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Financial Reporting Quality in Nordic Countries

A study of 62 publicly listed companies from Finland, Sweden and Denmark

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Abstract

The aim of this research was to identify the influence that corporate governance characteristics of a firm have on the quality of financial information provided to its stakeholders, specifically for Nordic countries (Finland, Sweden and Denmark). Analysis was performed based on firm-level secondary data. The main research objective was to ascertain whether there exist potential *causal relationships* between the characteristics of a firm's board of directors and the executive team, and the respective amount of discretionary accruals, which is used as a measure of the quality of financial information – a high discretionary accrual amount representing lower financial information quality.

Theoretical and empirical literature was collected from diverse literature including research articles, corporate reports and statements, regulatory reports and papers published by professional organizations. Compiled secondary data, on the other hand, were obtained from the audited annual statements and reports of the chosen 62 publicly listed firms in Finland, Sweden and Denmark for the fiscal year of 2015. SPSS program was used to do both descriptive and inferential analysis using the data in order to identify *causal relationships* between the variables involved.

The result indicated that the ratio of performance pay to fixed pay of an executive team significantly and *positively* affects the amount of discretionary accruals at the firm level, thus lowering the quality of financial data. Furthermore, the experience of board members serving in a firm affects the quality of financial reporting *adversely*. Several other control variables also affect the amount of discretionary accruals, such as the number of other directorship positions a firm board member holds in other firms (*positive relationship*) and the education background of the board members (*negative relationship*).

Keywords/tags (subjects)

Quality of financial reporting, Quality of accounting information, Corporate governance, Earnings management, Discretionary accruals, Jones model

Miscellaneous

Appendices attached (16 pages)

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1 Introduction

1.1 Background

Accountancy is the art of presenting financial information on the performance of a business entity to its stakeholders in the form of financial statements. The International Accounting Standards Committee (IASC) defines financial statements as the documents that provide information regarding the financial position, performance, and the capability of a firm that is useful to a variety of users in making economic decisions (Elliot and Elliot 2011, 22-23). The quality of financial information published by a firm can be assessed through various measures, such as the persistence of its earnings, accrual amounts, firm characteristics, corporate governance and controls, choice of accounting policies, etc. However, the quality of information is, in general, considered high if it represents the actual economic condition of the firm fairly using relevant and reliable data. But, due to the choice of accounting methods, managers are usually given considerable amount of discretion when preparing financial statements, which may, in some cases be misused in order to create short-term personal gains or assumed overall gains. This process of misreporting financial information is known as ”Earnings management”. Earnings management can be done by various means, such as, changes in a firm’s capital structure, changes in the accounting methods, and the use of accruals – specifically, the discretionary accruals (Jones model 1991, 206). Xie (2001) showed that one could measure the quality of earnings presented by a firm more accurately by eliminating the ”normal” or non-discretionary accruals from the equation, since these can be linked to the macro-economic conditions in the market and hence be justified. Discretionary accruals are one of the most commonly used and efficient measures of detecting earnings management. Hence, in this research, the focus is placed on the use of accruals, specifically – discretionary accruals, as the source of earnings management.

Earnings management is a phenomenon that is influenced by various factors related to the corporate governance practices of a firm. There is extensive literature on the

relationships between the characteristics of board of directors and the executive team and related factors, and earnings management incidences. However, the results of these researches are mixed – providing positive as well as negative relationships between corporate governance characteristics and earnings management. Therefore, further research on this subject is important in order to gain a deeper understanding of the phenomenon, which was one of the major motivations for conducting this research. This led to the hypotheses to be tested through this research, the most important one being that the discretionary accruals of a firm are influenced by certain characteristics of the board of directors and the executive team members, and their remuneration.

The relevant hypotheses were formed after reviewing a variety of literature, both theoretical and empirical. These hypotheses were tested by analyzing the secondary data collected from 62 major publicly listed firms from Finland, Sweden, and Denmark. These data were compiled data that consisted of the financial figures involved in the calculation of discretionary accruals and the characteristics of board of directors of the chosen companies. Subsequently, both descriptive and inferential data analyses were performed in order to develop a better understanding of the association between the corporate governance characteristics of firms and discretionary accruals.

The analyses showed that the ratio of performance pay to fixed pay of executive team members significantly and positively affects the amount of discretionary accruals at the firm level. According to the underlying assumption that a higher discretionary accrual amount represents lower quality of financial reporting, this finding represents a negative relationship between the performance pay of the executive team members and the quality of financial reporting of the respective firm. Furthermore, the results indicate that the experience of board members serving in a firm affects the quality of financial reporting adversely. The effect of several other control variables has also been studied, such as the number of directorships held in other firms by the firm board members and the education background of firm board members affect discretionary accruals positively and negatively respectively.

1.2 Motivation

The author's motivation behind this research was formed by the tremendous interest in the field of finance in general and the chosen topic in particular. The topic was introduced to the author by his thesis tutor and finance lecturer - Shabnamjit Hundal. Since the author wants to pursue a career in the finance industry, specifically in the financial markets, the topic appealed to his interest. Financial reports play a major role in the financial markets, and the importance of their quality cannot be more emphasized. The quality of financial reporting has been cause of concern to a variety of market players and regulators all over the world, however not much research has been done on this topic in Nordic countries. Therefore, with such research background, the relevance of the current study is even more significant.

1.3 Research questions

An extensive literature on the quality of financial reporting, characteristics of high quality earnings and the factors influencing the two has been generated in the last couple of decades. However, not much research has been in done in the same area taking Nordic countries into consideration. This led to the first research question concerning publicly listed firms in Nordic countries, specifically in Finland, Sweden, and Denmark:

1. *Which characteristics of a board of directors influence the quality of accounting information provided by the firm to its stakeholders?*

Although earnings management has been a concern for a long time, very little evidence of the same has been generated by academics, as documented by Healy and Wahlen (1999). In a publicly listed company, the board of directors must approve the financial statements, therefore, the characteristics of the board of directors may influence the financial reporting quality. Different researchers use different techniques to examine the quality of accounting information provided by a firm. In order to identify the various methods used to measure the quality of accounting

information and find out the most efficient one, the second research question was formed:

2. *How is the quality of accounting information measured?*

Once the factors of corporate governance that influence the quality of financial information provided by firms have been identified, it is important to study the mechanism through which the quality of accounting information provided by firms can be enhanced. Hence, the last research question was as follows:

3. *What are the imperatives of enhancing the quality of accounting information?*

1.4 Structure of the thesis

The rest of this thesis has been divided into 5 main chapters, the first one being the ”Theoretical Background”, which builds a theoretical background for the reader by explaining the key concepts discussed in the research. The second chapter “Empirical Literature Review” includes the results and findings of already existing research on the quality of financial reporting and its imperatives. The third chapter ”Methodology” describes the research approach and methods applied during the research in order to collect and analyze data. It also lays down the main research questions for this study. The fourth chapter i.e. ”Results” states the findings of the analyses performed on the data. These findings have been divided into two parts – descriptive statistics and regression analysis results. The fifth and last chapter of this thesis is the ”Discussion”, which examines the previously mentioned results in detail and explains the outcomes while comparing them to existing literature i.e. the results of previously conducted researches on the similar subject. At the end, the list of references used to collect data for this thesis has been provided along with the appendices that mainly show the collected data and the results of the analysis.

2 Theoretical Background

2.1 Financial statements and discretionary accruals

The International Accounting Standards Committee (IASC) defines financial statements as the documents that provide information regarding the financial position, performance, and the capability of a firm that is useful to a variety of users in making economic decisions. In 2007, the IASC stated that a public firm needs to provide all of the following statements:

- A statement of financial position at the end of the period
- A statement of comprehensive income for the period
- A statement of changes in equity for the period
- A statement of cash flows for the period
- Notes comprising a summary of important accounting policies adopted by the firm and other explanatory information.

(Elliot and Elliot 2011, 22-23.)

There are two basic methods of accounting that are employed by firms to report their incomes and expenses – cash accounting and accrual accounting. Under cash accounting, earnings are recorded when the payment has been received and expenses are recorded when a payment has been made. On the other hand, under accrual accounting, earnings and expenses are not recorded when the payment has been made or received, but rather when the transaction happens (good or services are delivered or a sale is made). Hence, accruals are either the income that has been earned but not yet recorded or expenses that have been incurred but not yet recorded. According to Tudor and Mutiu (1990, 1-2), accrual based accounting is a more efficient method because it represents a better picture of the current income, due to which the balance sheet (also known as the statement of financial position) is more accurate. Also, it is a better indicator of a firm's present and future cash generating abilities since it requires the financial statements not just to present the receipts and payments made but also the future cash outflows and inflows in the future. (ibid., 51.)

Dechow, Khimich, and Sloan (2001) demonstrated that if a company has high earnings in a particular period, one could expect it to have reasonably high earnings in the future as well. According to Cheng and Warfield (2005, 7), Stein (1989, 657) argued that ”… the stock market uses earnings to make a rational forecast of firm value – higher earnings today will be correlated with higher earnings in the future.” However, it is important to notice whether the earnings are mostly driven by actual cash flows or accruals; if accruals form the major part of the earnings, it is much less likely that the earnings will remain high in the upcoming period. Dechow and colleagues hypothesized that investors are highly fixated on a firm’s earnings, regardless of a firm having relatively high accruals. Further, they validated this hypothesis by showing that the returns on a high accrual portfolio were abnormally low, indicating that investors could not anticipate the consequences of a firm having high accrual amounts. This phenomenon is known as ”accrual anomaly”. Since auditors are meant to present a realistic picture of a firm’s economic condition and inspect the quality of financial reporting, they should be able to identify the presence of high accruals in a firm’s statements. However, Bradshaw, Richardson, and Sloan (2001) did not find any evidence of auditor changes in the financial statements of high accrual firms. According to Dechow and colleagues, Lev and Nissim (2006) found that some institutional investors identify the existence of accrual anomaly and try to arbitrage it. However, the magnitude of this is very low.

