explains their flat company hierarchy, where managers rather are coaches than decision-makers and employees expect being part of the decision-making process. Second, they received high score in individualism; however, there is an existing balance between individualism and collectivism due to high social trust and a positive view of the role of the government. Third, they had high feminine culture resulting in supportive managers and conflicts solved through compromise and negotiation (RobecoSAM, 2013, p. 2).

In Sweden, only all state-owned companies must comply with GRI reporting standards, or issue public sustainability reports following GRI guidelines (Mullerat, 2013, p. 12). Besides government’s involvement and support, one particular reason for the success of achieving a high CSR performance in Sweden lies in fact that companies are willing to invest financial resources in CSR initiatives (Mullerat, 2013, p. 12). Some of the most challenging issues remaining to tackle in Sweden are climate change, labour market, work-life balance, demographic change, innovation and entrepreneurship.

In 2008, Denmark launched the so called Action Plan for CSR aiming to promote the usage and increase awareness of CSR to Danish companies. The Action Plan also included promoting sustainable growth within local and international markets. Additionally, the Action Plan required that all large companies must report their CSR activities to the public (Mullerat, 2013, p. 12 - 13).
In Finland, the focus on environmental issues is now present within the education system by including the topic in the school schedules in vocational studies. The goal is to develop, at a young age, a deep understanding of the connection between individual well-being, the economy, environmental protection and foundations for sustainable industries (Mullerat, 2013, p. 20). The main CSR issues present in Finland are the environment, climate change, employment practices and ethical consumption, with companies voluntarily putting emphasis on sustainable operations beyond compulsory law. Compulsory law does not require Finnish companies to report on CSR issues; however, they are required to disclose information such as material environmental risks or personnel issues (CSR Europe, 2010, p. 20). One troublesome area of Finnish companies’ influencing CSR is the competitiveness of emerging markets and the low ability of Finnish companies to reallocate their operations to low-cost countries (CSR Europe, 2010, p. 22).

Norway faces the same issues as Sweden with the addition of issues concerning human rights and how companies behave abroad (CSR Europe, 2010, p. 74, 76). Norway requires companies to integrate social and environmental activities into their daily operations and processes with stakeholders, supported by documentation on CSR released in 2009 by the Norwegian government (CSR Europe, 2010, p. 52). Furthermore, major drivers of CSR performance in Norway are found in the financial sector because of a focus on ethical investments, the exclusion of unethical investments, cross-national business activities and more influential CSR on public procurement. This entails that existing investments in unethical companies should be excluded from a responsible investor portfolio (CSR Europe, 2010, p. 52).

3.2. CSR on firm level
In the theories below we leave the societal and institutional levels to present theories on the level of the firm. It should be noted that these theories can have institutional aspects to them, however for the purpose of this thesis; we treat them on a firm level.

3.2.1. Resource-based view
The resource based theory considers the relationship between resources, capabilities and competitive advantages. Hart (1995) describes it from the perspective that valuable corporate resources and capabilities are the key sources for competitive advantage. The resource based theory can explain whether companies’ engagement in CSR is driven by the search for an increased competitive advantage. In this study, financial slack resources are presented as the monetary measure of the resources and CSR as the competitive advantage. The underpinnings of the resource based theory are that companies can build economic competitive advantages because they have access to one or more resources which are hard to imitate (Barney, 1991, cited in McWilliams & Siegel, 2011, p. 1484).

Being praised as a CSR role model could be seen as a way to own or be reputed with a hard to copy slack resource which serves as a driver for competitive advantage. This could be a double-edged sword. In this way, CSR can be seen as a way of mitigating the potential backlash of charging higher than economically reasonable prices. If a company gains competitive advantage over other companies it could artificially drive up prices on the goods they produce and thus earn above normal profits. Many economists have noted upon this fact, because from the view of a social welfare perspective, this behaviour can be seen as nefarious since it extracts wealth from the customers through

**Decision-making concerning resource allocation towards CSR**

Senior management must provide strategies and initiatives on CSR in order to gain and maintain its legitimacy in circumstances where CSR initiatives must flow through the internal organization’s strategies to achieve deep embedding of the implications (Coombs & Holladay, 2011). Furthermore, corporations must be willing to allocate their slack to CSR. Managers in their decision-making process, receive information from different sources based on the strategies created and the expected outcomes. Decisions being shifted through different departments and managerial levels are influenced by prior decisions and the information received in them. Agents can experience irrational emotions and other factors inhibiting or otherwise impeding their decision-making about financial slack allocations. It can be argued, that this issue increases when the manager has to make decisions under uncertainty or risk. On the other hand, factors such as exceeding desired financial performance and achieving financial slack give the manager opportunities to create value for stakeholders without it being costly to shareholders. Exceeding the financial performance leads to lower monitoring activities of independent CEOs by owners and higher freedom for managers in their decision-making process of resource allocation (Arora & Dharwadkar, 2011).

Besides managers, other actors such as the shareholders determine the acceptable level of profit to be allocated to CSR activities based on their preferences, ethical beliefs, contracts and goals (Reinhardt et al., 2008, p. 228). The allocation of profit toward activities beneficial to society is influenced by an organizational culture, which in turn influences how individuals in the decision-making process react to corporate values and goals. In case of actual performance lower than planned performance, owners are likely to increase pressures on managers in order to reach the goals. Desired corporate performance is determined by past performance or industry average performance with direct impact on financial slack allocation. Companies are mostly setting their targets based on their competitors’ performance and then by improving their prior performance (Lant, 1992). For example, if a company sets a goal of five percent profit margin for a particular quarter or year and the actual profit turns out to be greater; shareholders are satisfied and let managers to work with more resources for CSR. This means that the satisfaction of owners is accomplished by the company’s performance today which determines the resources spent on CSR tomorrow.

**Financial slack**

Financial slack can serve as a monetary tool for companies to target issues in society where they operate. Therefore, by creating such slack resources, companies can provide the financial foundation for progress in society by supporting development and welfare. To investigate the relationship between future CSR performance and current financial slack, it is important to keep in mind that companies are dealing with moral and ethical dilemmas while making choices and prioritizing between them. As such, some business actions can be at the expense of other actions (Nederlandse Beroepsorganisatie van Accountants, 2012, p. 13). Budget constraints provide financial ceilings to all business activities, therefore not all activities can be addressed at once (Nederlandse Beroepsorganisatie van Accountants, 2012, p. 13). Committing financial slack resources
to CSR is voluntary and it is important to make it transparent to shareholders and stakeholders as they show their interest in such information (Ernst & Young, 2013, p. 10).

3.2.2. Slack resources theory
Any sort of slack in a company plays an important role due to resources availability that can be allocated into social or environmental domains. Corporate slack is the ability to use the available corporate resources and reach a set of goals. One of the functions of slack is defined by Thompson (1967) as a possibility to experiment and broaden the range of strategic focus. In other words, slack creates the possibility to increase engagement into CSR. Slack can be kept at a certain level as a backup in a case of an economic downturn or other demanding times (Sharfman et al., 1988). Organizational slack is identified as “a cushion of actual or potential resources which allow an organization to adapt successfully to internal pressures for adjustments or to external pressures for change in policy, as well as to initiate changes in strategy with respect to the external environment” (Bourgeois, 1981, p. 30).

There are three major factors influencing levels of slack, these are the external environment conditions, features of organization and the values of companies’ actors (Sharfman et al., 1988, p. 603). For example, a growing market attracts new entrants which increase competition for resources, in a manufacturing industry slack is kept mostly in the form of inventory and machine capacity and political behaviour is also positively associated with highly discretionary slack (Sharfman et al., 1988, p. 604).

Different types of slack have different influence on the level of managers’ discretion and flexibility to reduce internal pressures from shareholders and stakeholders (Sharfman et al., 1988, p. 602). Available resources can either be more or less discretionary, and while more discretionary resources have more possibilities and options of being used, the less discretionary resources have less usage possibilities (Sharfman et al., 1988). Highly discretionary resources are for example cash flow and low discretionary resources are for example low flexibility of the machine capacity. For the purpose of this study, the main focus is on highly discretionary resources (cash flow). Fama (1980) argues that slack with no further allocation plan is believed to create agency issues in a form of additional costs or risks.

We argue that management of slack resources is an important organizational competence when adapting to a changing global environment. CSR as the concept we see today, was evolving over decades, currently becoming deeply integrated and requested in our social and corporate environment. Despite the existing criticism, there is an increase in current academia that is in favour of this phenomenon.

3.3. Independent actors dependent on a firm
In the text below we leave the firm level and continue to discuss theories applicable on an individual level. Some of the theories described will have implications for the firm, but we treat them as theories applicable to individuals.

3.3.1. CSR & Stakeholder, Shareholder, Agency and Stewardship theory
Stakeholder theory
Due to growing interest in matters of business ethics and the academic community aiming to understand CSR, it is substantial to include stakeholder theory into this study.
As a theory of business ethics and organizational management, it targets moral values in decision-making processes. According to Donaldson and Preston (1995) there are three aspects of stakeholder theory. The theory is descriptive, instrumental and normative. Debate over these different aspects and their justifications leads to better understanding of the stakeholder theory. From the descriptive perspective, the theory is used to explain corporate behaviour in past, present and future based on the surrounding groups of stakeholders. As such, the theory is used to explain characteristics, features and behaviours of companies, such as the nature of the firm (Brenner & Cochran, 1991 in Donaldson & Preston, 1995, p. 70) or how companies are managed (Halal, 1990 in Donaldson & Preston, 1995, p. 70). In other words, the descriptive nature of the theory explains how the world is. In conjunction with descriptive data, the second aspect of the stakeholder theory is its instrumental nature. This instrumental perspective is used to show the connections and relationships between the cause and effect (Donaldson & Preston, 1995, p. 71). As such, it explores linkages between the management of stakeholders and the achievement of corporate goals, which is surely implicit. Donaldson and Preston (1995) argue that highly successful companies can be different in many ways but they show a common positive approach towards their stakeholders. It could be reasonably contended with certain hypothetical base that adaptation to principles and practices of those that have a stake in a firm leads to increasing fulfilment of corporate goals or even exceeding them. Much on stakeholder theory is of the normative character that flows into the third and last aspect of the theory. It interprets the function of the company based on what is considered to be normal and correct, in other words how the world ought to be. According to Margolis and Walsh (2003), normative stakeholder theory is perceived as one of the essential theoretical frameworks in describing CSR performance within the relationship between social and financial performance.

Above all, what financial resources are allocated to CSR is possibly influenced by the fact that different groups of stakeholders have different value for a company. There is little research on which stakeholders are more or less important to managers. In a theoretical model created by Mitchell et al. (1997) a concept of power, legitimacy and urgency is described that plays a key role in becoming noteworthy to managers. Those noteworthy are reasonably vital for the survival of a company which can stimulate integration of CSR into the core business and allocation of operational capital. In contrast to this, expectations from less salient stakeholders can be targeted after achieving the financial slack that is not committed to other operational purposes. However, regardless of what source of financial resources is to be invested into CSR, the notion of stakeholders’ interest is as important as shareholders’ interest.

**Shareholder theory**

There has been an extensive research on the relationship between shareholders and the firm. Much of this research has been focused on whether the interests of shareholders, de facto owners of the firm, are protected and if the confidence and trust those investors have in the firm is valued and not exploited. If a company desires to undertake CSR activities, the shareholders are highly interested in how the investments impact their wealth and financial performance of the firm. The authors of this thesis argue that value protection for shareholders is as important as value creation for the society. As such, shareholder theory has an equally weighted role as a stakeholder theory in this study. The shareholders approach towards CSR can vary from a company to company, since each organization has the ability to convert their own resources and capabilities into
competitive advantage with different outcomes. In this way, there might be a potential conflict between managers and owners of the firm. This was highlighted by Friedman (1970), who argued that managers could be implementing CSR only for their own career benefits at the expense of shareholders. McWilliams and Siegel (2001) reveal in their study that there is a particular level of CSR that will both satisfy the prevailing demand from stakeholders and maximize profits for owners. To assess the ideal level of CSR that is beneficial for all groups surrounding the company, managers should employ the same analytical tools used when making other investment decisions. One of the tools used when making such decision is a cost-benefit analysis as described earlier in this chapter. As such, value protection for shareholders must begin before managers decide to invest into CSR. To assess the impact of CSR on financial performance, McWilliams and Siegel (2001) provides an explanation on how two different companies with two different sustainability practices achieve the same profitability. In a case that each of these companies does their business with a goal to maximize their profit, both will earn the same profit with or without CSR. The company with CSR applied to their business will have higher costs but higher revenues, while second company without CSR applied will have lower costs and lower revenues (McWilliams & Siegel, 2001, p. 125). As such, shareholders can have a higher trust towards CSR attributes present in the company and managerial decision-making about its implications. Several theories have sprouted from the research on shareholders and their relationship with the firm over the years, with two prevalent ones being the agency theory and the contrasting stewardship theory. Both of these theories investigate how leadership and management structures in enterprises impact the wealth of shareholders and how the wealth protection is implemented in practice (Donaldson & Davis, 1991, p. 50).

Agency and Stewardship theory
In agency theory, there are two counterparties named principal and agent. The agent acts on behalf of the principal. The rationale behind agency theory is that when ownership (principal) and management (agent) is separated, there are increased risks of opportunistic behaviour by the management (Donaldson & Davis, 1991, p. 50, 61; Fox & Hamilton, 1994, p. 69). These risks occur as both parties seek to maximise their utility in a zero-sum game (Jensen & Meckling, 1976 in Van Puyvelde et al., 2012, p. 435). This behaviour is assumed to result in agency costs which reduce the amount of financial resources available to provide return on equity and return on investment for shareholders (Donaldson & Davis, 1991, p. 50, 61). On the other hand, stewardship theory postulates that managers do in fact seek to do what is best for the company in any given situation and work towards maximizing the company's performance (Fox & Hamilton, 1994, p. 69). The agent is motivated to act in accordance with the interests of the principal because the very action of being the agent is tied to utility, such as personal achievement or self-actualization (Davis et al., 1997 in Van Puyvelde et al., 2012, p. 436).

Protection of shareholder wealth at a corporate level can be seen in practice when imposing a separation of the CEO and the Chairman of the board of directors. This serves to circumvent a phenomenon termed CEO-duality which occurs when the position of CEO and Chairman of the board is occupied by the same person (Donaldson & Davis, 1991, p. 61). When the position is occupied by the same person, doubts are raised over the impartiality of the board and the decisions it undertakes (Donaldson & Davis, 1991, p. 50, 51). Teams of researchers including Donaldson and Davis (1991)
and Fox and Hamilton (1994) have found evidence in favour of the stewardship theory since they found positive correlations between CEO-duality and financial performance.

To combat opportunistic behaviour, measures are taken by the board of directors to monitor and control the management of the firm (Van Puyvelde et al., 2012, p. 437). Measures aimed at aligning the interests of the agent to those of the principal are also commonplace. Such measures can be in the form of stock option grants awarded to senior management. The increased ratio of remuneration tied up in the medium to long term successful financial performance of the firm to the remuneration being paid directly to the individual is considered to reduce the risks of opportunistic, myopic and damaging behaviour on the part of the management (Donaldson & Davis, 1991, p. 50, 61).

Donaldson and Davis (1991, p. 60) bring up the interesting topic that perhaps both agency theory and stewardship theory has uses in different situations and contexts. They argue that acting in accordance with stewardship theory, providing the CEO with more power and authority could provide better returns in the status quo. The status quo is thought of as being organizational continuance and a good relationship between the owners and the managers. Furthermore, they argue that agency theory could become more relevant when threats to status quo appears, such as during hostile takeovers, as managers behave opportunistically in response to a perceived threat.

Van Puyvelde et al. (2012, p. 432) brings up the topic that problems can occur when there are several principals with sometimes conflicting objectives. Problems related to the relationship between principal and agent become harder to solve with means designed to counter agency-specific problems when there are multiple claimants to the position of principal (Steinberg, 2010 in Van Puyvelde et al., 2012, p. 432). The fact that CSR is undertaken by firms instead of by the shareholders themselves makes it reasonable to assume that not all CSR activities are welcomed by the investors.

3.4. Choice of Literature & Criticism
In current academia, there is a broad range of research on CSR, what it affects and how it is affected. If one would lack the capability for source criticism, it could potentially cause difficulties when the choice of literature is made and thus decrease the reliability of the knowledge created. As such, the authors of this thesis made sure that sources are relevant and reliable. We have undertaken a high-quality review of literature that is complete with a focus on various concepts. We are consistent with the approach of Webster and Watson (2002) who argue that a complete literature review of a topic should be without restrictions in terms of using only one journal or reviewing only on one geographical area. As such, Nordic countries are studied in this thesis while we used a research that examines the sub-Saharan countries as reference. Furthermore, we do not restrict the sources to only one journal but multiple of them are used, for example Journal of Management Studies, Journal of Business Ethics or the international Journal of Business in Society. Additionally, to this, other reliable sources are used such as publications from Harvard Business Review or European Commission. The particular studies used were criticized based on various factors, namely publisher reputation or citations. We incorporated ideas and findings from prominent authors in a field of CSR such as Friedman, Waddock and Graves, Margolis and Walsh or Cochran and Wood.
3.5. Ethical & Social Considerations
The subject of business ethics is highly related to this study as one can conclude based on the topic. Companies operate in an environment within which several different groups such as owners, managers, employees, customers and suppliers have different interests. These interests should be managed in a way that takes a moral demand from the stakeholders and desired corporate performance from the owners into account. As such, the study is framed around two important theories, the shareholder and stakeholder theory, which are used to perceive how Nordic companies protect and create value for both. When companies succeed in doing so, this ensures an organizational legitimacy and survival on markets. Therefore, legitimacy and its management are extensively discussed in the beginning of this chapter.

The inclusion of a detailed description of the Nordic countries, their cultural features and CSR performance in this chapter was undertaken to broaden the knowledge on the cultural background of the examined companies. As we mentioned before, where we come from greatly impacts how we behave and therefore Nordic companies can invest in better business ethics once they gain some excess uncommitted resources rather than to invest towards other areas. Additionally, the reason for an inclusion of the institutional differences hypothesis is to demonstrate potential differences in ethical and social approaches between developed and developing countries, which will be further elaborated on when discussing ethical and social considerations in the final chapter.

3.6. Literature review
As stated by McWilliams and Siegel (2001, p. xv) “a high-quality review is complete and focuses on concepts”. They further argue that a systematic review should ensure an accumulation of relatively complete base of relevant literature. Knowing that CSR is a multidimensional and complex notion, with many studies and articles trying to identify clear underpinnings on it, the authors of this study undertook a very thorough analysis of existing research. Doing so, the frame of this thesis was created, together with an identification of the research gap in existing research.

Research on financial and social performance have several discrepancies which are contributing to the fact that up to date there is no universal answer on what motivates companies to invest into CSR and what source of capital is preferred as the choice of funding. The authors present a table below summarizing their own investigation on the major discrepancies found in the research field. This helps the reader to understand the discrepancies and complexity of CSR related to financial means.