Accrual accounting gives management some discretion when it comes to estimating cash flows. Managers have discretion when it comes to estimating the expected lives of long-term assets, choosing the type of depreciation calculation method, estimating the receivables, deferred taxes, research and development expenditure needs, inventory levels to be maintained, etc. (Even though this flexibility can allows to more accurate information to be presented by solving the timing and mismatching issues related to cash flows, it can also be misused by managers to take opportunistic steps. Due to the flexible nature of accrual accounting, accruals can be divided into two types – discretionary and non-discretionary. Discretionary accruals can be measured using Jones model (1991), which uses a regression model to first calculate non-discretionary accruals and then requires the subtraction of non-discretionary accruals from the total accrual amount. (Subramanyam 1996, 250-251.) Xie (2001)

showed that one could measure the quality of earnings presented by a firm more accurately by eliminating the ”normal” or non-discretionary accruals from the equation, since these can be linked to the macro-economic conditions in the market and hence be justified. The most common components of financial statements that display earnings manipulation (high discretionary accruals) are the inventory and accounts receivable. Richardson, Sloan, Soliman, and Tuna (2006) found that firms with high accruals (representing a high likelihood of earnings manipulation) are more likely to have allegations against them by the SEC for overstating their earnings figure. Dechow et al. (13-18.)

Jones' model of discretionary accruals

Jones model is one of the most reliable methods to calculate discretionary accruals. In some models that separate the discretionary portion of total accruals from the non-discretionary one, it is assumed that the non-discretionary portion of accruals is constant throughout the period. However, Jones model does not incorporate in itself the similar assumption. Jennifer Jones' model attempts to control for the impact of changes in the economic circumstances on non-discretionary accruals. (Dechow, Sloan, & Sweeney 1995, 198.) In order to do so, Jones (1991) uses the following assumption model for total accruals of a firm:

$$\mathbf{TA_{it}/A_{it-1} = \beta_0 (1/A_{it-1}) + \beta_1 (\Delta REV_{it}/A_{it-1}) + \beta_2 (PPE_{it}/A_{it-1}) + \varepsilon_{it}}$$

where:

TA_{it} = total accruals in year t (current year) for firm i;
ΔREV_{it} = revenues in year t less revenues in year t – 1 (previous year) for firm i;
PPE_{it} = gross property, plant, and equipment in year t for firm i;
A_{it-1} = total assets in year t -1 for firm i;
ε_{it} = error term in year t for firm i;
β_0, β_1, β_2 = Beta coefficients (representing firm specific parameters)

The variables used in the formula above are described below:

- **Total Assets (A) = Current assets + Fixed assets**

Mirza, Orrell, and Holt (2008, 10) define an asset as a resource in control of the entity as a result of past events and from which economic benefits are expected to be received by the entity in the future. Total assets comprise of current assents (e.g. cash, receivables, etc.) and fixed assets (property, plant and equipment, goodwill, etc.).

- **Change in revenue or net sales (ΔREV) = Net sales in current year – Net sales in previous year**

Net sales is the amount received by the sale of goods and services after deduction of returns and discounts made to the customers.

- **PPE = Gross Property + Gross Plants + Gross Equipment**

PPE refers to a company's tangible assets that are necessary for business operations. These assets are relatively less liquid than current assets and are mostly used in production and supply of goods and services, administration purposes or for rental purposes. (ibid., 108.)

- **Error term (ε):** This is the prediction of the discretionary accruals of a firm in an ideal world. This value may or may not be very different from the actual estimate of discretionary accruals.
- **Total Accruals (TA) = Change in assets – Change in liabilities – Change in cash [Balance sheet method]**

Or

- **Total Accruals (TA) = Profit after tax – Cash earnings [Cash flow statement method]**

Accruals are defined as the income that has been earned but not yet recorded or expenses that have been incurred but not yet recorded.

Profit after tax refers to the net amount of profits earned by a company after deducting all the expenses occurred before, during, and after sales and the taxes paid.

A **liability** is a present obligation of a company or an individual that arises from past events and is to be settled in the future resulting in an outflow of resources. (ibid.)

Total liabilities are the sum of short-term (e.g. payables, accrued expenses, short-term loans, etc.) and long-term liabilities (e.g. bonds, long-term loans, etc.).

Cash refers to the amount of money held by the company but not deposited in the bank.

Cash Earnings refers to the income that has been generated in the form of cash as a result of sale of goods and/or services.

The model for total accruals presented above is used to calculate the beta coefficients (β_0, β_1, β_2) by regressing the equation in SPSS or other data analysis programs. Total Net Accruals are scaled by total assets in the previous year in order to reduce the effect of firm size on the results. After having received the values for the beta coefficients, the following formula is used to calculate the non-discretionary accruals:

NDA (Non-discretionary accruals) / A_{it-1} = $\beta_0(1/A_{it-1}) + \beta_1(\Delta REV) + \beta_2(PPE / A_{it-1})$
Once the non-discretionary accruals have been calculated, discretionary accruals can be calculated by subtracting non-discretionary accruals from the total net accruals i.e. **Discretionary accruals (DA) = Total net accruals (TA) – Non-discretionary accruals (NDA)** (Jones 1991, 211-212.)
Dechow et al. (1995) state that Jones model and the modified version of Jones model are the most powerful models to detect earnings management via the estimation of discretionary accruals of a firm within a given period of time (215).

2.2 Agency theory

The firm owners (or shareholders) are not in direct control of all the activities conducted by the managers; this is where the role of board of directors is vital. A board of directors appoints and advises the top-level management on various corporate issues and decisions. (Brealy, Myers, and Allen 2011, 5.) However, people are, by nature, self-interested, and due to this, whenever they engage in mutual endeavors, there is a high probability of conflict of interests arising (Jensen 1994, 13). This conflict of interest, when exists between managers & shareholders, leads to agency problems. Agency problems occur as a result of agency relationships. Jensen and Meckling (1976) define an agency relationship as ”a contract under which one or

more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent." (5). Agency theory looks at the implications of an agency relationship. If all the parties involved in a relationship are utility maximizers, there is a good chance that the agent might not act in the best interest of the principal. In order to avoid this situation, the principal can offer appropriate incentives to the agent and thus incur monitoring expenses to keep the agent from following unethical practices. Furthermore, in some cases, an agent might consume unnecessary resources as a guarantee to the principal in an attempt to gain their trust (also knows as bonding cost). These costs are known as agency costs. In addition to these costs, agency costs also comprise of a "residual loss", which is the additional cost incurred on top of the monitoring and bonding costs. (Jensen and Meckling 1976, 5.)

Ferris, Jagannathan, and Pritchard (2009, 1087-1111) mention that board members with multiple directorships may become overcommitted and hence the quality of monitoring may be compromised. This is also known as "Business hypothesis". Board members have rewards for serving on multiple boards; holding multiple directorship positions makes board members more visible and enhances their status in the business community. However, firms might be skeptical about hiring a director who has multiple board positions in other companies due to their busyness.

2.3 Information asymmetry & Earnings management

According to Richardson (1998, 1-5), managers have an access to private information about the firm and its earnings, which might not be available to the shareholders. This is called "information asymmetry". This asymmetry can manifest itself in the form of financial reports published by a firm. Consequently, when information asymmetry is high, stakeholders (or shareholders) are unable to verify whether the published information represents the actual economic condition of the firm or not. This may lead to earnings management. As stated by Dechow and Skinner (2000, 1-5.), Schipper (1998, 92) defines earnings management as "… a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain (as opposed to, say, merely facilitating the neutral operation of the process)…". And an extreme form of earnings management, financial fraud, can be

defined as ”the deliberate misinterpretation of the financial condition of an enterprise accomplished through the intentional misstatement or omission of amounts or disclosures in the financial statements to deceive financial statement users.”

Trueman and Titman (1988) and Dye (1988) state that analytical models have identified the necessity of the presence of information symmetry for earnings management to take place. However, this research lacked any empirical evidence, which was then provided by Richardson, showing the positive relationship between measures of information symmetry and earnings management. (Richardson 1998, 1-5.)

Lev (1988) suggested the use of bid-ask spreads to judge the presence of information symmetry among the equity market participants. The bid-ask spread is the difference between the price at which an equity dealer sells an asset and the price at with the dealer buys the asset (Brealy, Myers, and Allen 2011, 48). The validity of this metric was confirmed by Healy, Palepu, and Sweaney (1995) and Welker (1995), who reported the negative relationship between the bid-ask spread and the firm’s disclosure policy. (ibid., 6.)

Another measure of information symmetry was provided by Healy and colleagues as the dispersion among analysts’ forecasts. Brown and Han (1992) proposed that the consensus among analysts over the future performance of a firm increases as the information symmetry decreases, and vice-versa. Since the future performance of a firm is partially estimated by interpreting the published financial reports, it is clear that the ambiguity in the information provided will make way for different future judgements about the firm’s performance. (ibid., 6-7.)

Earnings management can be practiced even within the confines of accounting standards such as the IFRS or the GAAP. This is because the legislation behind these standards asks for the discretion of managers in various circumstances. Therefore, the evidence of earnings management is hard to be proven as conclusive, given that the decision making might be in line with the actual firm circumstances or on the other hand, an attempt to manipulate the information for personal gains. (Dechow and Skinner 2000, 5-6.)

Academics have mostly had the opinion that earnings management is not a major concern to be looked after, because with time, the market realizes the actual value of a security and corrects itself, which is in line with the efficient market theory. However, practitioners tend to disagree with this line of thought. Furthermore, academics believe that if all the necessary reasoning behind the reported figures on the financial statements is provided under the footnotes of the report, it does not count as earnings management, since the user has all the information to make an informed decision. But practitioners and regulators believe that not all information users (market participants/investors) have the required knowledge or material resources to access and understand the detailed information provided separate from the financial statements themselves. (Dechow and Skinner 2000, 8.)

2.4 Accounting standards and quality of financial reporting

According to Healy and Wahlen (1998, 1) accounting standards act as a common accounting language that can be enforced by independent auditors and the Security Exchange Commission (SEC) on publicly listed firms. They provide corporate managers with a relatively low-cost and reliable means of conveying private information on the performance of their respective firms to external financers and other stakeholders. In 2005, the International Accounting Standards Board (IASB) introduced the International Financial Reporting Standards (IFRS). Since then, all publicly listed companies in the European Union are required to follow the IFRS while reporting their financial information. The purpose behind the introduction of IFRS was to ensure that same standards applied to companies all over the world equally. (Ball, 1-2.) However, the IFRS are principles-based, which allows accountants and auditors to follow general guidelines instead of specific rules, leaving them with some discretion to adapt the principles to specific situations. (Soderstrom and Sun 2007, 690.)

Elliot and Elliot (2011) mention that standards are needed because accounting numbers are vital when defining contractual entitlements. For example, the remuneration of directors and managers might be expressed in terms of a salary plus a bonus based on an agreed performance measure such as the net operating profit or the net income of the firm. Mandatory standards are necessary in order to avoid

subjectivity from the reporting of financial information in the form of published statements. Financial reporting then helps enable the best-performing firms in the economy to distinguish themselves from the poor performers and allows for efficient allocation of physical and intangible resources and stewardship decisions by stakeholders.

Barth, Landsman, and Lang (2007) state that accounting standards can increase the quality of reporting by assisting in estimating amounts that better represent the underlying economics of the firm. Healy and Wahlen (1998) explain that if financial reports are supposed to communicate private information on firms reported by the managers, standards should permit managers to exercise some judgement in financial reporting. This helps managers use their knowledge about their respective firm and its opportunities to choose the most appropriate reporting methods and estimates in order to match with the actual economic condition. However, this can lead managers to adopt opportunistic behavior for their personal gains and go down the path of earnings management, which is the phenomenon of managers choosing inappropriate reporting methods and accounting policies to provide inaccurate earnings estimates. For this reason, the SEC has formed an earnings management task force to keep a check on the published financial information and ensure its quality. (ibid., 2.)

Barth and his colleagues mention that sometimes, accounting standards can limit managers from producing financial information that more clearly represents the firm's respective economic condition (Barth et al. 2007, 472). According to Dechow, De, and Schrand (2010, 344), " Higher quality earnings provide more information about the features of a firm's financial performance that are relevant to a specific decision made by a specific decision-maker. " This signifies that the quality of earnings is dependent on the context in hand and the impended use of it. Penman (27) agrees with the above notion and further states that the quality of current earnings is high if it gives an investor a clear idea about the future earnings of the firm. The meaning of earnings quality has over time transformed into "clear and unambiguous". According to Dechow, Ge, and Schrand (2010, 379), the determinants of earnings quality are divided into 6 categories: firm characteristics, auditing committee, corporate governance and control, financial reporting practices, equity

market incentives, and external factors (such as tax regulations and political processes).

3 Empirical Literature Review

3.1 Role and relevance of financial information

According to Elliot and Elliot (2011), ”Accountancy is the art of communicating financial information about a business entity to users such as shareholders and managers. The communication is generally in the form of financial statements that show in money terms the economic resources under the control of the management. ” They mention that the shareholders (external users of information) of a company need information on a regular basis in order to be able to evaluate the efficiency of managers and their use of the available resources. This information is also vital in making forecasts about a firm’s future earnings and liabilities. Managers, on the other hand, require this information to make investment and everyday business related decisions. Since managers are in direct control of a firm, they have access to more specific information than the shareholders themselves. Due to this, there may arise an asymmetry between the information available to managers and the shareholders of a firm. The shareholders may, in some cases, want to have more specific information regarding the figures presented on the financial statements, but do not have the access to get it. Even though the government considers shareholders to be the most important users of financial reports, there are restrictions on the amount of information the directors of a firm are required to present to the shareholders. (30.) Richardson (1998) confirmed this asymmetry in information and went further to show the consequences of this in the form of earnings management (refer to chapter 2.1.3).

Bushman and Smith (2001) define the governance role of financial information as the use of externally reported financial data in control mechanisms that assist in the efficient governance of corporations. According to them, financial information is the result of corporate accounting and external-reporting systems that estimate and release audited accounting data regarding the performance of publicly listed firms.

Financial information from the statements produced by a firm is also used in implementing managerial incentive contracts (e.g. bonuses based on annual profit figures). Bushman and Smith (2001, 1-63.) and Elliot and Elliot (2011) emphasize the use of financial data in identifying investment opportunities by analyzing profit margins created by other firms.

Elliot and Elliot (2011, 138-139) explain the various uses of financial information for specific user groups as follows:

- Investors: to evaluate the operational performance of managers, take management related decisions and to take investment related decisions (buy, hold or sell shares).
- Lenders: to identify the risks associated with giving a loan.
- Suppliers: to make decisions regarding selling to a company or not and to ensure the receipt of payments.
- Employees: to assess the financial condition of the firm and estimate its profitability and to assess the ability of the firm to contribute to pension plans, retirement plans and take care of other employment related matters.
- Customers: to assess the future existence and performance of the firm because of product/service warranty matters.
- Government: to regulate the activities of the firm and to produce national statistics.
- Public: to determine the effect of the firm's activities on the local social and environment community.

According to Graham, Harvey, and Rajgopal (2005, 5), the chief financial officers think that earnings stated in the financial statements are the key metric used by outsiders to assess the performance of a firm. He explains that the two major earnings benchmarks are the previous year's quarterly earnings for the same period, and analysts' consensus estimate. Managers believe that meeting or exceeding the benchmark is really important for the firm to build a good reputation and credibility in the market and to keep the stock price high. This motivates the managers to sacrifice long-term shareholder value for short-time gains. Graham et al. (2005) states that the major consequences of not meeting an earnings benchmark are ”an

increase in the uncertainty about future prospects" and "a perception among outsiders that there are deep, previously unknown problems at the firm." (29).

3.2 Management board and earnings management

When it comes to financial reporting, the management of a firm has some discretion as to what to show in the actual financial statements. Identifying the factors that influence the management's disclosure decisions is a major research problem. (Karamanou and Vafeas 2005, 454.) Williams (1996) documented that the forecasting reputation of the management is established based on the accuracy of prior earnings forecasts, and Tan, Libby, and Hunton (2002) state that the accuracy of earnings forecasts is an indicator of the management's competence. The litigation risk is greater when managers are too optimistic about the future earnings, which motivates them to be conservative in their forecast. Bamber and Cheon (1998) found that because of this reason, managers report bad news relative to analysts' prior expectations. This line of activity provides management with incentives. (Karamanou and Vaefer 2005, 461.) According to Healy and Wahlen (1998), the common use of accounting information by investors and analysts in valuing stocks can provide incentives for managers to manipulate earnings in order to influence the short-term stock performance. Also, compensation contracts in some firms are made on the basis of financial figures from the annual financial statements, which is another motivator for managers to manage earnings in their favor. Another common reason for which managers may manipulate earnings is to run from the industry regulations such as taxation. (10-23.)

Earnings management goes beyond just manipulating the company's published financial reports to managing analysts' earnings forecasts. Firms can cooperate with analysts in order to have them publish more preferable forecasts and also reward them for doing so. Managers publish more precise earnings forecasts in firms that have a greater analyst following. There has been evidence of firm-analyst cooperation in the past, for example, for the bank Credit Suisse in 2000, when the bank rewarded an analyst by paying extra pay for assisting in the achievement of stock and high-yield debt transactions. Michael Jensen argued that stock-based and equity incentives encourage managers to increase short-term stock prices so as to

benefit from eventually selling the shares they own of their own firms' stock. Penman (1982), Sivakumar and Waymire (1994), and Noe (1999) found that managers tend to sell more of their shares after good news (when the firm has beaten or met earnings forecast) that after bad news. Jensen and Murphy (2004) state that top level management has major benefits of meeting the earning targets; according to their research, the stock price rises 5.5% when the analysts' forecast is beaten, decreases by -5.05% when the earnings are in negative, and rises by 1.63% when the actual earnings match the forecast. Interestingly, managers do not only have incentives for reporting overly optimistic earnings figure, but also for presenting low earnings. This is due to the fact that by reporting low earnings in a year with good firm performance, more can be saved up and the firm can then increase earnings in the future as and when required. (Jensen and Murphy 2004, 90-91.; Cheng and Warfield 2005, 1.)

Jensen and Meckling (1976) found out that managerial ownership assists in avoiding information asymmetry and other conflicts between the board of directors and the management. This result was supported by Warfield, Wild, and Wild (1995) when they found the evidence that the reported earnings portrayed a more realistic picture of the firm when insiders had a greater ownership stake in the firm. (Karamanou and Vaefer 2005, 457.) However, managerial ownership can pave the path for managers to keep a check on the short-term stock prices, which may lead to earnings management. Cheng and Warfield (2005) found a significant relationship between equity incentives and the firm having beaten or just met the analysts' forecasts. Furthermore, they reported that managers with high equity incentives are more likely to be involved in earnings management than managers with low equity incentives. (2-4.)

3.3 Corporate governance and earnings management

A firm's board of directors is considered to be the primary controller of the quality of financial reporting. This is because the board has the responsibility to monitor the performance of managers, especially when it comes to financial reporting. M. Lo Bue (2006, 135) mentions that the separation of ownership puts the board of directors of a firm in a central position of the operations involved in corporate governance. While

the management team has direct access to and control over day-to-day decision-making, physical and non-tangible resources, the shareholders are spread out geographically with almost negligible access to the vital information of the day-to-day operations of the firm and its employees. This information gap is to be bridged by the board of directors. According to Karamanou and Vaefer (2005), Fama and Jensen (1983), based on empirical evidence, stated that independent directors (directors not under the influence of the management) help focus on shareholder value instead of managerial opportunism. Furthermore, they say that even those the knowledge base of a board is enhanced with more number of directors, larger boards are usually more inefficient - the effect that is more dominant. Vaefas (1999) also suggests that the number of board meetings is directly related to a firm's monitoring performance. (Karamanou and Vaefer 2005, 456-457.)

Karamanou and Vaefer (2005) found that the precision of a financial forecast is directly linked to the quality of governance, but only when bad news (earnings less than expected) is reported. Managers being guided by effective boards and audit committees, and active shareholders, have greater pressures to provide information of better quality. They explain this by suggesting that better governed firms are more conscious about their obligation to not mislead their shareholders, and this danger of misleading them is greater when the actual performance of the firm is worse than the forecast. In order to avoid this risk, the firm has the tendency to issue more vague forecasts. (ibid., 455.)

Chtorou, Bédard, and Corteau (2001) found that some characteristics of a board of directors have a significant effect on the quality of financial reporting. They report that there is a direct relationship between the board members' experience (within & outside the firm) and the likelihood of high earnings management.