All the below mentioned studies are highly contributing to creating a theoretical and practical foundation; however, four studies created the strongest base for this research. Firstly, the study of Cochran and Wood (1984) who argue that a significant relationship between financial and social performance exists. Secondly, a finding from a study by Waddock and Graves (1997) which indicates that profitability fosters a financial slack which can be eventually allocated into CSR. Thirdly, suggested research on financial slack and CSR performance in institutionally stable region (Julian & Ofori-Dankwa, 2003). Lastly, findings by Seifert et al. (2004) on a positive relationship between cash flow and philanthropic donations. As such, the research gap was identified. It is important to mention that there is no academic research in the chosen geographical area to the author's knowledge.
Table 1 - CSR studies relevant to our research from a theoretical perspective

<table>
<thead>
<tr>
<th>Causality direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial performance impacts CSR (Cochran &amp; Wood, 1984)</td>
</tr>
<tr>
<td>CSR actions impacts financial performance (Waddock &amp; Graves, 1997)</td>
</tr>
<tr>
<td>CSR impacts financial performance and vice versa (Virtuous circle) (Rodriguez-Fernandez, 2016)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Findings on social and financial performance relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modest positive relationship between financial and social performance (Margolis &amp; Walsh, 2003; Orlitzky et al., 2003)</td>
</tr>
<tr>
<td>Relationship between financial and social performance needs further investigation (Margolis &amp; Walsh, 2003; Rowley &amp; Berman, 2000)</td>
</tr>
<tr>
<td>Suggestion for research on financial slack and CSR performance in institutionally stable region (Julian &amp; Ofori-Dankwa, 2013)</td>
</tr>
<tr>
<td>Cash Flow has significant impact on cash donations to charity (Seifert et al., 2004)</td>
</tr>
<tr>
<td>Firm size impacts corporate philanthropy expenditures (Buchholtz et al., 1999)</td>
</tr>
<tr>
<td>Financial slack impacts CSR investments (Waddock &amp; Graves, 1997)</td>
</tr>
<tr>
<td>Markets punish companies for environmental events with negative impact (Flammer, 2011)</td>
</tr>
<tr>
<td>Investors are concerned about social performance of companies they invested in (Doh et al., 2010)</td>
</tr>
</tbody>
</table>
CHAPTER 4. Empirical method
This chapter describes the method through which we obtain the results used in this thesis. We start by defining our hypotheses, focusing on the relationship between CSR and Financial slack on a lagged basis, this is followed by a discussion on the population of companies chosen from the Nordic geographical area and subjected to four criteria for inclusion in our sample. The Data-collection from Thomson Reuters DataStream, the processes of preparing and transforming the dependent CSR variable and several independent variables measured by financial ratios are followed by the argumentation for the chosen time-horizon and the statistical considerations adhered to as well as the treatments undertaken. To facilitate the understanding of the result-chapter as well as the thesis in general we explain the basics of our chosen statistical method of multiple linear regression and our actions taken to investigate the robustness of our models based on the assumptions associated with the method before justifying our choice of variables to be included in the models. The chapter concludes with the regression procedure, a discussion on ethical and social considerations and an evaluation of the suitability of the data resources and the literature.

4.1. Hypotheses
We must draw conclusions against our chosen theories as they have been stated in the form of hypotheses. To do this, we draw upon the theory of the resource based view to argue that CSR is a resource which is beneficial to the company and relatively expensive and hard to copy, strengthening the competitive position of the company. We also argue that there is a small degree of scarcity involved, as CSR activities aimed towards environments external to the company tend to become saturated, e.g. investing in the local community park will only need a certain amount of money to be finished, and books in underprivileged schools will only need to be purchased at specific times. On this basis, we create our own hypotheses on the relationship between how measures of financial slack are related to corporate social performance. The purpose of the hypotheses is to shed a light on the fact that we are interested in mapping the inter year relationship between financial slack and the calculated corporate social responsibility rating on a yearly basis. In other words, we are interested in finding the relationship between financial slack one year, and the subsequent corporate social performance the following year. The hypotheses are expressed as the null- and alternative hypotheses with care taken to incorporate the inter-year relationship and the subsequent time-period tested. The years in brackets indicate from which year the dependant and the independent variables are collected. We will be unable to map the inter-year relationship for 2015 as the year 2016 is not included in our sample.

Time-period: 200X-200X+1
\(H_0\): There is no significant relationship between any measure of financial slack (200X) and CSR performance (200X+1)
\(H_{a1}\): There is a significant relationship between a measure of financial slack (200X) and CSR performance (200X+1)
\(H_{a2}\): There is a significant positive relationship between a measure of financial slack (200X) and CSR performance (200X+1)
\(H_{a3}\): There is a significant negative relationship between a measure of financial slack (200X) and CSR performance (200X+1)
\(H_{a4}\): There is a mixture of significant relationships between a measure of financial slack (200X) and CSR performance (200X+1)
4.2. Population
In accordance to our ontic assumptions, we would like to investigate a contextual field of information (Holden & Lynch, 2004, p. 6), for the purpose of this thesis, the Nordic countries serve as this field. It is not possible, due to time constraints, to examine each company individually or all companies belonging to one industry in the whole Nordic area. Thus, cultural and economic similarities of Nordic countries allow us to perform this study on public Nordic companies, and to avoid aggregating the population with companies from other geographical areas. In the introduction of this thesis we have argued for the similarities of the Nordic countries, going beyond cultural similarities, the Nordic countries are also top performers in the world when it concerns climate strategies, supply chain management, environmental reporting and social reporting. This makes the geographical area of particular interest for us when undertaking this study while providing certain homogeneity in the interest taken by the Nordic countries in the subject of Corporate Social Performance. To examine the Nordic market, we have opted to create a population consisting of two indexes, the Nasdaq OMX Nordic 120 and the Oslo stock exchange index. These indices are found in Thomson Reuters DataStream and contain companies from four Nordic countries, Sweden, Finland, Denmark and Norway. The indices do not include an equal number of companies from the different countries. However, as we have stated above, there are many similarities between the countries, and many of the companies operate in multiple countries.

4.3. Sample
Since we have chosen to study the relationship between the Corporate Social Responsibility variable and specific independent variables we do not have the option to use a probabilistic sampling technique as this would require that every company has an equal chance to be included in the sample, rather we rely on a purposive sampling method of the homogenous type (Saunders et al., 2009, pp. 237, 239, 240). Homogenous sampling allows us to separate a specific subset of the population based on similar traits and characteristics. The strength associated with this type of sampling is that we are can target and study the specific subset in depth (Saunders et al., 2009, pp. 240) and that there are no specific rules concerning the suitability of sample size (Saunders et al., 2009, pp. 233). However, the trade-off is that we cannot claim generalizability to the population based on statistical methods we use since the likeliness that it would be representative is low (Saunders et al., 2009, pp. 236), generalizations are instead made towards the theory justifying the choice of sample (Saunders et al., 2009, pp. 233).

Inclusion and exclusion criteria
The requirement for a company being included in the sample is based on the following four criteria.

1: The companies must be included in either the Nasdaq OMX Nordic 120 index or the Oslo stock index.

2: They need to be rated and subsequently given a CSR-Performance Score, this score takes the form of the “Equal Weighted Rating” with the code A4IR in Thomson Reuters DataStream.

3: The companies need to have data available on all the variables, or that enough data remains to perform our analysis (Hakim, 2000, cited in Saunders et al., 2009, pp. 274).
After having applied the above-mentioned inclusion criteria, we were left with a sample all together consisting of 81 companies from the Nordic area. Sweden is over-represented with 41 companies included in our sample, the other countries occur less frequently with Finland represented by 16 companies, Denmark by 15 companies and Norway by 9 companies. The increased ratio of Swedish firms to the other countries could potentially bias the representation of results. However, we have included dummy-variables for each of the countries to be able to control for this.

![Figure 2 - Number of companies per country](image)

4.4. Data collection, preparation and transformation

All the data processed in this thesis is collected from Thomson Reuters DataStream using the “Request time series” function. We used two data groups in DataStream from where we draw our data, the equity group and equity-indices group. The choice of time-period was selected to include the years between 2005 and 2015 in accordance with inclusion criteria 4. All data were downloaded in one Excel sheet with total number of 129 companies. The download consisted of two variables, the dependent variable A4IR and the independent variable FCF/sales in addition to the rest which were values and variables needed to calculate the rest of our independent and control-variables. To ensure the reliability of our collection process, we performed the same download with the dependent variable only. Afterwards, we compared these two downloads, specifically the number of companies and their A4IR values for each year. This way we ensured that including more variables during one download did not influence other variables in the same download. In conclusion, performing the download for one or more variables does not influence the number of companies and their values in the sample. Before processing the data in the statistical program, adjustments were necessary to perform in Excel. The Excel file was managed in the following way. First, we created one sheet for each variable (e.g. A4IR, FCF/sales). Formulas in Excel were applied to control for double counting of companies. By doing so, we found out that four of the companies were present twice for each variable. The values for these
duplicates were however the same through the whole period, therefore each duplicate pair was limited by one. Keeping duplicate companies with the exact same values would influence the final results. After the control of double counting, we started to calculate missing variables. We decided to calculate variables rather than using the ones from DataStream. The reason behind this is that variables such as ROA, ROE or Debt/Equity ratio are available in DataStream, but were not available for all companies we needed. With the goal to avoid limiting our number of companies, we decided to calculate these ratios based on values provided by DataStream. Doing so, we avoided deleting approximately 25 companies from the sample due some companies in DataStream missing important variables or values. The calculated variables were controlled and cross-checked against downloaded variables from DataStream, and all of them had the exact values. Afterwards, companies with reported dependent variable A4IR were matched with companies from other variables to obtain the number of companies that had a value for all chosen variables. The data necessary for the creation of the dummy-variables describing the country associated with each company was manually collected from the official web-pages of the companies.

There were originally 116 companies with reported A4IR, with total of 112 companies after deleting companies’ doubles from the list. Companies with no A4IR value in period between 2005 and 2015 were deleted, reaching 88 companies with A4IR score. The last step in creating the sample was to match the companies with A4IR score with all other variables. By performing our own calculation of the variables, we achieved a total of 81 companies in our sample. Thus, only seven companies needed to be deleted when matching dependent variables with the independent and control variables. These seven companies had to be excluded because they did not have some of the necessary values available for calculation in DataStream.

4.5. Time horizons
In the period before 2005, the companies for which the A4IR score exist in the Thomson Reuters data-base are not numerous, but the number increases between years. The time-period we chose, the years between 2005 and 2015 was based on a compromise between maximizing the number of years we would be able to include in our data-set and minimizing the risk of choosing the years in which Thomson Reuters DataStream did not provide enough data.

4.6. Major statistical considerations and variable transformations
In this section we aim to present, as accurately as possible for some of the important aspects of the modelling procedure, this should facilitate replicability for researchers interested in either adding new insight or verify the integrity of our applied method.

4.6.1. Statistical program
We used the open-source platform R for preparation and production of our output to be used as material for our result. The code is contained in an R-markdown format (.Rmd) which together with the sample contained in an Excel-spreadsheet will be available for a reasonable period after the completion and publication of this thesis upon request.

4.6.2. Missing data
Any missing data in the data-set are passively treated by omitting any data-points not present using the function na.omit() in R on the entire data-set. In our case, there are no missing data-points.
4.6.3. Enter method
We will use the stepwise method in both directions, forward and backward, in the creation of our models. This is a method of letting the statistical software select a useful subset of variables from a number of variables entered. The method can also select the order of importance between the chosen variables. However, there are some drawbacks to using this method. The criticism levelled against method targets three specific aspects. The first being that statistical software is not using the correct number of degrees of freedom in the calculations, the second that the method makes results vulnerable to sampling errors which can impede reproducibility of results, the third criticism targets the ability of the method to choose the best variable (Thompson, 1995, pp. 1). However, for the purpose of this thesis, this method is favourable to simply forcing the variables into the regression.

4.6.4. Outliers
To reduce the number of outliers and thus increase the level of robustness in our specified models we chose to execute a specific function on each variable in R. The function identifies all data-points falling outside the interval between the fifth and 95th percentile of the variable distribution. The function then continues to treat these data-points so that they are given the same value as the fifth percentile if they were found in the lower tail, and the same value as the the 95th percentile if they were found in the upper tail. Furthermore, we use the OutlierTest() function on the fitted model residuals in R to evaluate the risk of remaining outliers impacting the result of our regressions, to visualize the outliers we use a Q-Q plot generated by the qqPlot() function and leverage plots generated by the leveragePlot() function.

4.6.5. Dummy variables
To measure if there are any differences between the countries in their relation to the dependant variable we include four control variables, one for each country, in the form of a dummy variable. The inclusion of this kind of variable is a way of quantizing a categorical variable containing non-numerical data. The dummy is coded as 1 if the company is located in a specific country, and 0 for any other countries.

4.7. Econometric model
There are several methods widely used in analysing quantitative data depending on the purpose of the analysis (Saunders et al., 2009, pp. 451). Since we have made it clear that we want to investigate the relationship between several variables, it is prudent to use the multiple linear regression (Saunders et al., 2009, pp. 451). The statistical method builds a model to show the nature and strength of any linear relationships that exist between the chosen variables. For this reason, we use several repressors, or independent variables (X) to mathematically model their relationship to the dependant variable (Y) (Watsham & Parramore, 2003, pp. 187). Furthermore, the statistical technique allows for the results to be presented as the law-like generalizations we seek when working from a positivist position (Holden & Lynch, 2004, p. 9).

The true multiple regression model is formulated as:

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \ldots + \beta_nX_n + e$$

Formula 1 - The true multiple regression model
Where:
\( Y \) = The dependent variable
\( \alpha \) = The constant, \( \alpha \) is the value of \( Y \) when all the regressors have zero value (Watsham & Parramore, 2003, pp. 188). However, the \( \alpha \) needs more careful interpretation in multiple regression than in univariate regression since a large value in \( \alpha \) can signify that important variables were omitted from the model (Watsham & Parramore, 2003, pp. 202).
\( \beta_n \) = Coefficient of regression 1 through \( n \), indicating the strength and relation to the independent variable (Watsham & Parramore, 2003, pp. 189).
\( X_n \) = Regressor variable 1 through \( n \).
\( e \) = Error term, the residual error (Watsham & Parramore, 2003, pp. 189).

Using this model, we are only able to estimate the coefficients. In the estimated model stated below, estimated coefficients are denoted with a circumflex accent.

\[
\hat{Y} = \hat{\alpha} + \hat{\beta}_1X_1 + \hat{\beta}_2X_2 + \cdots + \hat{\beta}_nX_n
\]

Formula 2 - Estimated model

Each \( \beta \) signifies the strength of the relationship between the independent regressors and the dependent variable. The relationship is the partial derivative of the dependent variable with respect to the regressors, ceteris paribus (Watsham & Parramore, 2003, pp. 202).

The coefficients \( \alpha \), \( \beta \) and \( e \) are estimated using the ordinary least squares regression; we seek the Best Linear Unbiased Estimator (Watsham & Parramore, 2003, pp. 190). The OLS (ordinary least squares) regression minimizes the sum of the squared residuals around the estimated parameters (Watsham & Parramore, 2003, pp. 190), often depicted as a line drawn through a scatterplot of the distributions from the dependent and the independent variables (Watsham & Parramore, 2003, pp. 190).

4.7.1. Assumptions and treatments

The multiple linear regression models include several statistical assumptions. Should they be violated, the result can be spurious (Saunders et al., 2009, pp. 218). Assumption 1-4 below is associated with the ordinary least squares, on which the multiple regressions develop; the fifth assumption is included in multiple linear regressions.

**Assumption 1** The relationship between the true dependent and the independent variables should be of the mathematical form as the true relationship above* (Watsham & Parramore, 2003, pp. 191).

**Assumption 2** The variable \( e \), the error term, should be \( e_i \sim N(0, \sigma^2) \). That is, the variable is assumed to be normally distributed with zero mean and constant variance, meaning that homoscedasticity is assumed for the residuals (Watsham & Parramore, 2003, pp. 191).

**Assumption 3** Covariance between successive pairs of errors are assumed to be zero, (Cov \( ee_i = 0 \)), the error terms are then assumed to be independent of each other (Watsham & Parramore, 2003, pp. 191). This assumes that autocorrelation is not
introducing bias to the model results when using the data (Watsham & Parramore, 2003, pp. 192).

**Assumption 4** Any independent variable is non-stochastic (Watsham & Parramore, 2003, pp. 191).

**Assumption 5** The Multiple regression adds another statistical assumption in that independent variables are independent of each other (cov 𝑥𝑖,𝑋𝑘 = 0) where (𝑗 ≠ 𝑘) (Watsham & Parramore, 2003, pp. 203).

The linear nature of the relationship between the dependent and independent variables will when possible be evaluated by studying scatterplots, a study of the scatter plots should also reveal if heteroscedasticity is present in the data, a tell-tale sign of this phenomenon will be a triangular or “fanning-out” pattern in the residuals. The model we use is cross-sectional in nature; therefore, the risk of encountering autocorrelation should be low. We will test for and treat multicollinearity by first observing the correlation matrix, then we will drop one of the highly-correlated variables since it is impossible to add further data to our sample (Watsham & Parramore, 2003, pp. 208). In R, we use the Variance Inflation Factor, or vif() function to test for multicollinearity in the final model. For the purpose of this thesis, we have chosen the limit of 0.8 rounded to one decimal for acceptable multicollinearity. Choosing a lower cut-off point would have resulted in dropping other variables from several of the initial models.

4.7.2. **The stated model**

Causality is treated a priori in the multiple linear regression model. This implies that we must look toward the hypotheses to see the way causality is assumed to go (Watsham & Parramore, 2003, pp. 190). In accordance with the theoretical method of multiple regression stated above, the regression model we will use take the following form:

\[ \hat{Y} = \hat{\alpha} + \hat{\beta}_1X_1 + \hat{\beta}_2X_2 + \cdots + \hat{\beta}_nX_n \]

Formula 3 - Stated model

4.7.3. **The dependent variable**

The validity of the CSR score is an important issue since different indices take different factors into consideration when assigning a value representing the overall social performance. CSR assessment criteria such as the reputation index from Thomson Reuters ESG index, surveys aimed at executives or socially responsible investors and published CSR rankings will all produce different results across different industries and time periods depending on the underlying assumptions. If researchers cannot agree on the usage of single CSR metric for a firm, they risk from the very outset that their research results will not produce results like, or in accordance with other researchers.

One of the most comprehensive reputational metrics is the ESG index from Thomson Reuters. This index traces a corporation’s environmental, social and governance practices, presented as a calculated score on the overall ESG performance. This CSR rating provides investors, corporate executives and quantitative analysts with objective ESG information based on 250+ key performance indicators and 750+ individual data points along with their original data sources (Thomson Reuters, n.d.). The variable is created from data related to the three pillars shown in the table below as the breakdown of the ESG variable (Thomson Reuters, 2013).
Based on the reputation of Thomson Reuters and the suitability of their scores for our purpose, we have chosen their ESG score as the dependent variable in our research. The score is the “Equal-weighted rating”, coded A4IR in the resource database and termed CSR in our sample and models.

\[
EWR = \hat{\alpha} + \hat{\beta}_1X_1 + \hat{\beta}_2X_2 + \cdots + \hat{\beta}_nX_n
\]

Formula 4 - Model with dependent variable

4.7.4. Independent variables
Besides difficulties on CSR assessment criteria, the same applies to different measures on financial performance. There is broad range of different measures of financial performance, mostly integrated into four main groups: accounting based, market based, risk based and other measures (Pava & Krausz, 1996). However, when the research uses a measure through many different indicators, this leads to difficulties in agreeing upon one definite argument for the relationship between CSR and CFP (Vogel, 2005).

The most frequent dependent variables of CFP used in empirical research are financial accounting returns, specifically Return on Equity and Return on Assets (Tang et al., 2012). Other, less frequently used accounting CFP variables are return on sales or profit margin. Firm size seems to matter more in this research field, based on Adams and Hardwick’s (1998) findings that larger companies can sacrifice more from earned profit as supported in their study of 100 UK listed companies.

Based on this assumption, the investigation of whether firm size and profitability affects corporate investment in CSR followed suit. Vintila and Duca (2013) found in their study on CFP, company size and CSR, that profitability and size have a positive impact on CSR investments. However, the study has limitations in the sample size used and the timeframe analysed. Additionally, Seifert et al. (2004) argues that most accounting measures of profitability used in studies are not relevant measures of financial slack. Instead, they argue that cash flow is a more appropriate measure of money being allocated to charitable or otherwise voluntary purposes.

We have chosen our sample based on perceived similarities between the Nordic countries as has been discussed above. However, to reduce the risk of obtaining biased results based on the perceived similarities, we have chosen to control for any differences between the countries through the use dummy-variables. Furthermore, we control for

<table>
<thead>
<tr>
<th>Pillars</th>
<th>Constitutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental</td>
<td>Resource usage, emissions, environmental activism/initiative, product/process innovation</td>
</tr>
<tr>
<td>Social</td>
<td>Employment quality, health and safety issues training, diversity, human rights, community involvement, product responsibility</td>
</tr>
<tr>
<td>Governance</td>
<td>Board structure, compensation policy, board functions, financial and operational transparency, shareholder rights, vision and strategy</td>
</tr>
</tbody>
</table>

Figure 3 - ESG variable breakdown (Thomson Reuters, 2013)
the solidity of the company, taking differences in financial leverage (Debt/Equity) into account as a control-variable. Finally, there are subtle differences between the cash-flow measures in terms of their definitions and the level of discretion connected to the measured cash flows, for example the free cash flows are more discretionary than the cash flow from operations, in the latter we have yet to consider investments or capex. To operationalize the cash-flow types of the independent variables, we have chosen to perform our analysis on them as ratios to the firm size, measured either as the value of sales or number of employees with the employees reflecting an internal size, and sales an external size.

4.7.5. The complete initial model

Our complete initial model considers the previous research on the subject in that we include and test the importance of variables, and their subsequent relationship to corporate social performance as explained above. Before considerations taken to multicollinearity or other exclusions, our complete initial model takes the form of:

\[
EWWR = \hat{\alpha} + \hat{\beta}_1 \frac{FCF}{Sales} + \hat{\beta}_2 \frac{FCF}{Number\ of\ employees} + \hat{\beta}_3 \frac{CF}{Sales} \\
+ \hat{\beta}_4 \frac{CF}{Op\ Act} + \hat{\beta}_5 \frac{Number\ of\ employees}{Op\ Act} + \hat{\beta}_6 \frac{Number\ of\ employees}{Sales} + \hat{\beta}_7 ROA + \hat{\beta}_8 ROE \\
+ \hat{\beta}_9 Profit\ Margin + \hat{\beta}_{10} \frac{Debt}{Equity} + \hat{\beta}_{11} Sweden_{dummy} \\
+ \hat{\beta}_{12} Norway_{dummy} + \hat{\beta}_{13} Denmark_{dummy} + \hat{\beta}_{14} Finland_{dummy}
\]

Formula 5 - The complete regression model

4.7.6. Modelling procedure and suitability

The initial model is first run through a stepwise regression which selects a second model containing the variables that best fits the data. This specified second model is then regressed again to obtain the sign and value of the regression coefficients. To investigate whether the model produced by the stepwise regression is significant, that is, if the independent variables chosen do indeed have a linear relationship with the dependent variable, i.e. that the coefficients of regression are significantly different from zero, we utilize the Anova() function in R.

4.8. Ethical and social considerations

In undertaking the research in this thesis, we submit ourselves to a deontological view on ethics. An alternative stance to take would be the teleological position which posits that the result justifies the means, a position that deontology rejects (Saunders et al., 2009, pp. 184). At a social level, we should strive to perform research ethically since this will ensure continued willingness of participants in the behavioural and social sciences, and a continued trust in researchers in all sciences. Distorting research is detrimental not only to the researchers or corporate entities involved, it also removes trust and hinder research progress. Making sure that we can trust sources of information, research and the associated results will positively impact our future as a species.
Given the quantitative nature and the chosen archival strategy of this thesis, there is a very small risk that what our actions will impact any specific person negatively, this risk is reduced further due to the level of aggregation we consider when choosing only to analyse businesses (Saunders et al., 2009, pp. 186). We do not intend to criticize the corporate social actions taken by these companies; we seek only to establish relationships.

We use the internet to gather our data and receive resource-specific support, and thus we argue that netiquette, the term given to appropriate ethical use of, and behaviour, while on the internet applies to us (Saunders et al., 2009, pp. 187). However, the focus on secondary data results in that apart from being generally polite and not distorting any data given to us, the netiquette pose no problems and does not need to be discussed at length.

This thesis only uses secondary type data from a well-respected data source which does not contain any personal data (Saunders et al., 2009, pp. 197, 199) which would require special treatment both legally and ethically (Saunders et al., 2009, pp. 202). What is important however, is that we strive to retain a high degree of objectivity when performing our research (Saunders et al., 2009, pp. 199), much in line with positivism and the value-free axiological stance taken (Saunders et al., 2009, pp. 119). Not putting ourselves at risk of getting harmed, or to put other researchers in harm’s way when performing our research is important (Saunders et al., 2009, pp. 202), however as mentioned above, the archival nature limits the risk of threats or danger. As a line in ensuring that our research is undertaken in an ethically sound way, and that our results are as free of bias as possible, we have taken great care to not misrepresent any of the data in our collection-process, when in doubt we have cross-checked any calculated values with data available in the resource, as has been stated in the data-collection part above (Saunders et al., 2009, pp. 202). Furthermore, we have taken care to represent the information in this thesis, both empirical and theoretical, as truthfully and unbiased as possible. Any misrepresentations are unintentional.

4.9. Data-source evaluation and criticism of the literature
An implication of adhering to the archival strategy is the use of secondary data obtained from data-sources. Saunders et al (2009, pp. 273) describes three steps with subordinated activities to consider when evaluating the chosen data-source. The first one concerns the overall suitability of the data and how well it suits the research question, including paying attention to the measurement validity and coverage. The second is more focused, a precise suitability of data and analyses needed, including evaluating the validity, reliability and measurement bias. The third and final step concerns the judgement of using the data on its cost and benefit characteristics (Saunders et al., 2009, pp. 273).

In this study, we have chosen to rely on Thomson Reuters DataStream as the source from which we collect the data required for our study. At a first glance, we found that DataStream contains the variables we sought in the form of a measure of corporate social performance and several independent financial variables. Since our research is cross-sectional we required data over several years for our chosen indices (Saunders et al., 2009, pp. 274). DataStream could provide the data necessary for us to continue; hence we argue that the coverage is good and that DataStream passed the first step.
The precise suitability and validity of DataStream as a source can in our case be inferred by the authority or reputation of the source itself (Dochartaigh, 2002, cited in Saunders et al., 2009, pp. 274). A continued trust in the credibility of the data contained and presented in DataStream is crucial for its survival. It is therefore highly probable that great care has been taken in the collection, calculation and presentation of the data present in the database. On the same ground, we argue that the risk of measurement bias being present in the original data to be low. Biases such as deliberate distortion of the data in DataStream would surely impact the credibility of the database negatively and cripple the validity of any subsequent usage (Jacob, 1994, cited in Saunders et al., 2009, pp. 277). Based on the reputation of Thomson Reuters DataStream, we argue that the second step is cleared.

The third step is cleared, but the cost-benefit discussion becomes slightly biased since we do not personally pay for the service provided. In addition to the amount of readily available and credible data in the database, Thomson Reuters provide accurate and speedy support to users of the data-base and software resource. We see this as having a positive impact not only when considered in the cost-benefit analysis, but also as a reliability-augmenting tool available to researchers.

In undertaking this evaluation of the data-source, we aim to satisfy the need for high credibility of any value being used in the study. This is an important implication to pay attention to when undertaking positivist epistemic research (Saunders et al., 2009, pp. 113, 119).

When appropriate, we have taken care to only seek information in articles from well-known sources such as the Umeå University library, the university databases and google-scholar. There is some spread as the articles differ in age, but recent articles were chosen before older ones. The age of an article was disregarded when used to explain or in conjunction with general phenomena or famous contributions to the field. Care was taken when searching for information that it came from a well-reputed source as mentioned above (Dochartaigh, 2002, cited in Saunders et al., 2009, pp. 274). Despite these actions, there is a risk that some information is less credible than other. Information pertaining to the creation of the program undertaking the analysis was found in the help section in the R packages, solutions to problems which occurred when coding were sought online, and codes are in themselves value-free if they achieve the required function.
CHAPTER 5. Results

In this chapter, we present the most important findings of our result. The chapter commences with descriptive statistics of our population for the whole period and individual subperiods including a discussion on our population. We continue by presenting the individual initial regression models, the final models chosen through stepwise regression and discussing the suitability of each model. Finally, we present the findings of the regressions of our final model.

5.1. Descriptive statistics

To keep this section as brief and readable as possible we have chosen to not present each variable in depth as this would be strenuous to the reader given the number of variables, therefore we will not present each individual histogram and scatterplot relation between the dependent and independent variables. The information will be available on request from the authors.

<table>
<thead>
<tr>
<th>Variable</th>
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<th>Standard Deviation</th>
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Figure 4 - Whole population, 2005-2015

When inspecting the histograms of the variables contained in our data-set we found that most, if not all variables were not normal in their distribution. The histograms of the dependent CSR-variable were highly negatively skewed starting from year 2008 through year 2015. In the years between, more density was spaced out over the histogram, but not resembling normality. The independent variables on the other hand exhibited a highly positively skewed distribution. Between the independent variables, Return on Equity and Return on Assets were observed to have some semblance of normality or at least a more centred distribution-mass in some years. Furthermore, differing levels of kurtosis was present in the majority of the distributions, with many variables showing a tendency to have a fat tails.

Examining the scatter-plots between the dependent variable and each independent variable showed that most relations were curve-linear to varying degrees, either concave or convex. Return on Assets and Return on Equity showed the most linear relationship present between the dependent and independent variables in our data-set with Debt/Equity mostly showing a strong convex relationship. Treating the data-set for outliers improved the interpretability of the scatter-plots.

In examining the correlation matrices between the subsets of variables to be used for each regression we found that some variables were highly correlated. The types of
variables consisting of cash-flow divided by either the number of employees or sales for each individual year were highly correlated to each other based on the denominator. The correlation measured using Pearson’s method showed values ranging from 0.9 to 1.0 when limiting to one decimal. In addition, Return on Equity and Return on Assets showed a correlation of 0.9 in the years 2008 and 2009.

In realising these correlations, we opted to remove Return on Assets from the models concerning the years 2008 and 2009. Furthermore CF/Sales, CF/employees, CF from operations/Sales and CF from operations/Employees were removed from every model, leaving FCF/Sales and FCF/Employees as our independent variables to be used in the models.

Below we present the variables used in our models based on their fiscal year in separate subsets.

**Subperiod 2005**

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**Figure 5 - Descriptive statistics subperiod 2005**

**Subperiod 2006**

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### Figure 7 - Descriptive statistics subperiod 2007

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### Figure 11 - Descriptive statistics subperiod 2011

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### Figure 15 - Descriptive statistics subperiod 2015

49
5.2. Results of the individual models

From here we leave the descriptive statistics and present the main findings of our research. For each model, we present the reduction from the initial model to the final model, a discussion on model suitability and ending each subsection of the individual models with a summary of the model coefficients together with the explanatory power and p-value significance of the model. Plots, histograms, outputs and test results can be found in the appendix under the year pertaining to the specific model. The residuals mentioned below are the model residuals from the final model regression.

5.2.1. CSR year 2006 regressed on Independents year 2005

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<tr>
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Figure 16 - Result of stepwise regression, 2006 on 2005

We fed the initial model into R and performed a stepwise regression to determine which model best fit the data. The result is shown above as the final model.

**Model suitability for CSR 2006 on Independents 2005**

We regressed the final model independently and subjected the result to an ANOVA test to investigate whether the independent variables were related to the dependent variable. The Anova table indicates that the final model is significant on at least a 95% confidence level. FCF/Sales 2005 is with 95% while the Net PM 2005 and the Denmark dummy is with 99.9% confidence related to CSR 2006. The distribution of the residuals is approximately normal, there is no evidence of patterns indicating heteroscedasticity in the scatterplot and the Variance Inflation Factor indicates low or no multicollinearity between the variables (< 10).
Final model summary CSR 2006 on Independents 2005

| Variable        | Year/Type | Estimate | Std. Error | t value | Pr(>|t|) | Significance |
|-----------------|-----------|----------|------------|---------|---------|--------------|
| Intercept       | -         | 71.329   | 5.168      | 13.802  | < 2e-16 | ***          |
| FCF/Sales       | 2005      | 67.257   | 28.259     | 2.381   | 0.0197   | *            |
| Net PM          | 2005      | -138.124 | 35.471     | -3.894  | 0.0002   | ***          |
| Denmark         | Dummy     | -35.611  | 7.664      | -4.646  | 1.37e-05 | ***          |
| Multiple R-squared |         | 0.3105   |            |         |         |              |
| Adjusted R-squared |      | 0.2836   |            |         |         |              |
| p-value         |           | 2.459e-06|            |         |         |              |

Signif codes: 0 *** 0.001 ** 0.01 * 0.05 . 0.1 1

Figure 17 - Final model summary, 2006 on 2005

Above we present the results we received when we performed the multiple linear regression on the Final model. Using the adjusted $R^2$ as an indicator for goodness of fit, the model explains 28.36% of the variation in the response-variable. The relationship between FCF/Sales 2005 and CSR 2006 is positive and significant at a 95% confidence level. The relationship between Net profit 2005 and CSR 2006 is negative at a 99.9% confidence-level and there is a negative relationship between the Denmark dummy-variable and CSR 2006 at a 99.9% confidence level. The p-value for the model is 2.459e-06 indicating significance at the 99.9% confidence level.

5.2.2. CSR year 2007 regressed on Independents year 2006

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</table>

Figure 18 - Result of stepwise regression, 2007 on 2006

We fed the initial model into R and performed a stepwise regression to determine which model best fit the data. The result is shown above as the final model.

Model suitability for CSR 2007 on Independents 2006

We regressed the final model independently and subjected the result to an ANOVA test to investigate whether the independent variables were related to the dependent variable. The Anova table indicates that the final model is significant on at least a 95%
confidence level. FCF/employees 2006 and ROA 2006 are significant at a 95% confidence level. FCF/sales 2006, Net PM 2006 and the Denmark dummy-variable are significant at a 99% confidence level. The distribution of the residuals is not normal and looks to be negatively skewed. There is no indication of heteroscedasticity in the model residuals and the Variance Inflation Factor indicates low or no multicollinearity between the variables ( < 10).
Final model summary CSR 2007 on Independents 2006

| Variable       | Year/Type | Estimate | Std. Error | t value | Pr(>|t|) | Significance |
|----------------|-----------|----------|------------|---------|---------|--------------|
| Intercept      | -         | 6.203e-01| 7.035e+00 | 8.817   | 3.31e-13 | ***          |
| FCF/Sales      | 2006      | 1.014e+02| 3.564e+01 | 2.846   | 0.00570  | **           |
| FCF/Employees  | 2006      | -5.676e-03| 2.839e-03 | -2.000  | 0.04918  | *            |
| ROA            | 2006      | 1.228e+02| 5.633e+01 | 2.181   | 0.03235  | **           |
| Net PM         | 2006      | -1.517e+02| 5.143e+01 | -2.950  | 0.00423  | **           |
| Denmark        | Dummy     | -2.687e+01| 8.019e+00 | -3.351  | 0.00126  | **           |
| Multiple R-squared |       | 0.2523         |          |         |         |              |
| Adjusted R-squared |     | 0.2025         |          |         |         |              |
| p-value        |           | 0.0004732      |          |         |         |              |

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Figure 19 - Final model summary, 2007 on 2006

Above we present the results we received when we performed the multiple linear regression on the Final model. Using the adjusted R² as an indicator for goodness of fit, the model explains 20.25% of the variation in the response variable. There is a positive relationship between FCF/Sales 2006 and CSR 2007 on a 99% confidence level. There is a negative relationship between FCF/employees 2006 and CSR 2007 on a 95% confidence level. The relationship between ROA 2006 and CSR 2007 is on a 95% confidence level. There is a negative relationship between Net PM 2006 and CSR 2007 on a 99% confidence level and there is a negative relationship between the Denmark dummy-variable and CSR 2007 is on a 99% confidence level. The p-value for the model is 0.0004732 indicating significance at the 99.9% confidence level.

5.2.3. CSR year 2008 regressed on Independents year 2007

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<td>2007</td>
</tr>
<tr>
<td></td>
<td>Denmark</td>
</tr>
<tr>
<td></td>
<td>Dummy</td>
</tr>
</tbody>
</table>

Figure 20 - Result of stepwise regression, 2008 on 2007

We fed the initial model into R and performed a stepwise regression to determine which model best fit the data. The result is shown above as the final model.

Model suitability for CSR 2008 on Independents 2007

53
We regressed the final model independently and subjected the result to an ANOVA test to investigate whether the independent variables were related to the dependent variable. The Anova table indicates that the final model is significant on at least a 95% confidence level. FCF/Sales 2007 and FCF/employees 2007 are significant at a 99% confidence level. Net PM 2007 is significant at 95% confidence level and the Denmark dummy-variable is significant at a 99.9% confidence level. The distribution of residuals is not normal and is negatively skewed, There is no indication of heteroscedasticity in the model residuals and the Variance Inflation Factor indicates low or no multicollinearity between the variables ( < 10).

**Final model summary CSR 2008 on Independents 2007**

| Variable      | Year/Type | Estimate | Std. Error | t value | Pr(>|t|) | Significance |
|---------------|-----------|----------|------------|---------|---------|--------------|
| Intercept     | -         | 67.742613| 5.259118   | 12.881  | < 2e-16 | ***          |
| FCF/Sales     | 2007      | 125.765597| 30.377069  | 3.194   | 0.002044 | ++           |
| FCF/employees | 2007      | -0.010783 | 0.003359   | -3.210  | 0.001943 | ++           |
| Net PM        | 2007      | -69.74974 | 31.083427  | -2.245  | 0.027870 | *            |
| Denmark       | Dummy     | -26.954947| 7.372262   | -3.656  | 0.000469 | ***          |

Multiple R-squared 0.2495
Adjusted R-squared 0.21
p-value 0.0001926

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Figure 21 - Final model summary, 2008 on 2007

Above we present the results we received when we performed the multiple linear regressions on the Final model. Using the adjusted $R^2$ as an indicator for goodness of fit, the model explains 21% of the variation in the response variable. There is a positive relationship between FCF/Sales 2007 and CSR 2008 on a 99% confidence level. There is a negative relationship between FCF/employees 2007 and CSR 2008 on a 99% confidence level. There is a negative relationship between Net PM 2007 and CSR 2008 on a 95% confidence level and there is a negative relationship between the Denmark dummy-variable and CSR 2008 on a 99.9% confidence level. The p-value for the model is 0.0001926 indicating significance at the 99.9% confidence level.
5.2.4. CSR year 2009 regressed on Independents year 2008

<table>
<thead>
<tr>
<th>Initial model Year/Type</th>
<th>Final model Year/Type</th>
</tr>
</thead>
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<tr>
<td><strong>Dependent</strong> CSR-score 2009</td>
<td><strong>Dependent</strong> CSR-score 2009</td>
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<tr>
<td><strong>Independents</strong> FCF/Sales 2008</td>
<td><strong>Independents</strong> FCF/Sales 2008</td>
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<tr>
<td>FCF/Employees 2008</td>
<td>Net PM 2008</td>
</tr>
<tr>
<td>ROE 2008</td>
<td>Debt/Equity 2008</td>
</tr>
<tr>
<td>Net PM 2008</td>
<td>Denmark Dummy</td>
</tr>
<tr>
<td>Debt/Equity 2008</td>
<td></td>
</tr>
<tr>
<td>Sweden Dummy</td>
<td></td>
</tr>
<tr>
<td>Denmark Dummy</td>
<td></td>
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<tr>
<td>Finland Dummy</td>
<td></td>
</tr>
<tr>
<td>Norway Dummy</td>
<td></td>
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</tbody>
</table>

Figure 22 - Result of stepwise regression, 2009 on 2008

We fed the initial model into R and performed a stepwise regression to determine which model best fit the data. The result is shown above as the final model.