When it comes to the size of the board, there have been different results provided by various researchers. Jensen (1993) states that the larger the board, the less effective it is and the easier it is for the CEO to control. On the other side of the spectrum, Dalton, Daily, Johson and Ellstrand (1999) state that a larger board provides more expertise to the firm. The relationship between the board size and the quality of financial statements is also mixed. Beasley (1996) found that the likelihood of

financial statement fraud is higher with a larger board, whereas Abbott, Parker, and Peters (2000) reported the existence of no relation between the two. (2-11.)

An independent board of directors plays a vital role in maintaining the effectiveness of a firm's corporate governance. This has been emphasized in agency theory, which considers the monitoring and controlling function of the board of directors as the most critical one. Independent directors are generally assumed to be better monitors tan other directors due to their ability to act in the best interests of the corporation itself. Non-executive directors have rewards for maintaining a good reputation as decision controlling and monitoring experts. Beasley (1996) found a negative relationship between the proportion of non-executive members on the board and the probability of fraud. Chtourou and colleagues also found that firms with lowest discretionary accruals had a higher percentage of independent non-executive board directors. Corporate government reports as well as researchers suggest the separation of the roles of chairperson and CEO in order to avoid giving excessive power to the CEO. Dechow, Sloan, and Sweeney (1996) demonstrated that firms whose CEOs were the chairperson of the board were more prone to being subject to law enforcement by the Security & Exchange Commission. (Chtourou et al. 2001, 12-13.)

It is commonly believed that a director who owns a big stake in the firm is more likely to question and challenge management's proposals because of his or her decisions influence their own wealth. However, Gerety and Lehn (1997) reported that accounting fraud has a negative relationship with the stock ownership of the board members and Beasley (1996) showed that there is a negative relationship between financial reporting fraud and non-executive directors' ownership stake in the firm. These evidence also support Jensen's argument that when outside directors own a substantial stake in the firm, it provides them with rewards for monitoring the activity of management more closely. Furthermore, these findings suggest that earnings management is negatively related to the ownership of outside directors in the firm. (ibid., 13-14.)

Many studies support the opinion that the competence of non-executive directors is extremely important for the effectiveness of the board of directors. Weisbach (1988) found that boards consisting mostly of outside directors are more likely to replace

poorly performing CEOs. Also, Rosenstein and Wyatt (1990) found that shareholder wealth is positively related to the increase in the number of outside directors on a board. In order to be a competent monitor of the management's activities, a director should have a good knowledge of the company affairs and the governance process. Research also shows that experience is vital in the development for superior competency. Chtorou and colleagues showed that the firms with lowest discretionary accruals had non-executive directors who had more years of directorship experience. Non-executive board members' experience on the board of the company provides them with monitoring competencies and a better knowledge of the company as well as its executives. Beasley (1996) supported this argument showing that the likelihood of financial reporting fraud is negatively related to the average tenure of non-executive directors. On the other hand, Dechow and Sloan (1991) argued that CEOs adopt opportunistic behavior as they approach the end of their careers. (ibid.; Booth and Deli 1995, 81.)

The "Business Hypothesis" states that firms that have busy board directors represent ineffective corporate governance. The reasoning behind this hypothesis is that board directors who are involved as directors in a large number of firms can become overcommitted and this might hamper their monitoring efficiency. While Fich and Shivdasai (2006) validated this assertion, some other researchers found no evidence of the connection between the number of board directorships a member holds and the performance of the firm. Fich and Shivdasani argue that the research conclusions of Ferris and his colleagues were based on inefficient metrics; where Fich and Shivdasani focused on the average number of board directorships held by outside directors of a firm, Ferris and his colleagues focused on the percentage of outside directors who were busy. Therefore, the results of the research on busyness hypothesis depend on how one defines director busyness. Kaplan and Reishus (1990) showed that the probability of a CEO getting involved in other firms as an outside director is positively related to their firm's performance (Booth and Deli 1995, 82).

Research in this field has provided evidence that there is a positive correlation between the proportion of independent directors who hold three or more board positions and the level of executive compensation, which suggests that busy directors are less likely to be involved in effective managerial monitoring compared

to directors who hold fewer board positions. The reasoning behind this is that in firms with weak corporate governance systems, managers are successful in influencing their compensation committees. However, Andres and Lehmann (2010) argue that merely focusing on the number of board linkages (directorships in other firms held by a board member) is not enough, and that the importance of these linkages is what makes a difference. They found evidence that firms with board members who were central players in large firms displayed weaker corporate governance traits that firms with board members who held a large number of directorship positions in small firms. (Andres and Lehmann 2010, 1-25.)

The number of outside directorships a board member holds is an indicator of his or her monitoring competence. Chtourou and colleagues' findings support this statement. Multiple directorships allow members to develop their governance competencies and results support that additional directorships may be linked to monitoring effectiveness. Several evidences exist for the opinion that non-executive directors of firms alleged by the SEC are more likely to lose their other directorship positions. Chtourou & colleagues state "several authors suggest that the managerial labor market for outside directorships rewards effective outside directors with additional positions as directors, but disciplines outside directors who have a record of poor monitoring performance." On the other side of the equation, Pombo and Gutierrez (2010) documented the positive influence of busy independent directors on a firm's performance (Chakravarty, Marisetty, and Veeraraghavan 2011, 5). (Chtourou et al. 2001, 12-13.)

The New York Stock Exchange made it a legal requirement for publicly listed firms in the US to have an audit committee. An audit committee is a part of the board of directors that consists of representatives of a firm's shareholders who verify the information supplied by managers and ensure its quality. The role of an audit committee is to examine the financial information that is collected, summarized and edited by the management in order to ensure that the information represents the real economic condition of the firm. This representation is also referred to as the "true and fair view". The audit committee, hence, also plays a major role in lowering the transparency barrier and strengthening the corporate governance. It is required for publicly listed firms to have at least one director who has an expertise in financial

reporting. This requirement is fulfilled by the audit committee in some firms. The companies who pass this test are said to have received a clean audit and are rewarded for their quality of earnings by an increase in the stock price or a lower interest rate on debt in the financial market. (M. Lo Blue 2006)

3.4 Measures of earnings management

Although earnings management has been a concern for a long time, very little evidence of the same has been generated by academics, as documented by Healy and Wahlen (1999). This is mainly due to the fact that when academics study earnings management, they tend to analyze a large number of firms and use conventional measures of earnings management, which limit the depth of their research and hence produce marginal results. Also, in order to identify earnings management, it is not enough to produce conclusive results without analyzing the intent of the management. On the other hand, practitioners in the industry have been more successful in providing evidence of earnings management by studying individual firms and their reports, partly because they have different objectives as to what academics have. Dechow and Skinner (2000, 1-2.)

In order to identify if earnings management has taken place, one has to first estimate the earnings before the effect of earnings management took place. One approach to estimate this is to identify managers' incentives to manipulate the reported earnings and match them with the patters of unexpected accruals that are consistent with the incentives. Unexpected accruals are the unexplained portion of the total accruals. (Defond and Subramanyam 1998, 47.)

Another measure of earnings quality was provided by Jones model (2001), which uses a regression model to calculate the non-discretionary component of accruals, which is further deducted from the total accruals to calculate the discretionary accrual amount (Subramanyam 1996, 250-251). However, according to McNichols (2000, 67-68), the amount of discretionary accruals calculated using Jones model (1991) does not represent the purest picture, but also includes a range of non-discretionary components. He suggests the use to specific accrual accounts instead of the aggregate accrual amount in order to assess the quality of earnings.

Dechow, Ge, and Schrand (2010) mention earnings persistence, earnings smoothness, magnitude of total accruals and discretionary accruals, timely loss recognition, benchmark beating, and earnings restatement as examples of earnings quality measurement proxies. Their research showed that firms with high accruals also had higher discretionary accruals, less persistent earnings, more earnings restatements, and poorer internal controls. (345-349.) Barth, Landsman, and Lang (2005, 469) considered that firms that had frequent small positive net income had managed their earnings.

3.5 Consequences of earnings management

According to Bushman and Smith (2001, 64), managers identify potential investment opportunities based on the profit margins provided by other firms. If the quality of information (in particular, earnings) is not high, managers are prone to making bad investment decisions; and in aggregate, this phenomenon acts as a barrier to the flow of human and financial capital towards profitable investment in the economy.

Palmrose and Scholz (2004, 144) state that financial restatements by firms show an acknowledgement that the originally published financial statements were not in accordance with the accounting standards. The SEC used firm financial restatements as justification of earnings management and still describes restatements as the most visible indicator of improper accounting. Palmrose and Scholz (2004) found that major restatements increased the likelihood and severity of a lawsuit against the firm. (144-145.)

According to Dechow, Ge, and Schrand (2010, 387), Francis and Krishnan (1999) state that firms with high accruals are more prone to getting a modified auditor opinion. However, the evidence to support this is not entirely conclusive. Bradshaw, Richardson, and Sloan (2001, 72) showed that auditors did not signal the likelihood of potential accounting standard violations through their opinion. This is mainly due to the fact that even though auditors are aware of the abnormally high accruals and their consequence, they are not required to communicate it to the investors. Dechow and colleagues found that firms that meet or beat analyst forecasts on a regular basis receive a higher market valuation. (391.)

4 Methodology

This chapter of the thesis explains the research methods used in the process of collecting and analyzing the data used by the author in order to answer the pre-determined research questions and the research approach undertaken during the implementation of this paper. According to Saunders, Lewis, and Thornhill (2009, 595), ”methodology” is a theory of how a research should be implemented. It also incorporates the theoretical and philosophical assumptions upon which the research is based. To recap, the objective of this thesis was to assess the quality of financial reporting in Finland, Sweden, and Denmark, taking 62 publicly listed companies as subjects. The underlying metric used to assess the quality of financial reporting was discretionary accruals of the respective firm – lower discretionary accruals indicating higher quality of reporting and vice-versa. The main hypothesis tested in this thesis was whether certain characteristics of a board of directors have an influence on the quality of financial reporting (discretionary accruals) published by the firm.