Model suitability for CSR 2009 on Independents 2008

We regressed the final model independently and subjected the result to an ANOVA test to investigate whether the independent variables were related to the dependent variable. The Anova table indicates that the final model is significant on at least a 90% confidence level. FCF/Sales 2008 is significant at a 95% confidence level. Net PM 2008 and Debt/Equity 2008 are significant at 90% confidence level and the Denmark dummy-variable is significant at a 95% confidence level. The distribution of residuals is not normal and but is centred, there is no indication of heteroscedasticity in the model; however the residuals are showing a linear relationship. The Variance Inflation Factor indicates low or no multicollinearity between the variables (< 10).

Final model summary CSR 2009 on Independents 2008

| Variable | Year/Type | Estimate | Std. Error | t value | Pr(>|t|) | Significance |
|----------|-----------|----------|------------|---------|---------|--------------|
| Intercept | -         | 83.074   | 4.692      | 17.705  | <2e-16  | ***          |
| FCF/Sales | 2008      | -51.793  | 22.606     | -2.291  | 0.0247  | *            |
| Net PM   | 2008      | 57.700   | 29.298     | 1.969   | 0.0525  | .            |
| Debt/Equity | 2008       | -2.685   | 1.372      | -1.958  | 0.0539  | .            |
| Denmark | Dummy | -18.388  | 7.084      | -2.624  | 0.0105  | *            |

Multiple R-squared 0.2004
Adjusted R-squared 0.1583
p-value 0.001738

Signif. codes: 0 *** 0.001 ** 0.01 * 0.05 . 0.1   1

Figure 23 - Final model summary, 2009 on 2008

Above we present the results we received when we performed the multiple linear regressions on the Final model. Using the adjusted R² as an indicator for goodness of fit,
the model explains 15% of the variation in the response variable. There is a negative relationship between FCF/Sales 2008 and CSR 2009 on a 95% confidence level. There is a positive relationship between Net PM 2008 and CSR 2009 on a 90% confidence level. There is a negative relationship between Debt/Equity 2008 and CSR 2009 on a 90% confidence level and there is a negative relationship between the Denmark dummy-variable and CSR 2009 on a 95% confidence level. The p-value for the model is 0.001758 indicating significance at the 99% confidence level.

5.2.5. CSR year 2010 regressed on Independents year 2009

<table>
<thead>
<tr>
<th>CSR 2010 and Independents 2009</th>
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<th>Final model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent</strong></td>
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</tr>
<tr>
<td><strong>Independents</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCF/Sales</td>
<td>2009</td>
<td></td>
</tr>
<tr>
<td>FCF/employees</td>
<td>2009</td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>2009</td>
<td></td>
</tr>
<tr>
<td>Net PM</td>
<td>2009</td>
<td></td>
</tr>
<tr>
<td>Debt/Equity</td>
<td>2009</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>Dummy</td>
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</tr>
<tr>
<td>Denmark</td>
<td>Dummy</td>
<td></td>
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<tr>
<td>Finland</td>
<td>Dummy</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>Dummy</td>
<td></td>
</tr>
</tbody>
</table>

Figure 24 - Result of stepwise regression, 2010 on 2009

We fed the initial model into R and performed a stepwise regression to determine which model best fit the data. The result is shown above as the final model.

**Model suitability for CSR 2010 on Independents 2009**

We regressed the final model independently and subjected the result to an ANOVA test to investigate whether the independent variables were related to the dependent variable. The Anova table indicates that the final model is significant on at least a 95% confidence level. FCF/employees 2009 is significant at a 99% confidence level and the Denmark dummy-variable is significant at a 95% confidence level. The distribution of residuals is negatively skewed with relatively fat lower tail. The scatterplot shows a linear pattern and the Variance Inflation Factor shows low or no multicollinearity ( < 10).
Final model summary CSR 2010 on Independents 2009

<table>
<thead>
<tr>
<th>Model summary, CSR 2010 and Independents 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>Intercept</td>
</tr>
<tr>
<td>FCF/Employees</td>
</tr>
<tr>
<td>Denmark Dummy</td>
</tr>
</tbody>
</table>

Multiple R-squared 0.1488
Adjusted R-squared 0.127
p-value 0.001864

Signif codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 1

Figure 25 - Final model summary, 2010 on 2009

Above we present the results we received when we performed the multiple linear regressions on the Final model. Using the adjusted $R^2$ as an indicator for goodness of fit, the model explains 12% of the variation in the response variable. There is a negative relationship between FCF/Sales 2009 and CSR 2010 on a 99% confidence level. There is also a negative relationship between the Denmark dummy-variable and CSR 2010 on a 95% confidence level. The p-value for the model is 0.001864 indicating significance at the 99% confidence level.

5.2.6. CSR year 2011 regressed on Independents year 2010

<table>
<thead>
<tr>
<th>CSR 2011 and Independents 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial model</td>
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<tr>
<td>Year/Type</td>
</tr>
<tr>
<td>Dependent</td>
</tr>
<tr>
<td>Independents</td>
</tr>
<tr>
<td>FCF/Sales</td>
</tr>
<tr>
<td>ROA</td>
</tr>
<tr>
<td>ROE</td>
</tr>
<tr>
<td>Net PM</td>
</tr>
<tr>
<td>Debt/Equity</td>
</tr>
<tr>
<td>Sweden</td>
</tr>
<tr>
<td>Norway</td>
</tr>
</tbody>
</table>

Figure 26 - Result of stepwise regression, 2011 on 2010

We fed the initial model into R and performed a stepwise regression to determine which model best fit the data. The result is shown above as the final model.

Model suitability for CSR 2011 on Independents 2010

We regressed the final model independently and subjected the result to an ANOVA test to investigate whether the independent variables were related to the dependent variable. The Anova table indicates that at least one variable is not significant at 90% confidence level. FCF/employees 2010 is significant at a 95% confidence level, the Debt/Equity 2010 is not significant in the model at 90% confidence level and the Denmark dummy-
variable is significant at a 99% confidence level. The distribution of residuals show a negative skew with fat lower tail, the scatterplot shows a linear pattern and the Variance Inflation Factor indicates low or no multicollinearity between the variables used in the model ( < 10).

**Final model summary CSR 2011 on Independents 2010**

| Variable       | YearType | Estimate | Std. Error | t value | Pr(>|t|) | Significance |
|----------------|----------|----------|------------|---------|---------|--------------|
| Intercept      | -        | 88.576887| 3.181479   | 27.841  | < 2e-16 | ***          |
| FCF/Employees  | 2010     | -0.006796| 0.0002864  | -2.372  | 0.02017 | *            |
| Debt/Equity    | 2010     | -2.358485| 1.485431   | -1.588  | 0.11544 |              |
| Denmark        | Dummy    | -17.825480| 6.163069  | -2.892  | 0.00497 | **           |
| Multiple R-squared |        | 0.1871   |            |         |         |              |
| Adjusted R-squared |        | 0.1554   |            |         |         |              |
| p-value        |          | 0.001106 |            |         |         |              |

*Signif. codes:  **0’’’’  **0.001 ’’’’  0.01 ’’’’  0.05 ’’’’  1

Figure 27 - Final model summary, 2011 on 2010

Above we present the results we received when we performed the multiple linear regressions on the Final model. Using the adjusted $R^2$ as an indicator for goodness of fit, the model explains 15.54% of the variation in the response variable. There is a negative relationship between FCF/employees 2010 and CSR 2011 on a 95% confidence level. There is also a negative relationship between the Denmark dummy-variable and CSR 2011 on a 95% confidence level. The Debt/Equity 2010 shows a negative relationship but is not significant at a 90% confidence level. The p-value for the model is 0.001106 indicating significance at the 99% confidence level.

**5.2.7. CSR year 2012 regressed on Independents year 2011**

**CSR 2012 and Independents 2011**

<table>
<thead>
<tr>
<th></th>
<th>Initial model</th>
<th>Final model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year/Type</td>
<td>Year/Type</td>
</tr>
<tr>
<td>Dependents</td>
<td>CSR-score 2012</td>
<td>CSR-score 2012</td>
</tr>
<tr>
<td>Independents</td>
<td>FCF/Sales 2011</td>
<td>FCF/Sales 2011</td>
</tr>
<tr>
<td></td>
<td>FCF/employees 2011</td>
<td>Debt/Equity 2011</td>
</tr>
<tr>
<td></td>
<td>ROA 2011</td>
<td>Denmark Dummy</td>
</tr>
<tr>
<td></td>
<td>ROE 2011</td>
<td>Norway Dummy</td>
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<td></td>
<td>Net.PM 2011</td>
<td>Sweden Dummy</td>
</tr>
<tr>
<td></td>
<td>Debt/Equity 2011</td>
<td>Denmark Dummy</td>
</tr>
<tr>
<td></td>
<td>ROE 2011</td>
<td>Finland Dummy</td>
</tr>
<tr>
<td></td>
<td>ROA 2011</td>
<td>Norway Dummy</td>
</tr>
<tr>
<td></td>
<td>Net.PM 2011</td>
<td>Denmark Dummy</td>
</tr>
<tr>
<td></td>
<td>Debt/Equity 2011</td>
<td>Sweden Dummy</td>
</tr>
<tr>
<td></td>
<td>ROE 2011</td>
<td>Norway Dummy</td>
</tr>
<tr>
<td></td>
<td>Net.PM 2011</td>
<td>Denmark Dummy</td>
</tr>
</tbody>
</table>

Figure 28 - Result of stepwise regression, 2012 on 2011
We fed the initial model into R and performed a stepwise regression to determine which model best fit the data. The result is shown above as the final model.

Model suitability for CSR 2012 on Independents 2011
We regressed the final model independently and subjected the result to an ANOVA test to investigate whether the independent variables were related to the dependent variable. The Anova table indicates that the final model is significant on at least a 90% confidence level. FCF/Sales 2011 is significant at a 95% confidence level, Debt/Equity is significant at a 90% confidence level and the Denmark dummy-variable is significant at a 95% confidence level. The distribution of residuals is centred, there is some signs of heteroscedasticity in the model since a fanning-out pattern can be seen in the scatter-plot, however the Variance Inflation Factor indicates low or no multicollinearity ( < 10).

Final model summary CSR 2012 on Independents 2011

| Variable     | YearType | Estimate | Std.Error | t value | Pr(>|t|) | Significance |
|--------------|----------|----------|-----------|---------|---------|--------------|
| Intercept    | -        | 89.150   | 3.709     | 24.033  | <2e-16  | ***          |
| FCF/Sales    | 2011     | -37.383  | 18.624    | -2.007  | 0.0482  | *            |
| Debt/Equity  | 2011     | -2.060   | 1.143     | -1.802  | 0.0755  | .            |
| Denmark      | Dummy    | -15.015  | 5.691     | -2.638  | 0.0101  | *            |
| Multiple R-squared |       | 0.1765   |           |         |         |              |
| Adjusted R-squared |     | 0.1444   |           |         |         |              |
| p-value      |          | 0.001779 |           |         |         |              |

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Figure 29 - Final model summary, 2012 on 2011

Above we present the results we received when we performed the multiple linear regressions on the Final model. Using the adjusted R-squared as an indicator for goodness of fit, the model explains 14.4% of the variation in the response variable. There is a negative relationship between FCF/Sales 2011 and CSR 2012 on a 95% confidence level. The Debt/Equity 2011 shows a negative relationship at a 90% confidence level. There is also a negative relationship between the Denmark dummy-variable and CSR 2012 on a 95% confidence level. The p-value for the model is 0.001779 indicating significance at the 99% confidence level.
5.2.8. CSR year 2013 regressed on Independents year 2012

We fed the initial model into R and performed a stepwise regression to determine which model best fit the data. The result is shown above as the final model.

Model suitability for CSR 2013 on Independents 2012
We regressed the final model independently and subjected the result to an ANOVA test to investigate whether the independent variables were related to the dependent variable. The Anova table indicates that at least one variable is not significant at 90% confidence level. FCF/sales 2012 is significant at a 99.9% confidence level, the Debt/Equity 2012 is not significant in the model at 90% confidence level and the Denmark dummy-variable is significant at a 90% confidence level. The distribution of residuals is not normal and is negatively skewed with fat lower tail. There is some evidence of heteroscedasticity in the model according to the scatter plot, however the Variance Inflation Factor indicates low or no multicollinearity (< 10).

Final model summary CSR 2013 on Independents 2012

Above we present the results we received when we performed the multiple linear regressions on the Final model. Using the adjusted R² as an indicator for goodness of fit,
the model explains 22.4% of the variation in the response variable. There is a negative relationship between FCF/sales 2012 and CSR 2013 on a 99.9% confidence level. There is also a negative relationship between the Denmark dummy-variable and CSR 2013 on a 90% confidence level. The Debt/Equity 2012 shows a negative relationship but is not significant at a 90% confidence level. The p-value for the model is 4.86e-05 indicating significance at the 99.9% confidence level.

5.2.9. CSR year 2014 regressed on Independents year 2013

<table>
<thead>
<tr>
<th>CSR 2014 and Independents 2013</th>
<th>Initial model</th>
<th>Year/Type</th>
<th>Final model</th>
<th>Year/Type</th>
</tr>
</thead>
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<td><strong>Dependent</strong></td>
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<td><strong>Dependent</strong></td>
<td>CSR-score</td>
</tr>
<tr>
<td><strong>Independents</strong></td>
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<td>2013</td>
<td><strong>Independents</strong></td>
<td>FCF/Sales</td>
</tr>
<tr>
<td></td>
<td>FCF/Employees</td>
<td>2013</td>
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<td>ROA</td>
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<td>2013</td>
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<td>Finland D</td>
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<td></td>
<td>Debt/Equity</td>
<td>2013</td>
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<td>Dummy</td>
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<tr>
<td>Norway D</td>
<td>Dummy</td>
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</tbody>
</table>

Figure 32 - Result of stepwise regression, 2014 on 2013

We fed the initial model into R and performed a stepwise regression to determine which model best fit the data. The result is shown above as the final model.

Model suitability for CSR 2014 on Independents 2013

We regressed the final model independently and subjected the result to an ANOVA test to investigate whether the independent variables were related to the dependent variable. The Anova table indicates that at least one variable is not significant at 90% confidence level. FCF/sales 2013 is significant at a 99% confidence level, ROE 2013 and the Finland Dummy-variable are significant at a 95% confidence level whereas ROA 2013 is significant at 90% confidence level. The Sweden dummy-variable is not significant in the model at 90% confidence level. The distribution of residuals are approximately normal with added centred mass and a slight negative skew, there is no indication of heteroscedasticity present in the model and the Variance Inflation Factor shows low or no multicollinearity ( < 10).
Final model summary CSR 2014 on Independents 2013

| Variable | Year/Type | Estimate | Std. Error | t value | Pr(>|t|) | Significance |
|----------|-----------|----------|------------|---------|----------|--------------|
| Intercept | -         | 80.222   | 5.357      | 14.976  | <2e-16   | ***          |
| FCF/Sales | 2013      | -45.096  | 14.252     | -3.164  | 0.00225  | **           |
| ROA       | 2013      | 93.925   | 53.930     | 1.742   | 0.08568  | .            |
| ROE       | 2013      | -53.699  | 26.238     | -2.047  | 0.04420  | *            |
| Sweden Dummy |        | 7.528    | 4.983      | 1.511   | 0.13506  |              |
| Finland Dummy |       | 14.251   | 6.320      | 2.255   | 0.02706  | *            |

Multiple R-squared 0.2412
Adjusted R-squared 0.1906
p-value 0.0007737

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Figure 33 - Final model summary, 2014 on 2013

Above we present the results we received when we performed the multiple linear regressions on the Final model. Using the adjusted R-squared as an indicator for goodness of fit, the model explains 19.06% of the variation in the response variable. There is a negative relationship between FCF/sales 2013 and CSR 2014 on a 99% confidence level. There is a positive relationship between ROA 2013 and CSR 2014 on a 90% confidence level and a negative relationship between ROE 2013 and CSR 2014 on a 95% confidence level. There is also a positive relationship between the Finland dummy-variable and CSR 2014 on a 95% confidence level, however the Sweden dummy-variable shows a positive relationship but is not significant at a 90% confidence level. The p-value for the model is 0.0007737 indicating significance at the 99.9% confidence level.

5.2.10. CSR year 2015 regressed on Independents year 2014

<table>
<thead>
<tr>
<th>Initial model</th>
<th>Final model</th>
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<tbody>
<tr>
<td>CSR 2015 and Independents 2014</td>
<td>CSR 2015 and Independents 2014</td>
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<td>Dependent</td>
<td>Year/Type</td>
</tr>
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<td>CSR-score</td>
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</tbody>
</table>

Figure 34 - Result of stepwise regression, 2015 on 2014

We fed the initial model into R and performed a stepwise regression to determine which model best fit the data. The result is shown above as the final model.
Model suitability for CSR 2015 on Independents 2014

We regressed the final model independently and subjected the result to an ANOVA test to investigate whether the independent variables were related to the dependent variable. The Anova table indicates that the final model is significant on at least a 95% confidence level. FCF/Sales 2014 is significant at a 99% confidence level, ROA 2014 is significant at a 99.9% confidence level, ROE 2014 is significant at a 99% confidence level. Debt/Equity is significant at a 99% confidence level and the Denmark dummy-variable is significant at a 95% confidence level. The distribution of residuals is not normal but much of its mass is centred around zero, there doesn’t appear to be any signs of heteroscedasticity being present in the model. Furthermore, the Variance Inflation Factor indicates a low or no multicollinearity between the variables in the model, though the values are higher than in previous models (< 10).

Final model summary CSR 2015 on Independents 2014

<table>
<thead>
<tr>
<th>Variable</th>
<th>YearType</th>
<th>Estimate</th>
<th>Std. Error</th>
<th>t value</th>
<th>Pr(&gt;t)</th>
<th>Significance</th>
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<tr>
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<td>&lt;2e-16</td>
<td>***</td>
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<td>0.001314</td>
<td>**</td>
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<td>ROA</td>
<td>2014</td>
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<td>61.371</td>
<td>3.848</td>
<td>0.000248</td>
<td>***</td>
</tr>
<tr>
<td>ROE</td>
<td>2014</td>
<td>-84.379</td>
<td>27.259</td>
<td>-3.095</td>
<td>0.002762</td>
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</tr>
<tr>
<td>Debt/Equity</td>
<td>2014</td>
<td>3.336</td>
<td>1.209</td>
<td>2.759</td>
<td>0.007277</td>
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</tr>
<tr>
<td>Denmark</td>
<td>Dummy</td>
<td>-10.964</td>
<td>4.527</td>
<td>-2.422</td>
<td>0.017854</td>
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</tbody>
</table>

Multiple R-squared 0.2891
Adjusted R-squared 0.2417
p-value 8.586e-05

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Above we present the results we received when we performed the multiple linear regressions on the Final model. Using the adjusted $R^2$ as an indicator for goodness of fit, the model explains 24.17% of the variation in the response variable. There is a negative relationship between FCF/sales 2014 and CSR 2015 on a 99% confidence level. There is a positive relationship between ROA 2014 and CSR 2015 on a 99.9% confidence level and a negative relationship between ROE 2014 and CSR 2015 on a 99% confidence level. There is a positive relationship between the Debt/Equity 2014 and CSR 2015 on a 99% confidence level and a negative relationship between the Denmark dummy-variable and CSR 2015 at a 95% confidence level. The p-value for the model is 8.586e-05 indicating significance at the 99.9% confidence level.

5.3. Ethical and social considerations

We have taken care to represent the results as they are provided to us through the program performing the statistical calculations, R. We have remade the output in excel to improve the readability of the data, in doing this we have removed specific points of the result which we do not use for our analysis but we have not excluded anything with the intention of creating a biased result. All the coefficients from our results are represented and no intentional distortional changes has been made to these results. However, in remaking the output in a separate program there is a small risk of
accidental misrepresentation. As is mentioned in the method chapter, the original data will be accessible for inspection.

On a social level, the accuracy with which researchers present or represent their findings can have major implications on how the research is perceived and used. It is important to ensure that there is a high level of reproducibility to enable other researchers to double-check the findings and check the validity of them. Important decisions hinging on the accuracy and interpretation of results can have significant effects on society.

5.4. Summary of relationships and confidence levels

Table 2 - Summary of relationship and confidence levels

<table>
<thead>
<tr>
<th>Var/Year</th>
<th>05/06</th>
<th>%</th>
<th>06/07</th>
<th>%</th>
<th>07/08</th>
<th>%</th>
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<td>neg</td>
<td>99</td>
<td></td>
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<tr>
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<td>neg</td>
<td>99</td>
<td>neg</td>
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<table>
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</tr>
<tr>
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</table>
CHAPTER 6. Analysis

This chapter first explores the statistical violations associated with our method and their potential consequences. We assume normality of the model residuals and continue to elaborate on the results presented in previous chapter and create a connection between the theories brought up as connected to this study in the theoretical framework. In this chapter, we also conclude if we can or cannot reject the null-hypotheses of the stated hypotheses in chapter four.

6.1. Violation of statistical assumptions associated with multiple linear regression

As has been mentioned in the chapter describing our empirical method, there are several statistical assumptions which should be fulfilled in order to achieve robustness in the regression models. If the assumptions are violated it can cause the results of these regressions to not paint an accurate picture of the relationships contained within the data-set, there can be spurious regression (Saunders et al., 2009, pp. 218). In this section, we describe important aspects of these assumptions focusing on the second, third and fifth assumption described below. We reason that these are the most likely to not have been fulfilled in our models. We provide an introduction to the assumptions and explain what the consequences would be if we run the statistical analysis and interpret the data based on models violating these assumptions.

Assumption 2 The variable $e$, the error term, should be $e_i \sim N(0, \sigma^2)$. That is, the variable is assumed to be normally distributed with zero mean and constant variance, meaning that homoscedasticity is assumed for the residuals (Watsham & Parramore, 2003, pp. 191).

Heteroscedasticity occurs when the residuals are not constant and can cause problems for the efficiency of the regression coefficients. This result comes from the fact that the regression coefficients have lost the characteristic of being the best or minimum variance estimates (Watsham & Parramore, 2003, pp. 205). The coefficients are still unbiased; however the usage of these coefficients for hypothesis-testing or prediction is impaired because the variances of the coefficients in question will be biased (Watsham & Parramore, 2003, pp. 205).

Assumption 3 Covariance between successive pairs of errors are assumed to be zero, $(Cov \ e_e = 0)$, the error terms are then assumed to be independent of each other (Watsham & Parramore, 2003, pp. 191). This assumes that we have no autocorrelation in the data (Watsham & Parramore, 2003, pp. 192).

Autocorrelation occurs when there is dependence between the residuals. This can take the form of a relationship between the present-day value and previous days’ value of a variable. In the event that the data has autocorrelation the coefficients of regression are still unbiased, however any tests made on the coefficients of regression are deemed unreliable (Watsham & Parramore, 2003, pp. 206). Financial data is subject to an increased risk of causing a spurious regression resulting from autocorrelation, this is because it is common to treat recorded levels or prices of variables collected from companies over time, with the variables increasing or decreasing during the life of a company (Watsham & Parramore, 2003, pp. 200, 201). Furthermore, lagged variables can introduce autocorrelation to a model (Watsham & Parramore, 2003, pp. 207).
**Assumption 5** The Multiple regression adds another statistical assumption in that independent variables are independent of each other (cov \( x_j, x_k = 0 \)) where (\( j \neq k \)) (Watsham & Parramore, 2003, pp. 203).

The fifth assumption concerns the issue of multicollinearity, a phenomenon which occurs if two or more independent variables are highly correlated. If the correlation between independent variables is too high, the multiple regressions will not produce accurate results since it cannot discern with certainty which of the variables impacts the dependent variable, and to what degree (Watsham & Parramore, 2003, pp. 207). Multicollinearity causes the coefficients of regression to become unstable and unreliable with regards to their sign, magnitude and to what degree they are statistically significant (Watsham & Parramore, 2003, pp. 208).

### 6.2. On statistical violation in our models
We acknowledge that there is a lack of robustness in our models, heteroscedasticity was a rare occurrence as observed in the scatter-plots of the residuals in our models, and however there is a distinct lack of normally distributed residuals for most of the models. We set our limit for acceptable multicollinearity at 0.8 rounded to one variable, this added to the number of variables we could regress against the dependent variables in several models despite the risk that this level of tolerance is too high to provide at least partial insurance against misleading results in the initial model used for the stepwise regression. However, there were no signs of multicollinearity in our final model which leads us to believe that multicollinearity did not distort the result of the final model. The intercepts of our models are highly significant, however there is a risk that important variables have been omitted from our models or not been included based on theoretical grounds.

Based on the information provided above, there is a risk that our results are not accurate. However, for the purpose of this thesis, we will assume normality of the model residuals as this will allow us to draw the conclusion that the coefficients presented in our final models are unbiased, making our results viable for interpretation, analysis and discussion. We want to emphasise that our sampling-method severely reduces our ability to generalize the results to a wider population as has been discussed in our chapter describing the empirical method, the discussions in this chapter and the final conclusions derived from the discussions make no claim to be generalizable beyond our current sample of companies.

### 6.3. Significant results
In our chosen models, most of the variables occur as statistically significant through the examined period between 2005 and 2015. Among the statistically significant variables, as demonstrated in the table above, we find FCF/sales, FCF/employees, net PM, ROA, ROE, Debt/Equity, Denmark, Finland, except Sweden in 2013/2014. Other exceptions are noted for the Debt/Equity variable in the models regressing 2010/2011 and 2012/2013 in which they are not significant. Besides the fact that we obtained a variety of different relationships through the tested period of time, the majority of the variables show significant negative relationships towards the dependent variable of CSR score with the exception of FCF/sales and ROA which were positive and significant in several subperiods.
6.3.1. Significant results per variable

**FCF/sales**
As mentioned above, FCF/sales is consistent with the theoretical framework as the parameter indicates a positive and significant relationship in the years 2005/2006, 2006/2007 and 2007/2008 (Waddock & Graves, 1997, Julian & Ofori-Dankwa, 2013). This highlights the fact that companies use financial slack resources to improve their CSR performance. Starting from 2008/2009, the relationship between FCF/sales and CSR score is significant and negative, indicating that after a year 2008 companies have changed their funding preferences towards CSR in terms of financial slack.

**ROA**
The significant positive relationship between ROA and CSR occurs only in the following compared years: 2006/2007, 2013/2014 and 2014/2015. There was no other significant relationship found for the rest of the examined period. This is coherent with results of a study by Dkhili and Ansi (2012) which found the absence of a significant link between these two variables.

**FCF/employees**
There is a significant negative relation between FCF/employees and CSR in the years 2006/2007, 2007/2008, 2009/2010 and 2010/2011. Interestingly, the negative relationships in 2007/2008 and 2009/2010 is the opposite from a relationship found for FCF/sales in the same timeframe. For the rest of period, there is no presence of this variable in the final models. The findings are not consistent with assumptions about financial slack being positively associated with CSR as stated above.

**Net PM**
Net profit margin is present in the results between 2005 and 2009 with a significant negative relationship to CSR except for in the year 2008 which shows a positive relationship. This means that with the exception for in 2008, a higher net PM did not trigger improvements in CSR performance during the period 2005 to 2009, which in this case is not consistent with Waddock and Graves (1997) suggestion that with increased profitability there is an increase in financial slack and potentially higher investments into CSR.

**ROE**
Return on equity shows a significant negative relationship in 2013/2014 and 2014/2015.

**Debt/Equity**
The Debt/Equity ratio occurs with a significant positive relationship in 2014/2015 and with a negative relationship in 2008/2009 and 2012/2013, indicating a turn in the choice of preferred sources to fund CSR.

6.3.2. Significant results per subperiod
As demonstrated above, the results of this study vary through different subperiods and variables. Below we discuss particular combinations of years where the independent and control variables for financial slack in the current year are put in relation to CSR performance of the subsequent year. Moreover, in this section we conclude if we can reject the proposed null-hypotheses of this study.
**Financial slack 2005 - CSR performance 2006**

When comparing 2005 with 2006, the two main independent variables are found to have positive and negative significant relationships with the dependent variable. To be specific, FCF/sales is positively related while net PM is negatively related to CSR. This can be interpreted in the way that financial profitability does not trigger financial slack being allocated to the CSR activities as argued by Waddock and Graves (1997). This leads to the rejection of the null hypothesis, meaning that financial slack in 2005 has a mixture of significant relationships with the CSR performance in 2006.

**Financial slack 2006 - CSR performance 2007**

In comparison with the previous period, there are four variables that show a significant relationship with CSR, both positive and negative. Firstly, the positive significant ones occur in the case of FCF/sales and ROA. It can be argued that companies in this timeframe have the same development for both shareholders and stakeholders value creation, for example they earned higher profit in relation to its overall assets in one year and improved CSR performance in the following year. This is favourable to both shareholder and stakeholder theory, meaning that value creation for both groups goes in the same direction. Secondly, the negative significant relationship occurs in the case of FCF/employees and net Profit Margin. FCF/sales and FCF/employees show two different relations, one would not expect to obtain different results using variables so similar. Even though both variables have a measure of company's size as a numerator, it seems that the two different size measures lead to two different relations. This is consistent with Buchholtz et al. (1999) who posits that firm size has an impact on CSR. This leads to the rejection of the null hypothesis, meaning that financial slack in 2006 has a significant relationship with CSR performance in 2007.

**Financial slack 2007 - CSR performance 2008**

The variation exhibited in the relationships of FCF/sales and FCF/employees is present in 2007/2008 is the same manner as in the previous year. While FCF/sales show a significant positive relationship, the opposite is exhibited in FCF/employees towards CSR performance. Net Profit Margin shows a significant negative relationship without change in comparison with previously compared years. This leads to the rejection of the null hypothesis, meaning that financial slack in 2007 has a mixture of significant relationships with CSR performance in 2008.

**Financial slack 2008 - CSR performance 2009**

As demonstrated above, FCF/sales had so far only significant positive relationship with CSR performance, however in examining the relationship in the 2008 - 2009 combination; the results show a negative significant relationship. Such change can arguably be caused by financial constraints resulting from external events such as the on setting financial crisis. This is reasonable to assume looking at the time frame. Another variable present in this final model is net PM with a change in the relationship in comparison with previous periods. This leads to the rejection of the null hypothesis, meaning that financial slack in 2008 has a mixture of significant relationships with CSR performance in 2009.

**Financial slack 2009 - CSR performance 2010**

**Financial slack 2010 - CSR performance 2011**

We describe both of these year combinations in one paragraph as the results are similar with only minor difference. The difference being that one variable, FCF/employees
shows a significant negative relationship with CSR. The relationship is without a change in comparison with previous periods. In 2010 - 2011 Debt/Equity shows a negative relationship; however, the significance level is below 90%. This leads to the rejection of the null hypothesis, meaning that financial slack in 2009 and 2010 has a significant negative relationship with CSR performance in 2010 and 2011, respectively.

Financial slack 2011 - CSR performance 2012
Financial slack 2012 - CSR performance 2013

We describe both of these year combinations in one paragraph as the results are similar with only minor differences. FCF/sales and Debt/Equity show negative relationships, however the latter with significance level below 90% in 2012 - 2013. This leads to the rejection of the null hypothesis, meaning that financial slack in 2011 and 2012 has a significant negative relationship with CSR performance in 2012 and 2013, respectively.

Financial slack 2013 - CSR performance 2014
Financial slack 2014 - CSR performance 2015

We describe both of these year combinations in one paragraph as the results are similar with only minor differences. FCF/sales and ROE show significant negative relationships, while ROA shows a significant positive relationship. Moreover, there is a significant positive relationship associated with Debt/Equity in 2014 -2015. This leads to the rejection of the null hypothesis, meaning that financial slack in 2013 and 2014 has a mixture of significant relationships with CSR performance in 2014 and 2015, respectively.

Nordic countries

Into our regression models we have also included dummy-variables for each Nordic country. The aim of the study was not to test for differences among these countries but to broaden the results, analysis and discussion. Additionally, an examination of the relationship between financial slack and CSR in an institutionally stable region was suggested by Julian and Ofori-Dankwa (2013). The similarities between them, especially in a context of sustainability and national culture matter in a sense which is taken into account by making them one geographical area in this study. As it is demonstrated in the beginning of this study, the Nordic nations score highly on a global level with their environmental, social and governance (ESG) profiles of companies (RobecoSAM, 2016) with the first three positions taken by Norway, Sweden and Finland with Denmark being placed in the 8th position. The dummy variable of Denmark as shown in the results reveals a similar development as Denmark is shown with a 95% confidence level to have a negative relationship with CSR through the whole period. This is, except for the year 2013 - 2014 when Finland shows a significant positive relationship with 95% confidence level and the same for Sweden but with a confidence level below 90%. The negative relationship of the Denmark dummy variable is consistent with the country’s relatively lower position on the ESG rating when compared to the rest of Nordics. Consistent with the CSR condition of each Nordic country presented in theoretical framework, Denmark seems to be least developed in terms of both state’s support and requirements to integrate CSR into the daily operations of companies. Norwegian companies however, are required to integrate the social and environmental activities into their daily operations which could explain their first position on the global ESG ranking (RobecoSAM, 2016).
6.4. Implications of results / General discussion
Elaborated on in previous sections in this chapter, the variables for financial slack are shown to be statistically significant in the models that have been fitted to the data. As such, this is coherent with findings of Cochran & Wood (1984) that financial performance impacts CSR performance. One can argue that based on the high sustainability profile of Nordic countries and companies, it is reasonable to discuss whether this means that the results of this study are coherent with rather deep integration of CSR into the business daily operations. Results of this study have the same path as seen in the results from a global CEO survey conducted by PwC (2016, p. 13) with 64% of CEOs from 83 countries considering CSR as a part of their core business rather than an elective or discretionary program. The conduct of shareholder’s value protection by not using the core financial resources as an investment source towards discretionary activities in most of the tested periods seems to be obsolete. Results from the same PwC study (2016, p. 13) reveals that 45% of investors will look up only ethical investments in the next 5 years. This section continues with analysis of our results in connection with theoretical framework.

6.5. Results in connection with legitimacy theory
The subject of legitimacy theory has been discussed in the theoretical framework as a positive theory (Hoque, 2006) concerning the role of legitimacy in the eyes of stakeholders as an incitement to undertake investments in improving the corporate social performance, thus reducing the gap between the societal expectations and company performance (Lindblom, 1994, cited in Hoque, 2006). Some emphasis needs to be placed on the importance of the specific temporal and spatial contexts to this theory (Hoque, 2006). We have made the argument that legitimacy is a requirement for survival in a modern contemporary world of business (Aguilera et al., 2007).

It is reasonable to assume that cultural and other similarities between the Nordic countries play a part in them scoring similarly well on global rankings (RobecoSAM, 2016). On this subject, we argue that the part of the legitimacy theory which theorizes that companies seek to mimic well-performing role-models when they design their daily operations seem to be attributable to the Nordic geographical area in general (Rachels, 2003). Furthermore, the spatial context will reasonably decide which companies are seen as role-models in this context (Hoque, 2006), therefore it can be argued that there are positive externalities associated with imposing ESG-improving regulations for business-practices based on the role of role-models in spreading awareness and conformity.

We have studied several sub-periods, some of which falls within the timeframe of the financial crisis that spread across the world. In the theoretical framework, we have argued that there are expenditures associated with being legitimate in today’s society. Our results seem to coincide with this notion since as when the financial crisis took hold, the relationship between financial slack and CSR turned negative. This would indicate that the financial slack was required elsewhere in the business, it is reasonable to assume that the slack was used to ensure continued survival of the business as a going concern. However, we have also stated that legitimacy is required for the long-term survival of a company (Suchman, 1995), so it would seem contradictory viewed from that perspective that companies would lower their investments in the very concept that keeps them legitimate (Suchman, 1995), the CSR investments.
This brings us to the fact that it takes time to develop CSR and to improve a CSR score. Based on the temporal context associated with legitimacy theory (Hoque, 2006), it is reasonable to assume that the investments required achieving a good CSR performance was undertaken months or even years before they visibly impact the CSR score. Hence, the cause for a reduction in CSR investments one year or a series of years can be traced to the level of CSR achieved being a response to a gap between society and companies in the past (Hoque, 2006). In that sense, the reduction in investments is in line with what is to be expected, unless the gap has widened (Lindblom, 1994 cited in Hoque, 2006). From the point of view of shareholder and stakeholder value creation, the reduction in CSR investments will impact these groups negatively according to the argument we have made that we treat CSR as creating value. However, a company that reduces their investments in CSR to ensure the survival of the company hopefully continues to improve their CSR scores and social commitments in the future.

6.6. Results in connection with IDH
Differences among developing and developed countries related to various investments preferences into CSR improvements were main reason to integrate IDH into this study. As our results show, after 2008 Nordic companies with a high probability faced financial constraints due to the financial crisis which caused a turn from a positive significant relationship into negative significant relationship in terms of free cash flow. In a similar study performed in the developing country of Ghana, the results show a negative relationship as well (Julian & Ofori-Dankwa, 2013). The authors of that study argue that once a company faces financial constraints, they tend to have a similar attitude towards spending on CSR, no matter where they operate, in developing or developed countries (Julian & Ofori-Dankwa, 2013).

We found that Denmark was negatively related to CSR performance in most of our models. This is interesting as we have built our population based on the premise that the differences between the countries in the Nordics and their commitment to socially responsible investments would be minimal, this might not be the case.

The Nordic countries pride themselves on being transparent, tolerating, having only a small presence of corruption and being relatively politically stable. However, there could be significant differences between the countries in the way they are ruled which could restrict or enable voluntary contributions towards increasing the socially responsible investments (Campbell, 2007). Market restrictions, potential differences in corporate tax-rate, the political agenda of the ruling authority could contribute to the negative relation seen in the results. We have argued that if the companies end up with less financial slack, it will result in lower levels of realised socially responsible investments, and can put shareholder wealth at risk (Campbell, 2007). Therefore, it is reasonable to assume that shareholder wealth protection and creation for shareholders is likely to differ between countries.

The self-regulatory angle is also interesting to analyse since Norway is a producer of oil which is generally seen as having a large negative impact on the environment. It could be that the increased focus and pressure on companies to introduce socially responsible elements into the daily operations is a way to mitigate potential backlash (Campbell, 2007). Geographically, Denmark is the only country connected to central Europe. This could reasonably impact their standing in the matter as the politics would blend German and Nordic expectancies. If we extend the argument used in connection with legitimacy...
theory to that countries themselves and not just companies mimic their role models (Rachels, 2003), the mixture of German and Nordic expectancies could impact the negative relationship found for Denmark in this study. In accordance with Campbell’s (2007) third proposition stating that normative calls for businesses to operate in a certain way tend to make them do so, then introducing incentives aimed at improving the willingness of companies or industries to self-regulate could provide positive externalities on other companies, industries and countries and could have a positive effect on shareholder and stakeholder wealth protection.

6.7. Results in connection with Resource-based view

In the theoretical framework of this thesis we have argued for investments in socially responsible investments as a resource which is a driver for competitiveness supported by the Resource-based view (Hart, 1995). The level of a company’s competitiveness on a global market scale can have major implications for the financial situation of that company and other companies involved in trading with it. In being able to produce goods with the edge of getting a better profit-margin, companies can ensure a strong financial position (Conner, 1991). In accordance with the theories put forward in this thesis, it would be possible to create a positive and financially lucrative spiral because investments made in CSR would translate into competitive advantage (Hart, 1995), allowing for better profit margins (Conner, 1991), positive reputational branding (Suchman, 1995), and eventually financial slack. As the financial slack could be allocated to further investments into CSR the cycle would continue. However, we have also hinted that we believe there is a characteristic of scarcity in the demand for CSR. Should the market for CSR become oversaturated, the above cycle would encounter diminishing returns.