4.1 Research approach

Saunders et al. (2009) use the famous ”research onion” in order to illustrate the various steps involved in the research process. The research onion, which is divided into various layers, depicts various methods and techniques that a researcher can employ in order to collect and analyze data. The first layer of the research onion represents research philosophy, which dictates the way the researcher views the world and develops knowledge in the respective field. Research philosophy reveals the assumptions one when viewing the world and it also guides the strategy and methods one uses during the implementation of the research. Accordingly, the philosophy of positivism was followed during this specific research since it corresponds to the research objective at hand. Saunders, Lewis and Thornhill (2009) explain that when a researcher adopts the positivism philosophy, they take the stance like of a natural scientist, wherein they analyze the observable social reality and make generalizations that could be replicated in exact circumstances at any given time. This requires the use of highly structured data and analysis. (ibid., 598.) Furthermore, the author worked independent and external of any influence on the

data collected for the analysis and the results of the analysis, which is an assumption underlying the positivism philosophy.

In order to maintain the consistency throughout the research process, it is important to establish the nature of the study. The three kinds of research are quantitative, qualitative, and mixed-method research. Although they involve the use of distinct data collection and analyses methods, they should be thought of as complementary, instead of distinct strategies. (ibid., 151.) According to Creswell (2013, 32), a quantitative research tests objective theories by examining the relationship among various variables, which can be calculated to produce numbered data that are subsequently analyzed using statistical tools. Qualitative research, on the other hand, ”is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem.” A research may also involve the use of both – quantitative as well as qualitative methods to answer the proposed questions. This type of research is known as a mixed-method research. Saunders et al. (2009, 109) states that the use of qualitative and quantitative research methods within one research may be highly appropriate. However, this research was a quantitative research, since the variables involved in answering the research questions were expressed in numerical form and analyzed using statistical procedures.

Saunders et al. (2009, 139) classifies research purposes into three types - explanatory, exploratory, and descriptive. The purpose of the research is linked to the pre-determined research questions; however, the research purpose can evolve over the course of the research. An explanatory research determines the relationship between different variables, whereas an exploratory research looks into the details of a particular problem and evaluating it with a different perspective. A descriptive research is undertaken for the purpose of portraying the accurate profile of a person, situation, or an event. This particular research took the path of an explanatory research due to the particular objective of this study. (ibid., 139-140.) Creswell (2013, 282) recommends the use of explanatory approach when the research is begins with and is driven by quantitative methods.

Creswell (2013, 295) defines research approaches as plans and processes that involve decisions regarding the philosophical assumptions underlying the research, research

design, and the data collection & analysis methods. There are two main research approaches – deductive approach and inductive approach. According to Saunders et al. (2009, 124), a deductive approach involves developing hypotheses or theories and then designing a research strategy to put them to test. An inductive approach, however, involves the collection of data and the development of a theory as a result of data analysis. Throughout this research, a deductive approach was applied. The deduction approach emphasizes the independence of the research from what is being analyzed and its outcomes, which matches with the philosophy of positivism in this aspect.

4.2 Data collection

This research was a cross-sectional research, meaning that the data collected and analyzed to answer the proposed questions belonged to a single year – 2015. Saunders et al. (2009, 155) defines a cross-sectional research as the study for a specific phenomenon (or phenomena) at a specific time. All data that were collected to conduct this research was secondary in nature. Secondary data is data that has already been collected for other purposes by an entity (ibid., 256).

The theoretical part of the literature review was collected using various books, research articles, and reports and papers published by professional organizations. This data were useful in order to explain the major concepts and theories related to financial reporting and earnings quality involved in this research to the reader. Extensive empirical research was done and presented in the empirical literature review in order to give a background on the existing research on the quality of financial reporting and the factors affecting it. The data were collected from research articles and regulatory reports. These articles and reports were found in Internet databases. Only articles that were relevant, relatively new, and cited a fairly large number of times were chosen. Furthermore, there was another type of data collected for answering the research questions – compiled data. Kervin (2009) describes this data as information that has been processed or undergone some selection and summarization process. In context of this research, this data refers to the data collected from the annual reports (and the audited financial statements) of companies. (Appendices 9, 10, 11, 12.) The companies were chosen from the major

indices of Finland **(OMX Helsinki 25)**, Denmark **(OMX Copenhagen 20)**, and Sweden **(OMX Stockholm 30 index)**, which include the major publicly listed companies in the respective companies. The data can be found in the appendix section (appendix 9 and appendix 10) of this paper. All the data were recorded in numerical form so as to facilitate subsequent statistical analysis. The data were considered reliable since it was collected from trusted sources such as the company's website and since all the companies were publicly listed, the financial statements were produced in accordance to the International Financial Reporting Standards. The variables that were collected from the annual reports were as follows:

- **Log of board size:** Board size refers to the total number of members in a company's board of directors. This was recorded in the form of natural logarithm, which is important to avoid the linearity and hence the predictability of the outcomes.
- **Median age of board executives:** First, the age of each of the board members was collected and then the median of the data was calculated.
- **Education background:** This refers to the academic received by the board members. A numeric "1" was assigned to a board member with a relevant bachelor's degree, "2" to a master's degree, and a "3" to a PhD.
- **Firm specific experience:** This refers to the number of years a board member has served as a board member on the same company.
- **Number of other linkages:** This refers to the number of other directorships a board member holds in companies other than the one included in the research.
- **Total assets** (described in chapter 2.1.2)
- **Total liabilities** (described in chapter 2.1.2)
- **Cash** (described in chapter 2.1.2)
- **Gross property, plant, and equipment** (described in chapter 2.1.2)
- **Cash dividends:** A cash dividend is a financial contribution made by a company to its shareholders usually from its current earnings or retained earnings.

- **Net issuance:** Net issuance refers to the difference between the amount of new equity issued by the company and the equity redemptions made by the company.
- **Profit after tax:** This refers to the net amount of profits earned by a company after deducting all the expenses occurred before, during, and after sales and the taxes paid.
- **Log of CEO total remuneration (LN CEO Rem):** This refers to the natural logarithm of the total remuneration paid to the CEO of a firm in 2015. It includes the base salary as well as the performance-based incentives.
- **CEO fixed pay:** This variable represents only the fixed base salary of the CEO in 2015.
- **CEO performance-based pay:** This refers to the incentive portion of the CEO total remuneration in 2015.
- **Median fixed pay executive board:** The variable shows the median of the total remuneration paid to an executive team member of the firm in 2015.
- **Median performance-based pay executive board:** The median of the incentives paid to an executive team member of a firm in 2015 is shown using this variable.
- **Median fixed pay non-executive board:** This variable shows the median of the fixed salary paid to a non-executive member (board director) of a firm in 2015.
- **Median performance-based pay non-executive board:** The variable refers to the median of the incentives paid to a board member of a firm in 2015.

The data concerning the above-mentioned variables can be found in appendix 8 (Variables of corporate governance) and appendix 11 (Remuneration of executive and non-executive team). Also, an abbreviation table is included in appendix 13.

4.3 Data analysis

Data that involves numbers or that can be presented in a numerical form is known as quantitative data. Quantitative data, in its raw form i.e. before it has been processed or analyzed, does not provide much value to most readers. In order to translate this data into meaningful information, it has to be processed using graphs, diagrams, or statistical tools. (Saunders, Lewis, & Thornhill 2009, 414.)

In this research, the analysis was twofold – **1) calculation of discretionary accruals**; **2) Inferential analysis** . Before any analysis was conducted, all the variables required for each analysis were collected and organized using Microsoft Excel. A variable is anything that changes due to certain circumstances. The three stages of analysis are explained below.

1. **Calculation of discretionary accruals**

In this part of the analysis, the raw data were collected from the annual statements of the 62 publicly listed firms from Finland, Sweden, and Denmark. This data were collected in Microsoft Excel program. The variables that were used in their absolute raw form were financial figures needed to calculate the discretionary accruals of the firms in the year 2015. Various formulae needed to be used in order to calculate the variables involved in the accrual estimation process using Jones model (described in chapter 2.1.2). Firstly, Total net accruals are calculated using two methods:

<u>Balance sheet method</u>: Total net accruals = Change in assets – Change in liabilities – Change in cash

<u>Cash flow method</u>: Total net accruals = Profit after tax – cash earnings

Jones model requires the use of the following equation to calculate the discretionary accruals:

$$TA_{it}/A_{it-1} = \beta_0 (1/A_{it-1}) + \beta_1 (\Delta REV_{it}/A_{it-1}) + \beta_2 (PPE_{it}/A_{it-1}) + \varepsilon_{it}$$

After the required variables (explained in chapter 2.1.2) were calculated, a regression was run using the SPSS software (a statistical tool) with the above equation to estimate the beta coefficients. According to Field (2009, 7), most hypotheses can be explained using two variables – a proposed cause (independent variable) and a proposed outcome (dependent variable). In this regression, TA_{it}/A_{it-1} was taken as the dependent variable, and $1/A_{it-1}$, $\Delta REV_{it}/A_{it-1}$, and PPE_{it}/A_{it-1} were taken as the

independent variables. After the estimated values for the beta coefficients had been calculated, they were put into the following formula to calculate the non-discretionary accruals:

NDA (Non-discretionary accruals) / A_{it-1} = $\beta_0(1/A_{it-1}) + \beta_1(\Delta REV) + \beta_2(PPE / A_{it-1})$

To calculate discretionary accruals (amount shown in appendix 12), non-discretionary accruals were deducted from the previously estimated Total net accruals. The discretionary accrual amounts were also subsequently organized in the excel sheet containing other variables.

2. Inferential analysis

Creswell (2013, 197) describes inferential analysis as analysis that related variables in order to derive inferences from the sample to a population. Regression analysis was performed taking the discretionary accrual amounts of the chosen firms as dependent variable. The independent variables in this research included the following:

- Natural log of board size
- Median age of board directors
- Educational background of board directors
- Firm-specific experience of board directors
- Number of other directorships held by the board directors
- Remuneration structure of executive team members
- Remuneration structure of board members

In this research, a bivariate correlational analysis was also performed using the SPSS software in order to determine the relationships among the variables. This was done by importing the collected data regarding the variables from excel into the SPSS program and selecting ”Bivariate analysis” as the analysis type. (ibid., 175.) The outcome of the correlational analysis provides data regarding the Pearson’s correlation coefficient and the significance of the relationships between the independent variables and the dependent variable. The value of this coefficient ranges from -1 to 1, wherein a positive number indicates a relationship that involves the changes in both the variables in the same direction, and a negative number indicates a relationship that involves a change in one variable leading to an opposite

change in the other variable; the closer the coefficient to 1 (in positive correlation) or -1 (in negative correlation), the stronger the relationship, and the closer the coefficient to 0, the weaker the relationship. The outcome of the analysis also displays the R^2 value, which measures the proportion of variation in the dependent variable due to the changes in independent variables, and ranges from 0 to 1 - greater value indicating greater proportion of covariance (Saunders et al. 2009, 461). (228.) In addition of these outputs, the significance of the relationships is also provided in the data table by SPSS. A ”sig.” value shows the probability that the relationship between the independent variable and the dependent variable has occurred by chance. (ibid., 463.)