Our results indicate that the trend was indeed positive up to the years of the financial crisis, after which the trend turned negative, with financial slack potentially being invested elsewhere. We interpret this as that the immediate survival during a global recession does not depend on claiming market-shares or higher profit margins through investments in socially responsible areas (Hart, 1995). The reduction in investments could be indicative of the pressures involved in the choices necessary to make for top-level managers during times of financial struggle or distress as we argued in the theoretical framework. Even though we have claimed CSR to be a resource in accordance with the resource based view (Hart, 1995), it seems that as a resource, CSR is not very liquid.

We have described the difference between the approach toward CSR between north America and Europe (Campbell, 2007). At the time of writing this thesis, debates on the impact and truth in human made climate change have sparked in the United States which has caused a major backlash. As we have stated above, Norway is the world-leader in CSR and have focused on implementing in the daily operations of active companies (CSR Europe, 2010, p. 52). As hinted at above, this could be a strategic choice to reduce or mitigate some of the backlash received when profiting from fossil-fuels (Campbell, 2007).

Depending on the applicability of the Resource-based view to this sample of companies, one could make the assumption that the negative relationship found between financial slack and CSR is likely to hurt shareholders and stakeholders since the company is actively choosing not to increase their competitive advantage (Hart, 1995). From the
perspective of the Resource-based view, we would expect investments in CSR to increase once the financial position of companies recovered after the financial crisis as it is a source of competitive advantage (Hart, 1995). According to our results this has not happened. However, this should not be a reason to believe that the need for investments in CSR has been reduced in the hunt for sustainable competitive advantage.

6.8. Results in connection with slack resources theory
In our thesis, we treat the free cash flow as a measure of highly discretionary financial slack (Sharfman et al., 1988). As has been elaborated on, the financial slack provides a cushion for firms during financial distress or as a source of funds from which capital can be reallocated to pursue new investment opportunities (Sharfman et al., 1988; Bourgeois, 1981).

Based on the fact that we can see a clear turning-point over the course of our investigated time-period and that this turning-point occurred during the time of the financial crisis, it is reasonable to assume that the cushion of slack which was once used to fund investments in CSR was now being put towards ensuring continuance. This assumption is reasonable due to one of the determinants of the levels of financial slack available to companies being impacted by external events (Sharfman et al., 1988). We can suppose that the negative relationship which occurred during these years did not mean that the financial slack went unused since according to Fama (1980), leaving financial slack unused entails putting the company at risk in other areas due to increased risks of agency problems. As has been discussed however, it could be that leaving the financial slack unused in a war-chest or similar arrangement would be preferable to investing it in a not very liquid resource such as CSR where it would cease being able to provide an immediate financial cushion (Bourgeois, 1981). We assume that from the perspective of shareholders and stakeholders value protection, it is preferable to have the company surviving the financial crisis than having the company invest its’ financial slack in non-liquid resources.

6.9. Results in connection with stakeholder theory
In the years before 2008 the relationship between financial slack in the form of the free cash flow and CSR was positive meaning that the more financial slack companies had, the higher the CSR score would be the following year. In discussing our results and analysis through the perspective of stakeholder theory we are tempted to conclude that the negative turn taken is likely to have a negative impact on stakeholders who are dependant or thriving on increased levels of CSR expenditures (Donaldson & Preston, 1995). From what has been mentioned in the theoretical framework we can infer that higher levels of CSR are likely to promote closer partnerships, commitments and a reduction of the gap existing between society’s expectations and the reality of companies’ activities (Lindblom, 1994, cited in Hoque, 2006). In that the relationship is now negative, we can argue that there will be less focus on improving and maintaining the relations between the companies and their respective stakeholders (Donaldson & Preston, 1995). What is worse is that taken together with the legitimacy theory discussed above, there is a risk that the negative trend could continue because of the impact of low performing role models on other companies (Rachels, 2003). If a lower level of CSR investment is accepted by society, then companies and shareholders could have problems justifying continued investments.
As has been mentioned there are three aspects to the stakeholder theory, the descriptive, instrumental and normative aspects (Donaldson & Preston, 1995). We see a clear pattern for the years following the negative turn in 2008 which could be used as the normative justifications for governments and other authorities to increase the level of regulation (Campbell, 2007). The results indicate that since the 2008 change, the more highly discretionary financial slack a company has available, the less they are willing to invest it in what can be seen as intertemporal profit maximization and socially responsible investments. Furthermore, we expect to see a backlash as the gap between society’s expectations and the level of investments undertaken by companies in socially responsible actions increase in magnitude (Campbell, 2007).

For those stakeholders agreeing with the pessimist view brought up in the Resource-based view that CSR could be used as a competitive resource to increase profit margin and charge non-competitive prices, the turn from a positive to a negative relationship would be good news (Weiss, 1975 in Conner 1991, p. 124). However, the turn to negative a relationship could also be interpreted in two other ways, the first being that corporate socially responsible investments have since 2008 exhibited diminishing returns which means that relationships between stakeholders and the company no longer need further investments. It could also be interpreted as the company being less dependent on maintaining these relationships, i.e. the stakeholders are seen as less valuable (Mitchell et al., 1997).

6.10. Results in connection with shareholder theory

From the point of view of the shareholder theory, the concept of CSR was frowned upon as being a waste of shareholder wealth. The argument was based on the reason for the firm to maximise profit for its shareholders (Friedman, 1962; Friedman, 1970). Since then, there has been significant development in the area, with the contemporary view being that it is a universally positive phenomenon which can even increase profits over a longer time period, therefore maximising intertemporal profit, a step in overcoming myopic tendencies (Bénabou & Tirole, 2010, p. 13). It is likely to be a range of arguments for and against this reasoning including the short-term opportunity costs of investors and stakeholders in addition to the fact that some actors are dependent of dividends for their immediate survival.

We have seen that the trend of the positive relationship between the amount of financial slack and socially responsible investments has turned negative. Even though there are arguably economies of scale in letting a company undertake socially responsible investments, in our theoretical framework, we have suggested that this is not favoured by all investors as with the vast number of owners comes a vast amount of differing interests and preferences for the use of the corporate financial slack (Steinberg 2010 in Van Puyvelde et al., 2012, p. 432).

The negative turn in the relationship could from the perspective of the shareholder theory be construed as being good as it is assumed that instead of investing in subjectively chosen socially responsible projects, the financial slack is paid out to shareholders. However, whether or not this truly maximises the utility or wealth of the shareholders remain to be investigated due to the notion of intertemporal profit maximization (Bénabou & Tirole, 2010, p. 13).
In accordance with the agency theory there is a chance that the negative relationship is evidence that agency reducing measures have succeeded and that the positive relationship existing pre-2008 was indeed wasteful investment in subjectively chosen corporate charity on parts of the CEO and upper management (Donaldson & Davis, 1991; Fox & Hamilton, 1994). However, the negative relationship existing from 2008 could also be interpreted as evidence of the presence of agency problems and the costs associated with it, since if the above statement of intertemporal profit maximization is true, then the negative relationship would entail lower levels of future profit, and the choice to reduce the levels of financial slack invested in socially responsible activities would be negative for shareholders.

In the case of stewardship theory taken on its’ own, the theory seems shielded from reproach since when applying the perspective of stewardship theory, it is assumed that the managers act in the interests of the principals based on individual utility, justifying any changes made in the process of allocating capital (Fox & Hamilton, 1994). However, when taken into consideration together with shareholder theory, the same arguments used in the agency theoretical viewpoints above can be applied with some modification. Should it turn out that socially responsible investments do indeed increase profit when measured under a longer period of time, and then there is no evidence of the stewardship theory being applicable.

In this thesis, we have made the argument that an increased level of actions falling under the genre of corporate social responsibility are associated with better financial performance since these actions are assumed to become resources, and thus be a driver of competitive advantage through the Resource-based view (Hart, 1995). With that in mind, a reduction of investments in CSR funded through financial slack is indicative of agency costs being present. However, to investigate whether the agency theory or stewardship theory explains the choice of reducing the investment in socially responsible activities funded by financial slack ex-ante, more research would have to be done.

6.11. Ethical and Social Considerations

The results of this thesis can naturally be discussed widely from ethical and social perspective due to its socio-economic context but more comprehensive discussion upon these manners will be presented in the last chapter of this study. In terms of a result analysis, companies in Nordic region seemingly integrate the great business ethics with emphasis on social and environmental impact on the surrounding individuals and communities. In addition to this, the Nordic companies themselves promote and support activities towards responsible corporate behaviour, with the implication that the behaviour of an entity is greatly influenced by the world it lives in. If the case is that Nordic companies do not spend their excess financial resources on CSR, this can also mean that their high global sustainability performance is a result of the deep integration of CSR in the core business. This highlights the fact that companies do not interrupt their ethical behaviour towards society until financial slack resources are achieved, which is overall a good perspective in business ethics and society.
CHAPTER 7. Conclusions

In this chapter, we present the conclusions we draw based on the analysis and the discussions of the result presented in previous chapter. From here, we continue to discuss the limitations of the research we have conducted and present the reader with several suggestions for future research based on the results from this study. We discuss the ethical and social considerations associated to our conclusions. Finally, we discuss the credibility of our research and the factors connected with this aspect of uncertainty.

7.1. General conclusions

The concept of corporate social responsibility and the drivers which underlie the magnitude of socially responsible actions taken by companies have been studied for decades. The cumulative stock of research is broad, with preferences and opinions toward the occurrence of the phenomenon having undergone dramatic changes over the years.

This study set out to explore one of the drivers for socially responsible investments, the relationship between financial slack and the inclination to continue to develop CSR. Several previous studies have had a similar agenda, investigating different financial variables and their subsequent impact on CSR performance. The purpose of this thesis culminates in answering the research question:

*What is the relationship between current financial slack and the future CSR performance in Nordic countries?*

In undertaking this research, we find that the relationship between current financial slack, measured as the ratio of the free cash flow and a relevant measure of company size, and future CSR performance as measured by Thomson Reuters is mixed. The result indicates both positive and negative relationships depending on the time-period treated. There is a pattern arising from the models which shows that the relationship changed direction during the time period 2005-2015, with 2008 being the year in which the change to a negative relationship occurred.

After having analysed the result we consider the research question answered. We have been able to map the contextual field of information which we set out to do. There were significant results indicating the nature of the relationship between the relevant variables in a sample built from data based on Nordic companies and their financial positions. The significance of the results associated with financial slack was high enough that we have been able to reject our null-hypotheses for each of the individual subperiods.

The conclusion on whether higher financial slack triggers better CSR performance in Nordic context might not be that obvious due to particular reasons. Firstly, CSR in Nordic context is shown to be deeply embedded in corporate culture when the CSR investment is potentially sourced by the operational capital rather than using the uncommitted available cash flow. Secondly, more available discretionary resources can lead to an increase in the CSR performance; however Nordic companies can decide to invest rather in areas in which they are shown to globally underperform, such as the innovation, talent retention and others (RobecoSAM, 2013, p. 3).
As has been mentioned in previous chapters, it is likely that some of the assumptions or prerequisites we took as fulfilled were not so, with the consequences of not living up to these assumptions explained in the previous chapter. Therefore, the results received and conclusions drawn suffer from a reduced validity than preferred, a subject discussed further below.

7.2. Theoretical and practical contribution

Theoretical contribution

In this study, we aimed at building on previous knowledge contributed by researchers working in this field. The research undertaken up to this point has uncovered mixed results but has narrowed down the variables best suited to research the relationship between financial slack and corporate social responsibility.

As mentioned earlier, to the authors’ knowledge, no academic research investigating the same relationship has been undertaken in the chosen geographical area. In performing our research, we are able to provide a theoretical point of departure to researchers choosing to focus on this particular research area. No matter whether researchers want to improve on our research and provide more robust results interpreted in a different way or go further and explore the underlying concepts and drivers of the relationships found in this study, this thesis should provide a relatively strong foundation for future research.

This study encompasses a period under which a significant global recession occurred; we provide academia with indications of how companies act in response to such an event. We contribute to the construction of a sound, logical and universally agreed upon linkage between financial and social performance, furthering knowledge on how allocation of funds in the Nordic regions toward socially responsible investments is treated, when using cross-sectional data analysed.

We use several theories against which we interpret our results, we have been able to add to the current foundations of knowledge concerned with legitimacy theory, institutional difference hypothesis, Resource-based view, stake- and shareholder theory and the related stewardship and agency theory of how the relationship between financial slack and socially responsible performance can be interpreted using these theories in the Nordic geographical area.

Practical contributions

Through the perspective of the Resource-based theory, we have seen a pattern which indicates a reduction in the importance of corporate social investments as resources for driving competitive advantage after the year 2008, even if the financial crisis is likely to have had an impact, one could argue that by the year 2014 there should have been a return to a positive relationship. We have also been able to discern that an increasing amount of current financial slack is negatively related to future CSR performance after the year 2008. One practical implication of this would be that analysts and investors are likely to take continued reductions in these investments into consideration when valuing companies, as the investments are argued to maximize intertemporal profits.

Should normative calls for continued investments in corporate social responsibility increase in magnitude, it is likely that this will impact managers of companies. Compliance with regulatory frameworks are time and resources consuming and they are
arguably more so if the foundations for adhering to such frameworks are missing in the company. The pro-active manager would implement a way to be ready for when such normative calls may come. Furthermore, it would be prudent to warn students of business administration and economics that the trend of reducing investments in socially responsible projects despite an increasing amount of highly discretionary financial slack is likely to cause a backlash from society.

The patterns we have uncovered provide justification to governments and lawmakers to increase awareness of the issue and implement a framework to reduce the negative consequences from a downturn in the economy on socially responsible investments. When the argument is taken to the extreme, economies tend to re-stabilize within a few years but the alienation of society by companies and the potentially catastrophic consequences to be expected from a complete withdrawal in environmentally friendly operating procedures will take much longer to treat, if at all possible at that point.

Disregarding the concept of intertemporal profit maximization, the shareholders are better off than the stakeholders under the assumption that the financial slack is paid out to them. This is likely to cause problems in the long run, as partnerships between companies, between the company and the employees and between society and companies in general are likely to suffer if this trend continues. However, despite there being a risk for negative scenarios as long term consequences of a continued decline in socially responsible investments, there are also opportunities to mitigate, reduce or overcome the obstacles once they have been uncovered. In producing this study, we hope to have contributed to reducing the gap between theoretical and empirical findings in the Nordic region.

7.2. Limitations and Future research
CSR is a multidimensional and complex notion of great interest for many scholars in contemporary academia. After a thorough literature review on existing research of the relationships between financial performance (financial slack) and CSR performance and after examining the relationship in Nordic context in this thesis, the authors can conclude that yet certain limitations are present, but also various perspectives, dimensions and tools that can be applied in further examination on this relationship. In the case of this study, the analysis of the results shows that the relationship between financial slack and CSR for Nordic companies does not show a universal outcome. Findings show both positive and negative relationships, with a pattern arising from the models which shows how the relationship changed during tested timeframe from 2005 until 2015, with 2008 being the year in which the change to a negative relationship occurred. As such, the suggested future research is naturally extended by examining why there are differences in results for different time periods. This could be performed by interviewing the financial managers accountable for resources allocation towards CSR. This would give the possibility for the examiner to understand how Nordic companies managed their financial slack resources between 2005 and 2015. Due to the time constraints of this study, it was not feasible for us to acquire an analysis on the financial slack spending preferences from financial managers. The authors are aware on how time consuming such analysis is based on their own professional experiences from financial controlling and reporting. As such, there is a limitation in terms of the qualitative standpoints of financial managers, which eventually limits the scale of the findings.
Comparison between current financial slack and future CSR was chosen as it takes time for an investment to achieve the desired performance. However, one can argue that there is a possibility that a comparison of these two notions within the same year could provide an outcome that has less mixed results and is more in line with the findings from stated studies. This study is limited to an examination of one year and the subsequent year only, therefore it is of a high interest to see whether the comparison within the same year provides more coherent results. It would also be prudent to suggest that future research is undertaken using longer time periods between the dependent and independent variables to examine the temporal aspect more thoroughly or to do research using longitudinal data, models and a relevant analysis of the time-varying relationship as this is not studied in this thesis.

The number of regression models required when including all of the originally intended variables for the timeframe did not allow us to include more regression models as that would increase the time spent on the statistical process and the following analysis which limits our findings in terms of industry effects and differences between countries. As such, future research has the possibility to apply an industry variable and more thoroughly examine country differences among the industries and countries in the Nordic area.

There is a controversy related to use of a proxy for the financial slack. As demonstrated in the chapter on the method, it is difficult to specify whether a financial slack represents the same unit for every company. While one company considers one financial unit as financial slack, the perception of other companies can vary. In the case of this study, the free cash flow is used but we also suggest future research to investigate the cash flow from operating activities and income from operating activities.

As the findings show both positive and negative relationships through the tested period, it is reasonable to conclude that companies also have different financial sources for CSR funding. In general, it does not matter for society or the environment whether the invested capital comes from core operational capital or excess uncommitted capital. Nevertheless, for shareholders and potential investors it would be of a high interest to see both the core operational capital and financial slack resources in relation to CSR performance. Furthermore, they can understand what position and function CSR has in the corporate strategy.

Above we mentioned the most relevant suggestions for future research, we would like to target a gap that we observed in current research on CSR in the Nordic context. Besides the causality direction investigated in this thesis, there is seemingly a research gap in a second causality direction of Nordic countries. No study is found to research what impact CSR has on the financial performance for all Nordic countries as one geographical area. We argue that such causality direction is relevant to observe as these countries and their companies are continuously achieving among the highest sustainably ranking on a global level. Therefore, it is of a great interest to see whether such high sustainability provides them with a competitive advantage on markets and increases their financial performance.
7.3. Ethical and Social Considerations

In this section, the authors elaborate on the results and general conclusions described above and present the ethical and social considerations. Discussion on socio-economic manners is surely a crucial part of the last chapter due to the subject and obtained results of this research. We observed a change from a positive relationship to a negative relationship at the time when the financial crisis began. As such, the results are very interesting in terms of how morally loyal a company is in times of financial difficulty. To add to the discussion, CSR is considered to be a voluntary initiative without existing legal requirements from the government that would require organizations to comply with the societal and environmental principles. Therefore, as open economies dependent on international markets, the Nordic countries recognized the threats of the financial crisis and decreased the expenditures towards discretionary activities. The financial crisis demonstrated to the actors on those markets how robust globalization is and its power to spread adverse effects from negative events through contagion. As such, there is certainly a close relation between morality undertaken in business and encountered financial constraints. However, it is possible to argue in relation to the Nordic countries about the difference between morality being integrated deeply into the prevailing corporate culture and morality as an addition to what a company already does. As is presented in the first and third chapter, Nordic companies are rated among the best CSR performers in the world. This highlights the fact that there is an existing high morality applied in their core business activities. This morality is seemingly subject to decrease once the financial constraints are recognized. To relate this argument from a Nordic study to a study from Ghana, it seems that no matter where on planet a company operates, no matter whether it is in a developing or a developed area, when the company faces financial constraints, there will potentially be negative impacts on society and the environment.

To protect society and environment in the Nordic area, it is important to ensure that discretionary investments are not being a subject of reduction if another financial crisis occurs in future. Relating to this, different initiatives should be considered by the governments of Sweden, Denmark, Finland and Norway. The governments should create law which will not allow a decrease of corporate societal and environmental contribution below a certain level. Such rules are indispensable especially for particular industries such as petroleum or the garment industry. This can ensure that the value for stakeholders will be a subject of continuous creation.

Moreover, the government should make it mandatory to disclose CSR expenditures which are nowadays an issue, since there is no publicly available information on how much Nordic companies invest into CSR. We argue that corporate resource allocation towards CSR is valuable information for shareholders, other actors on financial markets and stakeholders as it can provide an answer to many raised concerns on resource-allocation preferences of financial managers in Nordic companies. Shareholders themselves are interested in seeing how much of their wealth is allocated into CSR, in other words how companies protect their value while creating a value for stakeholders.

7.4. Research credibility

In the paragraph on research credibility in the chapter on methodology we discussed the topics of reliability, validity and generalizability since a lack of these aspects risk undermining the conclusions reached by researchers (Saunders et al., 2009, pp. 156).
7.4.1. Reliability
We noted that the reliability of a research study concerns the adequacy and suitability of
the methods and techniques used to either gain or analyse the data and that any
inappropriate handling of the data or an erroneous application of the statistical methods
will impact how reliable the findings are (Saunders et al., 2009, pp. 156).

Since errors and biases reduce the robustness of the research (Saunders et al., 2009, pp.
156 - 157), the data collection and transformation has been undertaken to reduce the risk
of introducing such biases into the study. The dependant variable has been chosen from
a well-reputed source in the world of business research. The data calculated for the
purposes of filling the gaps in the data available was double-checked against existing
data to investigate if errors were accidently introduced. To our knowledge, no such
errors have been introduced. We have attempted to treat problems caused by outliers
through replacement of the specific outliers with the value found in the fifth or 95th
percentile depending on the outlier placement.

We followed Saunders et al. (2009) recommendations for choosing the proper statistical
technique which would allow us to build an understanding of the relationship between a
dependant variable and several independent variables. It is reasonable to assume that the
method of multiple linear regressions is correct to use. We have discussed three possible
criticisms of the stepwise method of entering the variables in the model and concluded
that the use of the stepwise method is prudent for this thesis. Furthermore, as has been
mentioned in the paragraph on the violations of statistical assumptions in the analysis
and discussion chapter, we have assumed some statistical assumptions to be fulfilled, it
is reasonable to assume that this reduces the reliability to a certain degree.

In order to facilitate replicability of our results we can provide the original code in the
form of an R markdown file, furthermore we have extensively described the process
used to obtain the results (Easterby-Smith et al., 2008, cited in Saunders et al., 2009, pp.
156).

7.4.2. Validity
We stated earlier that the phenomenon of validity pertains to how well the design of the
study measures what it intended to measure (Saunders et al., 2009, pp. 157). In this
thesis, we have sought to investigate the relationship between financial slack and CSR,
using a measure of company size as the denominator of the financial slack ratio. We
base the justification of our chosen variables on prior research. In using the equal
weighted rating as our dependent variable, we have included a substantial amount of
information pertaining to a company’s CSR-performance in an aggregated form as has
been described in the paragraph detailing the dependent variable in the chapter on
empirical method. As for the independent variable, we have chosen the free cash flow as
a measure for financial strength and availability of ready available resources. The
operationalization of the main independent variables is done in accordance with what
has been observed in previous research.

It is likely that there have been changes in the external environment of the companies
comprising our sample which may have caused them to drastically or temporarily
change their behaviour. However, the purpose of this study is to map the relationships
exhibited in the sample, and thus we argue that the changes are not relevant to reducing
Furthermore, we correctly interpret the way of causality in accordance with our hypotheses (Robinson, 2002, cited in Saunders et al., 2009, pp. 157, 158).

7.4.3. Generalizability
Generalizability concerns claims about conclusions being transferrable to other observations in other contexts using a different data set (Saunders et al., 2009, pp. 158). There are two major factors reducing the generalizability of our conclusions. The first one is that our method of sampling is not suited for drawing inferences beyond the sample itself, rather toward the theories used in the theoretical framework. Hence, the conclusions we draw are applicable to this study using this data-set. We strive to ensure the conclusion make logical sense based on the results obtained and interpreted in accordance with an appropriate theoretical framework (Saunders et al., 2009, pp. 159). The second factor is that the population and sample were chosen based on the perceived homogeneity of the Nordic region in their efforts to develop focus on CSR; it is therefore probable that results would be different using a sample taken from another geographic region or time-frame.
List of References


Appendix

Results from model 2006-2005

Result of stepwise regression 2006-2005

```r
## Stepwise Model Path
## Analysis of Deviance Table
##
## Initial Model:
## df$CSR2006 ~ df$`FCF/sales2005` + df$`FCF/employee2005` + df$ROA2005 +
##     df$ROE2005 + df$`Net PM2005` + df$`Debt/Equity2005` + df$Sweden_dummy
##     +
##     df$Denmark_dummy + df$Finland_dummy + df$Norway_dummy
##
## Final Model:
## df$CSR2006 ~ df$`FCF/sales2005` + df$`Net PM2005` + df$Denmark_dummy
##
##
## | Step | Df | Deviance Resid. Df | Resid. Dev | AIC |
## |------|----|--------------------|------------|-----|
## | 1    | 71 | 49252.13 539.2310  |             |     |
## | 2    | 71 | 0.0000          | 71 49252.13 539.2310 |     |
## | 3    | 72 | 229.1969        | 72 49481.33 537.6070 |     |
## | 4    | 73 | 187.9331        | 73 49669.26 535.9141 |     |
## | 5    | 74 | 650.7884        | 74 50320.05 534.9685 |     |
## | 6    | 75 | 774.9245        | 75 51094.97 534.2064 |     |
## | 7    | 76 | 1188.6358       | 76 52283.61 534.0691 |     |
## | 8    | 77 | 823.8740        | 77 53107.48 533.3355 |     |
```

Anova 2006-2005

```r
## Anova Table (Type II tests)
##
## Response: df$CSR2006
##
## | Sum Sq | Df | F value | Pr(>F) |
## |--------|----|---------|--------|
## | df$`FCF/sales2005` | 3911 | 5.6769  | 0.0197189 |
## | df$`Net PM2005` | 10458 | 15.1632 | 0.0002085 *** |
## | df$Denmark_dummy | 14890 | 21.5884 | 1.37e-05 *** |
## | Residuals | 53107 | 77 |
##
## Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```
Second model 2006-2005

## Call:
lm(formula = df$CSR2006 ~ df$`FCF/sales2005` + df$Net PM2005 + df$Denmark_dummy)

## Residuals:
Min 1Q Median 3Q Max
-68.14 -17.94 3.38 21.62 56.97

## Coefficients:
Estimate Std. Error t value Pr(>|t|)
(Intercept) 71.329 5.168 13.802 < 2e-16 ***
df$FCF/sales2005 67.287 28.256 2.381 0.019719 *
df$Net PM2005 -138.124 35.471 -3.894 0.000208 ***
df$Denmark_dummy -35.611 7.664 -4.646 1.37e-05 ***
---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

## Residual standard error: 26.26 on 77 degrees of freedom
Multiple R-squared: 0.3105, Adjusted R-squared: 0.2836
F-statistic: 11.56 on 3 and 77 DF, p-value: 2.459e-06

Vif-test 2006-2005

## df$FCF/sales2005  df$Net PM2005  df$Denmark_dummy
1.337321 1.291292 1.040577

Scatterplot 2006-2005
Q-Q plot 2006-2005

Model residual distribution 2006-2005

Distribution of studentized residuals
Outlier test 2006-2005

## No Studentized residuals with Bonferonni p < 0.05
## Largest |rstudent|:
## rstudent unadjusted p-value Bonferonni p
## 24 -2.738791 0.0076785 0.62196

Leverage Plots 2006-2005

Results from model 2007-2006

Result of stepwise regression 2007-2006
## Stepwise Model Path
## Analysis of Deviance Table

### Initial Model:
```
df$CSR2007 ~ df$'FCF/sales2006' + df$'FCF/employee2006' + df$ROA2006 +
   df$'OE2006' + df$'Net PM2006' + df$'Debt/Equity2006' + df$'Sweden dummy'
   + df$Denmark_dummy + df$Finland_dummy + df$Norway_dummy
```

### Final Model:
```
df$CSR2007 ~ df$'FCF/sales2006' + df$'FCF/employee2006' + df$ROA2006 +
   df$'Net PM2006' + df$'Denmark_dummy'
```

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<th>Resid. Df</th>
<th>Resid. Dev</th>
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### Anova 2007-2006

## Anova Table (Type II tests)

### Response: df$CSR2007

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<th>Df</th>
<th>F value</th>
<th>Pr(&gt;F)</th>
</tr>
</thead>
<tbody>
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<td>6019</td>
<td>1</td>
<td>8.1021</td>
<td>0.005700 **</td>
</tr>
<tr>
<td>df$'FCF/employee2006'</td>
<td>2966</td>
<td>1</td>
<td>3.9980</td>
<td>0.049176 *</td>
</tr>
<tr>
<td>df$ROA2006</td>
<td>3527</td>
<td>1</td>
<td>4.7551</td>
<td>0.032347 *</td>
</tr>
<tr>
<td>df$'Net PM2006'</td>
<td>6457</td>
<td>1</td>
<td>8.7047</td>
<td>0.004232 **</td>
</tr>
<tr>
<td>df$'Denmark dummy'</td>
<td>8330</td>
<td>1</td>
<td>11.2294</td>
<td>0.001263 **</td>
</tr>
<tr>
<td>Residuals</td>
<td>55634</td>
<td>75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Signif. codes:  * ** *** ****  0.001  0.01  0.05  0.1  1
Result of final model regression 2007-2006

```r
## Call:
## lm(formula = df$CSR2007 ~ df$FCF/sales2006 + df$FCF/employee2006 +
##     df$ROA2006 + df$Net PM2006 + df$Denmark_dummy)
## ## Residuals:
##    Min     1Q Median     3Q    Max
## -58.407 -19.075  5.421  20.966  46.634
## ## Coefficients:
##                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)     6.203e+01  7.035e+00   8.817 3.31e-13 ***
## df$FCF/sales2006 1.014e+02  3.564e+01  2.846  0.00570 **
## df$FCF/employee2006 -5.676e-03  2.839e-03  -2.000  0.04918 *
## df$ROA2006       1.228e+02  5.633e+01  2.181  0.03235 *
## df$Net PM2006    -1.517e+02  5.143e+01  -2.950  0.00423 **
## df$Denmark_dummy -2.687e+01  8.019e+00  -3.351  0.00126 **
## ---
## Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
## ## Residual standard error: 27.24 on 75 degrees of freedom
## Multiple R-squared:  0.2523, Adjusted R-squared:  0.2025
## F-statistic: 5.062 on 5 and 75 DF,  p-value: 0.0004732

Vif-test 2007-2006

```r
##  df$FCF/sales2006  df$FCF/employee2006  df$ROA2006
##     2.520739             1.857472          1.331094
##  df$Net PM2006  df$Denmark_dummy
##     2.031382             1.053600
```r

Scatterplot 2007-2006
Q-Q plot 2007-2006

Model residual distribution 2007-2006

Outlier test 2007-2006
## No Studentized residuals with Bonferroni p < 0.05
## Largest $|r_{student}|$:
## $r_{student}$ unadjusted p-value Bonferroni p
## 24 -2.241977 0.02796 NA

### Leverage Plots 2007-2006

- Leverage Plots

#### Results from model 2008-2007

#### Result of stepwise regression 2008-2007
Anova 2008-2007

# Anova Table (Type II tests)
## Response: df$CSR2008
### Sum Sq Df F value  Pr(>F)
### df$FCF/sales2007 6556 1 10.2006 0.0020408 **
### df$FCF/employee2007 6624 1 10.3070 0.0019429 **
### df$Net PM2007 3239 1 5.8404 0.0276705 *
### df$Denmark_dummy 8592 1 13.3683 0.0004691 ***
## Residuals: 48844 76
### Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Result of final model regression 2008-2007

# Call:
## lm(formula = df$CSR2008 ~ df$FCF/sales2007 + df$FCF/employee2007 +
##     df$Net PM2007 + df$Denmark_dummy)
### Residuals:
#### Min 1Q Median 3Q Max
-61.249 -19.935 6.519 18.526 43.930
### Coefficients:
#### Estimate Std. Error t value Pr(>|t|)
#### (Intercept) 67.742613 5.259118 12.881 < 2e-16 ***
#### df$FCF/sales2007 125.765697 39.377609 3.194 0.0020444 **
#### df$FCF/employee2007 -0.004783 0.003359 -0.321 0.7466436
#### df$Net PM2007 -69.739749 31.013427 -2.245 0.0276705 *
#### df$Denmark_dummy -25.959497 7.372262 -3.565 0.0004691 ***
### Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
### Residual standard error: 25.35 on 76 degrees of freedom
### Multiple R-squared: 0.4956, Adjusted R-squared: 0.4945
### F-statistic: 6.306 on 4 and 76 DF, p-value: 0.0001926

Vif-test 2008-2007
Scatterplot 2008-2007

Q-Q plot 2008-2007
Model residual distribution 2008-2007

Outlier test 2008-2007
Leverage Plots 2008-2007

Results from model 2009-2008

Result of stepwise regression 2009-2008
### Stepwise Model Path
### Analysis of Deviance Table
###
### Initial Model:
# df$CSR2009 ~ df$`FCF/sales2008` + df$`FCF/employee2008` + df$`ROE2008` +
# df$`Net PM2008` + df$`Debt/Equity2008` + df$`Sweden_dummy` +
# df$`Denmark_dummy` + df$`Finland_dummy` + df$`Norway_dummy`
###
### Final Model:
# df$CSR2009 ~ df$`FCF/sales2008` + df$`Net PM2008` + df$`Debt/Equity2008` +
# df$`Denmark_dummy`
###
###
<table>
<thead>
<tr>
<th>Step</th>
<th>DF</th>
<th>Deviance</th>
<th>Resid. DF</th>
<th>Resid. Dev</th>
<th>AIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>72</td>
<td>42814.52</td>
<td>525.8849</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>-</td>
<td>df$Norway_dummy 0</td>
<td>0.00000</td>
<td>72</td>
<td>42814.52 525.8849</td>
</tr>
<tr>
<td>3</td>
<td>-</td>
<td>df$Sweden_dummy 1</td>
<td>38.03557</td>
<td>73</td>
<td>42852.56 523.9568</td>
</tr>
<tr>
<td>4</td>
<td>-</td>
<td>df$<code>FCF/employee2008</code> 1</td>
<td>349.96791</td>
<td>74</td>
<td>43261.53 522.6137</td>
</tr>
<tr>
<td>5</td>
<td>-</td>
<td>df$<code>Finland_dummy</code> 1</td>
<td>544.27409</td>
<td>75</td>
<td>43745.80 521.6278</td>
</tr>
<tr>
<td>6</td>
<td>-</td>
<td>df$<code>ROE2008</code> 1</td>
<td>591.50035</td>
<td>76</td>
<td>44337.30 520.7157</td>
</tr>
</tbody>
</table>
###

Anova 2009-2008
###
#### Response: df$CSR2009
###
####
<table>
<thead>
<tr>
<th></th>
<th>Sum Sq</th>
<th>Df</th>
<th>F value</th>
<th>Pr(&gt;F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5062</td>
<td>1</td>
<td>5.2494</td>
<td>0.02473 *</td>
</tr>
<tr>
<td>2</td>
<td>2263</td>
<td>1</td>
<td>3.8787</td>
<td>0.05255 .</td>
</tr>
<tr>
<td>3</td>
<td>2236</td>
<td>1</td>
<td>3.8331</td>
<td>0.05392 .</td>
</tr>
<tr>
<td>4</td>
<td>4017</td>
<td>1</td>
<td>6.8850</td>
<td>0.01050 *</td>
</tr>
<tr>
<td>5</td>
<td>44337</td>
<td>76</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
###
---

### Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 1

Result of final model regression 2009-2008
###
#### Call:
#### lm(formula = df$CSR2009 ~ df$`FCF/sales2008` + df$`Net PM2008` +
#### df$`Debt/Equity2008` + df$`Denmark_dummy`)####
###
#### Residuals:
#### Min     1Q Median  3Q     Max
#### -68.159 -4.385  8.365 13.876  60.366
###
#### Coefficients:
#### (Intercept)     83.074     4.692 17.705 <2e-16 ***
#### df$`FCF/sales2008` -51.793     22.606 -2.291  0.0247 *
#### df$`Net PM2008`   57.700     29.298  1.969  0.0525 .
#### df$`Debt/Equity2008` -2.686     1.372 -1.958  0.0539 .
#### df$`Denmark_dummy` -18.588     7.084 -2.624  0.0105 *
###
---
### Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
###
#### Residual standard error: 24.15 on 76 degrees of freedom
#### Multiple R-squared:  0.2044, Adjusted R-squared:  0.1583
#### F-statistic: 4.761 on 4 and 76 DF,  p-value: 0.001758

Vif-test 2009-2008
Scatterplot 2009-2008

Q-Q plot 2009-2008

Q-Q plot

```r
## df$FCF/sales2008
## df$PMT2008
df$Debt/Equity2008
## df$Denmark_dummy
## 1.051348
```
Model residual distribution 2009-2008

Outlier test 2009-2008

### No Studentized residuals with Bonferonni p < 0.05
### Largest |rstudent|:

<table>
<thead>
<tr>
<th>rstudent</th>
<th>unadjusted p-value</th>
<th>Bonferonni p</th>
</tr>
</thead>
<tbody>
<tr>
<td>-3.017154</td>
<td>0.0034834</td>
<td>0.28216</td>
</tr>
</tbody>
</table>

Leverage Plots 2009-2008
Results from model 2010-2009

Result of stepwise regression 2010-2009

```R
## Stepwise Model Path
## Analysis of Deviance Table
##
## # Initial Model:
## # df$CSR2010 ~ df$FCF/sales2008 + df$FCF/employee2009 + df$ROE2009 +
## #   df$Net PM2009 + df$Debt/Equity2009 + df$Sweden_dummy +
## #   df$Denmark_dummy + df$Finland_dummy + df$Norway_dummy
##
## # Final Model:
## # df$CSR2010 ~ df$FCF/employee2009 + df$Denmark_dummy
##
##
## #             Step  Df  Deviance Resid. Df  Resid. Dev     AIC
## # 1             72 35529.60          72      510.7775
## # 2  - df$Norway_dummy  0  0.00000          72  35529.60          510.7775
## # 3           - df$Finland_dummy  1  129.49652          73      509.0721
## # 4           - df$Sweden_dummy  1  85.58781          74      507.2686
## # 5           - df$Net PM2009  1  244.56171          75  35990.24      505.8299
## # 6             - df$ROE2009  1  39.47208          76  36029.71      503.9097
## # 7            - df$FCF/sales2009  1  259.68567          77  36289.40      502.4914
## # 8            - df$Debt/Equity2009  1  273.34321          78  36562.74      501.0992
```

Anova 2010-2009
## Anova Table (Type II tests)
##
## Response: df$CSR2010
##
##    Sum Sq  Df   F value  Pr(>F)
## df$FCF/employee2009 - 3513  1 7.49390  0.007565 **
## df$Denmark_dummy 3153  1 6.72700  0.011338 *
## Residuals 36563  78
##
## ---
## Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ 1

### Result of final model regression 2010-2009

### Call:
### lm(formula = df$CSR2010 ~ df$FCF/employee2009 + df$Denmark_dummy)
###
### Residuals:
###   Min 1Q Median 3Q Max
### -71.269 -3.407 6.710 10.967 34.418
###
### Coefficients:
###                     Estimate Std. Error t value Pr(>|t|)
### (Intercept)     84.740097   3.055034 27.741  < 2e-16 ***
### df$FCF/employee2009 -0.005862   0.002142 -2.738  0.00767 **
### df$Denmark_dummy -16.076897   6.198585 -2.594  0.01134 *
###
### ---
### Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ 1
###
### Residual standard error: 21.65 on 78 degrees of freedom
### Multiple R-squared:  0.1488, Adjusted R-squared:  0.127
### F-statistic: 6.82 on 2 and 78 DF,  p-value: 0.001864