Apart from analyzing the correlations, there were other techniques used to process the data in order to get meaningful information. While performing the bivariate analysis, the SPSS software gives the option to choose ”descriptive statistics” and ”Durbin-Watson”, which were chosen for this research. Descriptive statistics refers to the means and standard deviations of the variables involved in the analysis. These data were displayed in the form of a table. Durbin-Watson, on the other hand, shows the estimate of independent errors of the researcher. If the estimate of the Durbin-Watson test deviates significantly from 2, it indicates low reliability of the analysis results.

The analysis performed in this research using the SPSS software provides various outputs, such as, the model summary, regression coefficients, correlation coefficients, means and standard deviations, R^2 (R-square), significance, Durbin-Watson, and the t-value. However, only a few of the outputs will be critically analyzed in detail for this particular study.

4.4 Reliability and validity

Saunders, Lewis, and Thornhill (2009, 156) define reliability as the extent to which a researcher’s data collection methods or analysis techniques will produce consistent results for a similar data set. This can be evaluated by considering the whether similar measures will lead to similar results, whether similar observations will be made by other observers, and whether there is transparency in how raw data were

used in the research. The reliability of a research can be hampered by four different types of threats – subject threat (errors in conducting research, wrong timing for data collection, inaccurate data sources, etc.), subject bias (e.g. inaccurate information given by interviewees), observer error (e.g. errors in approaching a research question), and observer bias (e.g. errors in interpreting the collected or analyzed data). Concerning this particular research, the findings are reliable due to the fact that the methods chosen to approach the research objective at hand have been used by a number of significant researchers in a similar way. Another point to be noted is that the variables involved in this research were used in a way that the analyses technique can be replicated for other samples and will produce similar results. The data used in the analysis were collected from reliable sources, such as the official websites of the chosen companies. Some data had to be scaled by a common measure in order to account for size effect and other phenomenon that might have hampered the findings otherwise. Furthermore, the data collection methods and the analysis technique used in this research were explained in fair detail in order to make it easily understandable for any reader, regardless of his/her background.

Validity refers to the accuracy of the findings and whether the findings represent what they were intended to. Saunders and colleagues classify validity into two major types – external validity and internal validity. External validity is majorly concerned about the degree to which the findings of the research can be generalized to a bigger population. To maintain external validity in this research, an efficient sampling approach was applied when choosing the companies used in the analysis. A total of 62 companies were chosen from the biggest national indices of Finland, Sweden, and Denmark. These companies represent a major population and are from a variety of different industries, which avoided the generalization of the results to be limited to a certain type of companies. Internal validity, on the other hand, can be further divided into two kinds – content validity and construct validity. Content validity is concerned about the match between the initial research objectives and the outcomes. It ensures that the results represent what they were intended to, in the first place. Threats to construct validity occur when researchers use inefficient measures of the variables involved in the research. In order to ensure the internal validity of the research results, the regression analysis was performed using variables that

controlled for other factors that might influence the results. Furthermore, the data collected from the published reports and audited financial statements of the chosen companies should be considered valued owing to the fact that the rules and policies related to corporate governance are similar in Finland, Sweden and Denmark, and these can be found in appendix 7. Also, the factors of corporate governance that were hypothesized to influence the amount of discretionary accruals of the firms produced findings that were in line with the types of results expected. Hence, the results of this thesis should be considered valid.

5 Results

This chapter states the outcomes of the analysis performed to assess the quality of financial reporting in Nordic countries, taking 62 publicly listed companies from Finland, Denmark, and Norway as case studies. The results are divided into two sections – descriptive statistics and correlations.

5.1 Descriptive statistics

The variables analyzed to produce descriptive statistics (Appendix 1) for the research were: Discretionary accruals calculated using Balance Sheet method (DABalSheet), Discretionary accruals calculated to Cash Flow method (DACashFlow), Natural Log of board size (BoardSizeLN), Median age of board of directors (BODAge), Educational background of board directors (Education), Firm-specific experience of board directors (Experience), Number of other directorships/linkages (DirectorLinks), Natural Log of the total remuneration of the CEO (CEORemunLN), Ratio of performance pay to fixed pay of the CEO (CEOPerfFix), Ratio of the median performance pay to median fixed pay of executive team members (ExecPerFix), Ratio of the median performance pay to median fixed pay of board directors (NedPerFix), Natural Log of total assets of the firm (AssetsLN).

The mean of the log of board size was 2,172 with a standard deviation of 0,282. The board size i.e. the number of board members in a firm, was taken as a natural log of the actual number of the board members in order to account for the size effect. The mean of the median age of the board members in companies was found out to be

57,7 years, the standard deviation measuring 3,34 years. The mean of the median number of years of higher education received by the board members of the companies was 1,75 years with individual values barely deviating from the mean. The mean number of years a board member had been on the board of the same company was 4,3 years, and the standard deviation was estimated to be approx. 2,7 years. The mean number of outside board memberships a board member held was 3 and the individual values deviated approx. 1 point.

The mean of the log median total remuneration of the CEOs was 14,4 with the standard deviation being approx. 0,7, whereas the mean for the ratio of performance pay to fixed pay was 1,135 with the standard deviation of approx. 1,2. The mean of the log ratio of performance pay to fixed pay of an executive was 0,887, whereas for a non-executive director, it was 0,477. The mean of the log of total assets owned by a firm was 8,94 and the standard deviation for the same was 1,60.

The standard deviation of the discretionary accrual (Balance Sheet method) amounts was relatively large. This shows that the discretionary accruals of firms were significant different from one another even after appropriate standardization and scaling of variables involved in the calculation. However, this can also be due to the fact that the companies involved in the analysis belonged to several industries and different industries require different accounting measures.

On the other hand, the standard deviation calculated using the total net accruals estimated by the cash flow method was 0,107, which was lesser than the standard deviation calculated using the balance sheet method. However, it is worth noting that the mean of discretionary accruals calculated in this case was in negative, as opposed to the discretionary amount calculated using the balance sheet method.

5.2 Inferential analysis results

The correlational analysis resulted in a matrix of correlational coefficients for the relationships between all the variables involved in the research. The regression analysis, on the other hand, examined the causal relationship between the independent variables and the dependent variable. For this research, the regression was done twice – first with discretionary accruals calculated using balance sheet

method as the dependent variable, and second with discretionary accruals calculated using cash flow method. For both the cases, the results of the regression analysis done using SPSS provided information in the form of a model summary displaying the Pearson correlation coefficient, R^2 and the adjusted R^2, and a matrix showing the standardized regression coefficients, unstandardized regression (b) coefficients and their significance. Standardized coefficient shows the strength of the effect that a change in an independent variable causes in the dependent variable, whereas the unstandardized regression coefficient indicates the average change in the dependent variable when a change of 1 unit occurs in a particular independent variable. Unstandardized regression coefficients were the main focus on this particular research.

Correlational analysis

The results of the correlational analysis (appendix 6) indicated a highly significant positive correlation (r=,367**) between the discretionary accruals (balance sheet method) of a firm and the number of years a current board member of the firm has served on the board. The correlation between the discretionary accruals calculated taking the total net accruals from the cash flow method and the experience of a board member in the firm was also found to be significant (r=,299*), supporting the finding that the more experience a board member has in the firm, the lower is the quality of financial reporting of the firm. The ratio of the performance pay to the fixed pay of an executive team member also showed a highly significant positive correlation (r=,590**) with the discretionary accruals (balance sheet method) of the firm.

Other factors that showed a significant correlation with discretionary accruals were the number of other directorship positions held by a board member in other firms, the logarithm of the total remuneration of the CEO, and the ratio of performance pay to fixed pay of the CEO. This precise strength of the correlations and their significance can be seen from the correlation matrix presented in appendix 6.

Regression analysis - Balance sheet method of accruals

The model summary of the analysis provided 2 different models and the respective correlation coefficients and the beta coefficients. In order to answer the research

questions of this study, model 2 (Appendix 2) was considered more appropriate to be examined. According to this model, there was a strong positive relationship between the independent variables ExecPerFix and Experience, and the dependent variable DABalSheet, owing to the 0,667 R (correlation coefficient) value. The value of R can range from -1 to +1 - +1 indicating a perfect positive relationship, 0 no relationship, and -1 a perfect negative relationship. Furthermore, the adjusted R square value of this coefficient was 0,426, meaning that 42,6% of the variation in the dependent variable i.e. the discretionary accruals of the listed firms, is a result of the change in the independent variables – ratio of the performance pay to fixed pay of the executive team members, and the firm-specific experience of the board members. It should be noted that the Durbin-Watson for this analysis was estimated as 2,076, which makes the results of this research valid.

Examining the unstandardized beta coefficient matrix (Appendix 3), it is visible that there is a causal relationship between the above-mentioned independent variables and the dependent variable. This is so due to the positive values indicated by the beta coefficients. This result is significant due to the 0,000 sig. Value for the independent variable ExecPerFix and the 0,002 sig. Value for the independent variable Experience. Saunders et al. (2009), the statistics result is highly significant if the sig. Value is 0.01. In other words, for this research, we can conclude that one can say with approx. 100% confidence that there is a causal relationship between the two independent variables and the dependent variable (when calculated using the balance sheet method). It is also noteworthy that there was found to be a negative causal relationship (b=0,15) between the education background of a board member and the discretionary accrual amount of the firm (Appendix 3).

Regression analysis - Cash flow method of accruals

The results of the regression analysis performed using the total net accruals calculated using cash flow method also provided 2 models, each representing different values for relationship indicators. As in the balance sheet method, model 2 (Appendix 4) was chosen to be more appropriate for this analysis as well. According to this model, the relationship between the independent variables ExecPerFix and Experience, and the dependent variable (DACashFlow) was positively strong with a correlation coefficient (R) value of 0,391. The adjusted R square value for this

coefficient was 0,124, indicating that 12,4% of the variation in the discretionary accruals (calculated using cash flow method) can be explained by the variation in the two independent variables. The Durbin-Watson for this coefficient was 2,079, which shows that the results are valid.