### Vif-test 2010-2009

```
# df$FCF/employee2009  df$Denmark_dummy
# 1.001823 1.001823
```

### Scatterplot 2010-2009
Q-Q plot 2010-2009

Model residual distribution 2010-2009
Outlier test 2010-2009

## No Studentized residuals with Bonferonni p < 0.05
## Largest \(|r_{student}|\): 
## \( r_{student\ unadjusted\ p-value \ Bonferonni\ p} \)
## 2 -3.565615 0.00062779 0.050851

Leverage Plots 2010-2009
Results from model 2011-2010

Result of stepwise regression 2011-2010

```r
## Stepwise Model Path
## Analysis of Deviance Table
##
## Initial Model:
## df$CSR2011 ~ df$'FCF/sales2010' + df$'FCF/employee2010' + df$ROA2010 +
## df$ROE2010 + df$'Net PM2010' + df$'Debt/Equity2010' + df$'sweden_dumm y'+
## df$Denmark_dummy + df$Finland_dummy + df$Norway_dummy
##
## Final Model:
## df$CSR2011 ~ df$'FCF/employee2010' + df$'Debt/Equity2010' + df$'Denmark_d ummy'
##
##
##        Step  Df Deviance Resid. Df Resid. Dev     AIC
## 1          1  31983.65       70  31983.65     504.2610
## 2          2 - df$Norway dummy  0  31983.65       71  31983.65     504.2610
## 3          3 - df$Finland dummy  1  30.39144       72  32814.04     502.3379
## 4          4 - df$ROA2010  1  56.00082       73  32870.85     500.4795
## 5          5 - df$'FCF/sales2010'  1 108.11691       74  32178.17     498.7521
## 6          6 - df$'sweden_dumm y'  1 261.57258       75  32439.74     497.4079
## 7          7 - df$ROE2010  1 216.39274       76  32656.13     495.9464
## 8          8 - df$'Net PM2010'  1 813.65748       77  33469.79     495.9399
```

Anova 2011-2010
## Anova Table (Type II tests)

### Response: df$CSR2011
### df$FCF/employee2010  2447 1 5.6285 0.0001 ***
### df$Debt/Equity2010  1896 1 2.5209 0.11644
### df$Denmark_dummy  3636 1 8.3654 0.000497 **
### Residuals  33470 77
### ---
### Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

### Result of final model regression 2011-2010

#### Call:
```
lm(formula = df$CSR2011 ~ df$FCF/employee2010 + df$Debt/Equity2010 +
    df$Denmark_dummy)
```
#### Residuals:
```
     Min 1Q Median 3Q Max
-54.175 -3.674  6.141 9.298 42.170
```
#### Coefficients:

| Estimate | Std. Error | t value | Pr(>|t|) | Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1 |
|----------|------------|---------|---------|---------------------------------------------------------------|
| (Intercept) | 88.576837 | 3.181479 | 27.841  < 2e-16  *** |
| df$FCF/employee2010 | -0.000796 | 0.002864 | -2.372  0.02017  * |
| df$Debt/Equity2010 | -2.358485 | 1.485431 | -1.588  0.11644 |
| df$Denmark_dummy | -17.025480 | 6.163069 | -2.892  0.00497  ** |
### Vif-test 2011-2010
```
# df$FCF/employee2010 df$Debt/Equity2010 df$Denmark_dummy
# 1.029561 1.049971 1.065026
```

### Scatterplot 2011-2010
Q-Q plot 2011-2010

Model residual distribution 2011-2010
Outlier test 2011-2010

## No Studentized residuals with Bonferonni $p < 0.05$

## Largest $|\text{rstudent}|$

<table>
<thead>
<tr>
<th></th>
<th>rstudent</th>
<th>unadjusted p-value</th>
<th>Bonferonni p</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>-2.878825</td>
<td>0.0051814</td>
<td>0.41969</td>
</tr>
</tbody>
</table>

Leverage Plots 2011-2010
Results from model 2012-2011

Result of stepwise regression 2012-2011

```r
## Stepwise Model Path
## Analysis of Deviance Table
##
## Initial Model:
## df$CSR2012 ~ df$FCF/sales2011` + df$FCF/employee2011` + df$ROA2011` + 
## df$ROE2011` + df$Net_PM2011` + df$Debt/Equity2011` + df$Sweden_dummy` + 
## df$Denmark_dummy` + df$Finland_dummy` + df$Norway_dummy`
##
## Final Model:
## df$CSR2012 ~ df$FCF/sales2011` + df$Debt/Equity2011` + df$Denmark_dummy`
##
##
## Step Df Deviance Resid. Df Resid. Dev AIC
## 1 1
## 2 2 - df$Norway_dummy` 0 0.000000 71 28670.65 495.4036
## 3 2 - df$Sweden_dummy` 1 4.576223 72 28675.23 493.4165
## 4 2 - df$Finland_dummy` 1 13.455973 73 28688.68 491.4545
## 5 3 - df$FCF/employee2011` 1 34.448797 74 28723.13 489.5517
## 6 4 - df$ROE2011` 1 28.024250 75 28751.15 487.6307
## 7 4 - df$ROA2011` 1 253.911957 76 29005.07 486.3429
## 8 4 - df$Net_PM2011` 1 622.041293 77 29627.11 486.0617
```

Anova 2012-2011
## Result of final model regression 2012-2011

```r
# Call:
# lm(formula = df$CSR2012 ~ df$"FCF/sales2011" + df$"Debt/Equity2011" +
#     df$Denmark_dummy)
#
# Residuals:
#   Min     1Q Median     3Q    Max
#  -55.174   -4.962   5.394    9.751   38.672
#
# Coefficients:
#             Estimate Std. Error   t value Pr(>|t|)
# (Intercept)  89.150      3.709  24.0334  < 2e-16 ***
# df$"FCF/sales2011" -37.383     18.624  -2.0077   0.0482 *
# df$"Debt/Equity2011" -2.060     1.143  -1.8026   0.0755 .
# df$Denmark_dummy -15.015      5.691  -2.6382   0.0101 *
# ---
# Signif. codes:  
#  
# Residual standard error: 19.62 on 77 degrees of freedom
# Multiple R-squared:  0.1765, Adjusted R-squared:  0.1444
# F-statistic:  5.5 on 3 and 77 DF,  p-value: 0.001779
```

## Scatterplot 2012-2011

```r
#   df$"FCF/sales2011"  df$"Debt/Equity2011"  df$Denmark_dummy
#  1.001116  1.030060  1.028961
```
Q-Q plot 2012-2011

Model residual distribution 2012-2011
Outlier test 2012-2011

## No Studentized residuals with Bonferonni p < 0.05
## Largest |rstudent|:
## rstudent unadjusted p-value Bonferonni p
## 3 -3.229834 0.0018308 0.14829

Leverage Plots 2012-2011
Results from model 2013-2012

Result of stepwise regression 2013-2012

```
## Stepwise Model Path
## Analysis of Deviance Table
##
## Initial Model:
## df$CSR2013 ~ df$'FCF/sales2012' + df$'FCF/employee2012' + df$'ROA2012' +
## df$'ROE2012' + df$'Net PM2012' + df$'Debt/Equity2012' + df$'Sweden_dummy'
## + df$'Denmark_dummy' + df$'Finland_dummy' + df$'Norway_dummy'
##
## Final Model:
## df$CSR2013 ~ df$'FCF/sales2012' + df$'Debt/Equity2012' + df$'Sweden_dummy'
##
##
##                 Step Df Deviance Resid. Df Resid. Dev    AIC
## 1 1             0.000000    71  25840.19 486.9842
## 2 2  - df$Norway_dummy    1      4.526295    72  25844.71 484.9984
## 3 3  - df$Finland_dummy   1     13.111566    74  25862.55 481.0543
## 4 4  - df$Sweden_dummy    1      6.358964    75  26100.68 479.7967
## 5 5  - df$ROA2012        1  138.130964    76  26333.51 478.5160
## 6 6  - df$'FCF/employee2012'    1    25840.99 486.9842
## 7 7  - df$ROE2012        1    509.202168    77  26842.71 478.0673
## 8 8  - df$'Net PM2012'    1    509.202168    77  26842.71 478.0673
```

Anova 2013-2012
## Anova Table (Type II tests)

### Response: df$CSR2013

<table>
<thead>
<tr>
<th>Sum Sq</th>
<th>DF</th>
<th>F value</th>
<th>Pr(&gt;F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6140.1</td>
<td>1</td>
<td>17.6132</td>
<td>7.189e-05 ***</td>
</tr>
<tr>
<td>789.9</td>
<td>1</td>
<td>2.2658</td>
<td>0.13635</td>
</tr>
<tr>
<td>1182.6</td>
<td>1</td>
<td>3.3925</td>
<td>0.06934</td>
</tr>
<tr>
<td>Residuals</td>
<td>26842.7</td>
<td>77</td>
<td></td>
</tr>
</tbody>
</table>

---

**Signif. codes:*** 0 '****' 0.001 '***' 0.01 '*' 0.05 '.' 0.1 ' ' 1

---

### Result of final model regression 2013-2012

#### Call:

```
# lm(formula = df$CSR2013 ~ df$`FCF/sales2012` + df$`Debt/Equity2012` +
#     df$Denmark_dummy)
```

#### Residuals:

<table>
<thead>
<tr>
<th>Min</th>
<th>1Q</th>
<th>Median</th>
<th>3Q</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>-54.737</td>
<td>-7.314</td>
<td>4.120</td>
<td>11.051</td>
<td>31.056</td>
</tr>
</tbody>
</table>

#### Coefficients:

| Estimate | Std. Error | t value | Pr(>|t|) |
|----------|------------|---------|---------|
| (Intercept) | 92.443 | 3.564 | 25.040 | < 2e-16 *** |
| df$`FCF/sales2012` | -67.016 | 15.968 | -4.197 | 7.19e-05 *** |
| df$`Debt/Equity2012` | -1.688 | 1.121 | -1.505 | 0.1363 |
| df$Denmark_dummy | -10.004 | 5.431 | -1.842 | 0.0693 |

---

**Signif. codes:*** 0 '****' 0.001 '***' 0.01 '*' 0.05 '.' 0.1 ' ' 1

---

### Residual standard error: 18.67 on 77 degrees of freedom

### Multiple R-squared: 0.2531, Adjusted R-squared: 0.224

### F-statistic: 8.698 on 3 and 77 DF, p-value: 4.86e-05

---

### Vif-test 2013-2012

```
# df$`FCF/sales2012` df$`Debt/Equity2012` df$Denmark_dummy
# 1.021174 1.017439 1.034265
```

### Scatterplot 2013-2012
Q-Q plot 2013-2012

Model residual distribution 2013-2012
Outlier test 2013-2012

## No Studentized residuals with Bonferroni p < 0.05
## Largest |rstudent|:
## rstudent unadjusted p-value Bonferroni p
## 3 -3.443493 0.00093733 0.075924

Leverage Plots 2013-2012
Results from model 2014-2013

Result of stepwise regression 2014-2013

```r
## Stepwise Model Path
## Analysis of Deviance Table
##
## Initial Model:
## df$CSR2014 ~ df$'FCF/sales2013' + df$'FCF/employee2013' + df$ROA2013 +
## df$ROE2013 + df$'Net PM2013' + df$'Debt/Equity2013' + df$Sweden_dummy
## +
## df$Denmark_dummy + df$Finland_dummy + df$Norway_dummy
##
## Final Model:
## df$CSR2014 ~ df$'FCF/sales2013' + df$ROA2013 + df$ROE2013 + df$Sweden_dum
## +
## + df$Finland_dummy
##
##
##  Step Df   Deviance Resid. Df Resid. Dev  AIC
## 1  71  25867.88  487.0710
## 2  71  25867.88  487.0710
## 3  72  25924.77  485.2489
## 4  73  26056.05  483.6580
## 5  74  26176.75  482.0324
## 6  75  26673.00  481.5536
```

Anova 2014-2013
## Anova Table (Type II tests)

<table>
<thead>
<tr>
<th></th>
<th>Sum Sq</th>
<th>Df</th>
<th>F value</th>
<th>Pr(&gt;F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>df$FCF/sales2013</td>
<td>3560.8</td>
<td>1</td>
<td>10.0123</td>
<td>0.002247 **</td>
</tr>
<tr>
<td>df$ROA2013</td>
<td>1078.7</td>
<td>1</td>
<td>3.0332</td>
<td>0.085677 .</td>
</tr>
<tr>
<td>df$ROE2013</td>
<td>1489.6</td>
<td>1</td>
<td>4.1685</td>
<td>0.044203 *</td>
</tr>
<tr>
<td>df$Swedan dummy</td>
<td>141.7</td>
<td>1</td>
<td>2.2823</td>
<td>0.135059</td>
</tr>
<tr>
<td>df$Finland dummy</td>
<td>1808.2</td>
<td>1</td>
<td>5.0845</td>
<td>0.027059 *</td>
</tr>
<tr>
<td>Residuals</td>
<td>26673.0</td>
<td>75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

### Result of final model regression 2014-2013

```r
lm(formula = df$CSR2014 ~ df$FCF/sales2013 + df$ROA2013 + df$ROE2013 +
   df$Swedan dummy + df$Finland dummy)
```

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>1Q</th>
<th>Median</th>
<th>3Q</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>-54.823</td>
<td>-6.207</td>
<td>3.247</td>
<td>11.158</td>
<td>38.621</td>
<td></td>
</tr>
</tbody>
</table>

### Coefficients:

|                     | Estimate  | Std. Error | t value | Pr(>|t|) |
|---------------------|-----------|------------|---------|---------|
| (Intercept)         | 90.222    | 5.357      | 14.976  | < 2e-16 *** |
| df$FCF/sales2013    | -45.096   | 14.252     | -3.184  | 0.00225 ** |
| df$ROA2013          | 93.925    | 53.930     | 1.742   | 0.08568 . |
| df$ROE2013          | -53.699   | 26.238     | -2.047  | 0.04420 * |
| df$Swedan dummy     | 7.528     | 4.983      | 1.511   | 0.13506  |
| df$Finland dummy    | 14.251    | 6.320      | 2.255   | 0.02706 * |

---

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Multiple R-squared:  0.2412, Adjusted R-squared:  0.1906
F-statistic:  4.769 on 5 and 75 DF,  p-value:  0.0007737

---

### Vif-test 2014-2013

<table>
<thead>
<tr>
<th></th>
<th>df$FCF/sales2013</th>
<th>df$ROA2013</th>
<th>df$ROE2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>df$FCF/sales2013</td>
<td>1.101356</td>
<td>2.190840</td>
<td>2.140375</td>
</tr>
<tr>
<td>df$Swedan dummy</td>
<td>1.413726</td>
<td>1.442023</td>
<td></td>
</tr>
<tr>
<td>df$Finland dummy</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Scatterplot 2014-2013
Q-Q plot 2014-2013

Model residual distribution 2014-2013
Outlier test 2014-2013

## No Studentized residuals with Bonferonni p < 0.05
## Largest |rstudent|:
## rstudent unadjusted p-value Bonferonni p
## 3 -3.316645 0.0014142 0.11455

Leverage Plots 2014-2013
Results from model 2015-2014

Result of stepwise regression 2015-2014

```r
## Stepwise Model Path
## Analysis of Deviance Table
##
## ## Initial Model:
## df$CSR2015 ~ df$`FCF/sales2014` + df$`FCF/employees2014` + df$ROA2014 + 
## df$ROE2014 + df$`Net PM2014` + df$`Debt/Equity2014` + df$`Sweden dummy` + 
## df$`Denmark dummy` + df$`Finland dummy` + df$`Norway dummy`
##
## ## Final Model:
## df$CSR2015 ~ df$`FCF/sales2014` + df$ROA2014 + df$ROE2014 + df$`Debt/Equity2014` + 
## df$`Denmark dummy`
##
## #
## #
## #
##  # Step Df Deviance Resid. Df Resid. Dev  AIC
## # 1  1
## # 2  1 0.000000 71 17555.51 455.6726
## # 3  1 9.839384 72 17565.35 453.7180
## # 4  1 154.301228 73 17719.65 452.4264
## # 5  1 278.081409 74 17997.73 451.6877
## # 6  1 232.489439 75 18238.22 450.7273
```

Anova 2015-2014
## Anova Table (Type II tests)

### Response: df$CSR2015

<table>
<thead>
<tr>
<th></th>
<th>Sum Sq</th>
<th>Df</th>
<th>F value</th>
<th>Pr(&gt;F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>df$<code>FCF/sales2014</code></td>
<td>2709.1</td>
<td>1</td>
<td>11.145</td>
<td>0.0013318 **</td>
</tr>
<tr>
<td>df$ROA2014</td>
<td>3599.7</td>
<td>1</td>
<td>14.885</td>
<td>0.0002481 ***</td>
</tr>
<tr>
<td>df$ROE2014</td>
<td>2329.1</td>
<td>1</td>
<td>9.581</td>
<td>0.0027624 **</td>
</tr>
<tr>
<td>df$<code>Debt/Equity2014</code></td>
<td>1850.6</td>
<td>1</td>
<td>7.613</td>
<td>0.0072765 **</td>
</tr>
<tr>
<td>df$Denmark_dummy</td>
<td>1425.8</td>
<td>1</td>
<td>5.865</td>
<td>0.0178541 *</td>
</tr>
<tr>
<td>Residuals</td>
<td>18230.2</td>
<td>75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Signif. codes:  0 ‘****’ 0.001 ‘***’ 0.01 ‘**’ 0.05 ‘.’ 0.1 ‘ ’ 1

---

### Result of final model regression 2015-2014

#### Call:
```
lm(formula = df$CSR2015 ~ df$`FCF/sales2014` + df$ROA2014 + df$ROE2014 +
    df$`Debt/Equity2014` + df$Denmark_dummy)
```

#### Residuals:
```
    Min 1Q Median 3Q Max
-46.060 -5.176 2.985 7.860 27.909
```

#### Coefficients:
```
            Estimate  Std. Error  t value  Pr(>|t|)
(Intercept) 86.409     3.336     25.905 < 2e-16 ***
df$`FCF/sales2014` -41.066   12.301    -3.338  0.001314 **
df$ROA2014  236.171     61.371     3.848  0.000248 ***
df$ROE2014 -84.379     27.259    -3.095  0.002762 **
df$`Debt/Equity2014`  3.336     1.209     2.759  0.007277 **
df$Denmark_dummy -10.964     4.527    -2.422  0.017854 *
```

### Signif. codes:  0 ‘****’ 0.001 ‘***’ 0.01 ‘**’ 0.05 ‘.’ 0.1 ‘ ’ 1

#### Residual standard error: 15.59 on 75 degrees of freedom

#### Multiple R-squared: 0.2891, Adjusted R-squared: 0.2417

#### F-statistic: 6.1 on 5 and 75 DF,  p-value: 8.586e-05

---

### Vif-test 2015-2014

```
<table>
<thead>
<tr>
<th></th>
<th>df$<code>FCF/sales2014</code></th>
<th>df$ROA2014</th>
<th>df$ROE2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>df$<code>FCF/sales2014</code></td>
<td>2.086576</td>
<td>3.471213</td>
<td>3.329031</td>
</tr>
<tr>
<td>df$<code>Debt/Equity2014</code></td>
<td>2.213233</td>
<td>1.030461</td>
<td></td>
</tr>
</tbody>
</table>
```

---

### Scatterplot 2015-2014
Q-Q plot 2015-2014

Model residual distribution 2015-2014
Outlier test 2015-2014

### No Studentized residuals with Bonferonni p < 0.05
### Largest |rstudent|:
### rstudent unadjusted p-value Bonferonni p
### 70 -3.293652 0.0015188 0.12302

Leverage Plots 2015-2014