The regression coefficient matrix (Appendix 5) provided a set of different values for the unstandardized regression coefficients. The beta value for ExecPerFix was -0,27, which represents a negative causal relationship between the ratio of performance to fixed pay of the executive team members, and the discretionary accruals of the company. The sig. Value for this coefficient was 0,039, which makes this value significant. On the other hand, the beta value for the variable Experience was found out to be 0,013, indicating a positive causal relationship between the firm-specific experience of a board member and the discretionary accruals of the company. This was accompanied by a sig. Value of 0,009, making this result highly significant. Apart from the above two significant independent variables, the variable DirectorLinks showed a positive causal relationship (b=0,23) with the discretionary accrual amount, showing that higher the number of outside directorships held by a board member, higher the amount of discretionary accruals of the firm (Appendix 5).

6 Discussion

This chapter aims to explain the results of the analysis performed in order to answer the research questions and compare the results of this study to existing literature on the issue at hand i.e. the quality of financial reporting. The chapter also explains the practical implications of this research along with its limitations. At the end of the chapter, some recommendations have been provided for future research in the area.

6.1 Summary of the key findings

The main objective of this research was to determine the characteristics of corporate governance that have the strongest influence on the quality of financial reporting of the firm. This was done by relating the discretionary accruals of the firm to the components of corporate governance such as the size of the board, the age of board members, the experience of board members on the respective firms, the number of

outside directorships held by the board members, and the remuneration of the board members and the executive team members. It is important to note that an assumption of this research is that a high discretionary accrual amount represents the possibility of earnings management being committed.

To answer our research question stated as **" How is the quality of accounting information measured?"**, research by Dechow, Ge, and Schrand (2010) proposed that the determinants of earnings quality include firm characteristics, auditing committee, corporate governance and control, financial reporting practices, equity market incentives, and external factors (such as tax regulations and political processes). Furthermore previous research has provided various means of measuring the incidence of earnings management in a firm. Dechow and colleagues showed that earnings persistence, earnings smoothness, magnitude of total accruals and discretionary accruals, timely loss recognition, benchmark beating, and earnings restatement are examples of earnings quality measurement proxies. Their research showed that firms with high accruals also had higher discretionary accruals, less persistent earnings, more earnings restatements, and poorer internal controls. (345-349.) Therefore, analyzing the results of this study and comparing them with the existing literature on the subject, it can be proposed that characteristics of corporate governance and control, equity incentives, and discretionary accruals are one of the most accurate means of detecting earnings management in a firm.

The regression analysis presented significant results regarding the causal relationships between specific independent variables and the dependent variable. There was found to be a strong causal relationship between the independent variables ratio of performance pay to fixed pay of executive team members and the firm-specific experience of the board members, and the dependent variable discretional accruals.

The results indicate that the higher the performance pay of the executive members compared to their fixed pay, the higher the discretionary accrual amount of the firm. This subsequently increases the probability that earnings have been manipulated. According to Cheng and Warfied (2005), discretionary accruals can be used to overstate the earnings in order to beat or meet an earnings forecast, for which mangers have high equity incentives. This matches with our finding that the

performance pay of managers is higher when the discretionary accruals are higher. Bergstresser and Philippon (2006, 528) reported that companies with CEOs who have high equity incentives often face earnings management. The motivation for executives to manipulate the earnings is higher when the incentives for beating or meeting an earnings forecast are high, since it leads to personal gains. There has been documented evidence that managers often trade long-term losses with short-term personal gains. However, Lacker, Richardson, and Tuna (2007) found no relation between equity incentives of executive team members of companies and earnings management in the company. This shows that there still exist gaps in this research area.

Another variable that was found to have a strong influence on the amount of discretionary accruals of a firm was the firm-specific experience of the board members i.e. the number of years a board member has been on the board of the particular firm. This is consistent with the research performed by Chtorou, Bédard, and Corteau (2001), which showed that there exists a direct relationship between the experience of a board member on the respective board and the likelihood of earnings management. This could owe to the fact that the more a board member knows about the firm's operations and the accounting procedures, the easier it is for them to find loop-holes in the accounting policies and hence allow them to misuse the discretion they have while preparing the financial statements. This subsequently lowers the quality of financial reporting done by a firm.

Apart from the ratio of performance pay to fixed pay of executive members and the firm-specific experience of board members, there were two more factors of corporate governance that were found to be related to the amount of discretionary accruals a firm has. One of these was the education background of the board members. As mentioned in the previous section, education background of the board members showed a negative relationship with discretionary accruals, meaning that the more educated a board members, the lower the discretionary accruals of the firm and hence better quality of financial reporting. Since it has been shown that managers and board members may sacrifice long-term benefits of producing accounting information of high quality for short-term financial gains, it is possible that they are not fully aware of these benefits and the consequences of

misreporting. If a board member has relevant education in the field and has a grasp on the field of finance, they will keep more caution on the financial information being reported to the stakeholders. Chiang and He (2010, 12) find a similar relation between the education board members have received and the transparency of the firm concerning its financial statements.

The second characteristic that was found to be related to discretionary accrual amount of a firm is the number of outside directorships held by the board members. The analysis displayed a positive relation between the two variables, meaning that if the board members have less number of board positions in other firms, the discretionary accrual amount of the firm is lower. This result can be studied under the busyness hypothesis explained in the "Theoretical Background" section of this study. Similar result has also been shown by previous research. For example, Fich and Shivdasai (2006) validated this proposition when they found a negative relationship between the busyness of board directors and their monitoring efficiency. However, Ferris, Jagannathan, and Pritchard (2003, 1109) found no relationship between the two variables. Research indicates that the results of the busyness hypothesis analysis depend on the approach researchers have taken in order to define "busyness".

While Beasley (1996) found that the likelihood of financial statement fraud is higher with a larger board, Abbott, Parker, and Peters (2000) reported the existence of no relation between the two. (2-11.) The results of this research were consistent with the latter, since there was found to be no significant relationship between the number of board directors a firm has and its discretionary accrual amount.

Gerety and Lehn (1997) reported that accounting fraud has a negative relationship with the stock ownership (and hence the performance pay) of the board members. However, the results of this research showed no such relationship between the two.

Hence, to answer the first research question of this particular study i.e. **" Which factors of corporate governance and the characteristics of board of directors influence the quality of accounting information provided by the firm to its stakeholders? "**, the results of the research showed that the ratio of performance pay to fixed pay of the executive team members and the firm-specific experience of

the board members have a strong negative causal relationship with the quality of accounting information published by the firm. There was also found to be a negative causal relationship between the number of other directorships held by a board member and the probability of the firm being involved in earnings management. Furthermore, a positive causal relationship was indicated by the research between the education background of the board members and the quality of financial reporting of the firm. Hence, looking at the results of the research, the hypothesis made in the beginning of this paper that certain factors of corporate governance influence the amount of discretionary accruals of a firm, can be accepted.

Answering the third and last research question i.e. ”**What are the imperatives of enhancing the quality of accounting information?**”, the secondary literature research and the analysis performed for this study provided various imperatives (or factors that influence) of enhancing the quality of information provided by firms to their stakeholders. The most important factor to look at when examining the quality of financial information is the use of accruals in the financial statements. In particular, it is necessary to determine how the discretion is used while reporting the figures provided in the statements. Research has shown that discretion allowed to managers while making financial statements can be used efficiently or for misstating the numbers in order to make short-term gains. Other factors that are vital in enhancing the quality of published financial information are related to the qualities of board members of a firm and the remuneration structure of executives. According to the results of this research, board members who have more experience of working at the firm as directors are more efficient at producing transparent information for the stakeholders. Also, firms should be careful when appointing board members with a lot of other board positions, since it can take more of their time from carefully monitoring the efficiency of the top management team of the firm. Furthermore, when appointing a board director, the education background of the person must be taken into account. Another way to enhance the transparency of the firm is to continually educate the board members on how to govern a company successfully. The last imperative, according to this study, of enhance the quality of accounting information supplied by a firm is to maintain a healthy ratio of performance pay to the fixed pay of executive team members. Results show that a higher performance to

fixed pay ratio may motivate employees to engage in the unethical act of manipulating earnings in order to make personal gains. Hence, top management should be rewarded in more fruitful ways than a high proportion of performance related remuneration.

6.2 Practical implications

Quality of financial reporting and earnings management, in general, has been one of the major research topics in the last few decades. There have been mixed results on the evidence of factors that influence the quality of financial reporting of a company. This particular research contributed to the extensive literature that already exists on the subject, however, the results are particularly important concerning the Nordic countries, namely – Finland, Denmark, and Sweden.

The results of this research could be of interest to regulatory organizations, such as the Security and Exchange Commission (SEC), due to the fact that the SEC formulates various policies related to financial disclosures made by publicly listed firms. The objective of the SEC is to protect investors and maintain fairness in the financial markets. The SEC has the authority to judge the quality of financial information supplied by publicly listed firms and hence, by providing significant findings on what influences the quality of financial reporting, this research provides the SEC with relevant and useful data.

This research provides findings that may be useful to the auditors in Finland, Sweden, and Denmark. Since there are significant relationships found between various factors of corporate governance and characteristics of board of directors, the auditors can evaluate the financial information provided by the firms more thoroughly.

Furthermore, these results of this thesis are particularly useful for corporations. The findings provide concrete factors to consider when the quality of financial reporting is in question. Firms can make decisions regarding the choice of board directors and the compensation paid to the executive team members based on the results of this research and previous research on the topic.

Lastly, the findings of this research may be of interest to researchers in the field of finance and business in general. Since the findings on the issues presented in this

research vary depending on the researcher and the firm sample, any additional research findings are of importance to reach more accurate predictions on the influencers of quality of financial reporting.

6.3 Limitations of the research

There are various limitations of this research, mainly due to the lack of time, money, and other resources. Firstly, the power of Jones model, which uses discretionary accrual amount as a proxy to detect the quality of financial reporting and earnings management has been a topic of research in itself. Jones model makes the assumption that there has been no manipulation in the revenue reporting, which can be potentially argued against. Secondly, according to Dechow et al. (2010, 358), the explanatory power of the model is very low, explaining only about 10% of variation in the total accrual amount of a firm, which could be due to the fact that managers have high amount of flexibility and discretion in the accrual estimation process, which they can misuse to mask the actual performance of the firm itself.

Secondly, the sample taken for this research represents a very small proportion of the actual total population, and may not be big enough to show completely accurate results, which can be generalized.

Thirdly, the data gathered for the analysis required researcher's discretion during the data analysis process. Hence, some assumptions had to be made at the initial stages of the research that may or may not have affected the findings.

However, regardless of the above mentioned limitations, the research provided statistically significant results that can be tested for a similar sample and verified using other methods, keeping the basic assumptions constant.

6.4 Recommendations for future research

The limitations of the research lay the path for an improved research on the subject. Firstly, as mentioned earlier, the Jones model for calculating discretionary accruals incorporates a few assumptions that can be argued against. This can be improved

upon by using the modified Jones model instead, which corrects the assumptions made in the Jones model.

Secondly, this research used inferential analysis as the main technique in order to answer the pre-determined research questions. The use of other techniques could enhance the understanding of the subject at hand. Thirdly, the usefulness of future research on the topic could be increased by including how the manipulation of financial information can be prevented. Furthermore, a similar research could be done on companies of a smaller scale. These factors could improve upon the understanding of the topic.

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Appendices

Appendix 1. Descriptive statistics

Descriptive Statistics

	Mean	Std. Deviation	N
DABalSheet	,000000394	,2091153359	62
DACashFlow	-,000000664	,1071025693	62
BoardSizeLN	2,172882869	,2824741316	62
BODAge	57,701612903	3,3491614774	62
Education	1,758064516	,4853757669	62
Experience	4,322580645	2,6797613886	62
DirectorLinks	3,241935484	1,2827414785	62
CEORemunLN	14,381860837	,6991764181	62
CEOPerfFix	1,135011164	1,1910724003	62
ExecPerFix	,887836837	,9989072496	62
NedPerFix	,477265174	1,7843682092	62
AssetsLN	8,944138371	1,6059129611	62

Appendix 2. Model summary (Balance sheet method)

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
2	,667[b]	,445	,426	,1583989462	2,076

a. Predictors: (Constant), ExecPerFix

b. Predictors: (Constant), ExecPerFix, Experience

c. Dependent Variable: DABalSheet

Appendix 3. Regression coefficients (Balance sheet method)

Model 2	Unstandardized Coefficients		t	Sig.	Collinearity Statistics	
	B	Std. Error			Tolerance	VIF
(Constant)	-,210	,041	-5,090	,000		
ExecPerFix	,117***	,020	5,743	,000	,991	1,009
Experience	,024***	,008	3,218	,002	,991	1,009
Education	-,149 Ψ		-1,495	,100	,929	1,076

***. Correlation is significant at the 0.001 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Ψ. Correlation is significant at the 0.10 level (2-tailed).

Appendix 4. Model summary (Cash flow method)

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
2	,391[b]	,153	,124	,1002148840	2,079

a. Predictors: (Constant), Experience

b. Predictors: (Constant), Experience, ExecPerFix

c. Dependent Variable: DACashFlow

Appendix 5. Regression coefficients (Cash flow method)

Model 2	Unstandardized Coefficients		t	Sig.	Collinearity Statistics	
	B	Std. Error			Tolerance	VIF
(Constant)	-,032	,026	-1,218	,228		
Experience	,013**	,005	2,688	,009	,991	1,009
ExecPerFix	-,027*	,013	-2,106	,039	,991	1,009
Director Links	,229*		1,909	,05	,958	1,044

***. Correlation is significant at the 0.001 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Ψ. Correlation is significant at the 0.10 level (2-tailed).

Appendix 6. Correlational analysis results

The results of the correlational analysis have been divided into 4 parts due to the size of the correlation matrix.

Part 1.

		DABalSheet	DACashFlow	BoardSizeLN	BODAge	Education	Experience
DABalSheet	Pearson Correlation	1	-,172	,015	,136	-,195	,367**
	Sig. (2-tailed)		,180	,907	,293	,128	,003
	N	62	62	62	62	62	62
DACashFlow	Pearson Correlation	-,172	1	,090	,035	,045	,299*
	Sig. (2-tailed)	,180		,485	,788	,726	,018
	N	62	62	62	62	62	62
BoardSizeNL	Pearson Correlation	,015	,090	1	-,311*	-,205	,008
	Sig. (2-tailed)	,907	,485		,014	,111	,949
	N	62	62	62	62	62	62
BODAge	Pearson Correlation	,136	,035	-,311*	1	,071	,320*
	Sig. (2-tailed)	,293	,788	,014		,584	,011
	N	62	62	62	62	62	62
Education	Pearson Correlation	-,195	,045	-,205	,071	1	-,257*
	Sig. (2-tailed)	,128	,726	,111	,584		,044
	N	62	62	62	62	62	62
Experience	Pearson Correlation	,367**	,299*	,008	,320*	-,257*	1

	Sig. (2-tailed)	**,003**	**,018**	,949	,011	,044	
	N	62	62	62	62	62	62

Part 2.

		DirectorLinks	CEO-RemunNL	CEOPerf-Fix	ExecPer-Fix	Ned-PerFix
DABalSheet	Pearson Correlation	,053	,324*	,418**	,590**	,050
	Sig. (2-tailed)	,682	,010	,001	,000	,697
	N	62	62	62	62	62
DACashFlow	Pearson Correlation	,291*	-,027	-,171	-,223	,140
	Sig. (2-tailed)	,022	,836	,185	,082	,276
	N	62	62	62	62	62
BoardSizeNL	Pearson Correlation	-,202	,244	,082	,062	,063
	Sig. (2-tailed)	,115	,056	,528	,632	,629
	N	62	62	62	62	62
BODAge	Pearson Correlation	,132	-,077	-,002	-,060	,033
	Sig. (2-tailed)	,308	,553	,987	,642	,801
	N	62	62	62	62	62
Education	Pearson Correlation	-,043	,131	,111	,042	,032
	Sig. (2-tailed)	,742	,309	,388	,743	,805
	N	62	62	62	62	62
Experience	Pearson Correlation	,199	,142	,091	,096	,064
	Sig. (2-tailed)	,122	,270	,483	,459	,622
	N	62	62	62	62	62

Part 3.

		DABal Sheet	DACashF low	Board SizeLN	BO-DAge	Edu-cation	Expe-rience
Direc-torLin ks	Pearson Correla-tion	,053	,291*	-,202	,132	-,043	,199
	Sig. (2-tailed)	,682	**,022**	,115	,308	,742	,122
	N	62	62	62	62	62	62
CEO-Re-munN L	Pearson Correla-tion	,324*	-,027	,244	-,077	,131	,142
	Sig. (2-tailed)	**,010**	,836	,056	,553	,309	,270
	N	62	62	62	62	62	62
CEOPe rfFix	Pearson Correla-tion	,418**	-,171	,082	-,002	,111	,091
	Sig. (2-tailed)	**,001**	,185	,528	,987	,388	,483
	N	62	62	62	62	62	62
Exe-cPer-Fix	Pearson Correla-tion	**,590****	-,223	,062	-,060	,042	,096
	Sig. (2-tailed)	**,000**	,082	,632	,642	,743	,459
	N	62	62	62	62	62	62
Ned-PerFix	Pearson Correla-tion	,050	,140	,063	,033	,032	,064
	Sig. (2-tailed)	,697	,276	,629	,801	,805	,622
	N	62	62	62	62	62	62

Part 4.

		Director-Links	CEORe-munNL	CEOPerf-Fix	ExecPer-Fix	NedPer-Fix
DirectorLinks	Pearson Correlation	1	,091	-,044	-,031	,100
	Sig. (2-tailed)		,482	,736	,808	,442
	N	62	62	62	62	62
CEORemunNL	Pearson Correlation	,091	1	,612**	,566**	,189
	Sig. (2-tailed)	,482		,000	,000	,140
	N	62	62	62	62	62
CEOPerfFix	Pearson Correlation	-,044	,612**	1	,815**	,434**
	Sig. (2-tailed)	,736	,000		,000	,000
	N	62	62	62	62	62
ExecPerFix	Pearson Correlation	-,031	,566**	,815**	1	,156
	Sig. (2-tailed)	,808	,000	,000		,227
	N	62	62	62	62	62
NedPerFix	Pearson Correlation	,100	,189	,434**	,156	1
	Sig. (2-tailed)	,442	,140	,000	,227	
	N	62	62	62	62	62

Appendix 7. Governance code in Finland, Sweden, and Denmark

	GOVERNANCE CODE		
	FINLAND	**SWEDEN**	**DENMARK**
Composition	The composition of the company's board of directors shall reflect the requirements set by the company's operations and development stage. A person elected as a director must have the competence required by the position and the possibility to de- vote a sufficient amount of time to attending to the duties. The number of directors and the composition of the board of directors shall be such that they enable the board of directors to see to its duties efficiently. Both genders shall be represented in the board of directors.	The board is to have a composition appropriate to the company's operations, phase of development and other relevant circumstances. The board members elected by the shareholders' meeting are collectively to exhibit diversity and breadth of qualifications, experience and background. The company is to strive for gender balance on the board.	The supreme governing body should regularly assess whether its composition and the skills of its members, individually and collectively, reflect the demands posed by the company's situation and circumstances. Diversity may improve the quality of the work performed by the supreme governing body.
Board of directors & Supervisory board	Board of directors to be elected despite of having a supervisory board.	No rule concerning a supervisory board.	The supreme governing body may be the board of directors or the supervisory board
Independence	The board of directors shall evaluate the independence of the directors. The majority of the directors shall be independent of the company. At least two directors who are independent of the company shall also be independent of the significant shareholders of the company.	The majority of the directors elected by the shareholders' meeting are to be independent of the company and its executive management. No more than one elected member of the board may be a member of the executive man- agement of the company or a subsidiary. At least two of the members of the board who are independent of the company and its executive management are also to be independent in relation to the company's major shareholders.	The Committee recommends that at least half of the members elected by the general meeting be independent persons. Independence means that the person in question does not have close ties to or represents the executive board, the chairman of the supreme governing body, controlling shareholders or the company.
Diversity	The company shall establish the principles on diversity for its own purposes, taking into account the scale of its business operations and the requirements of its development stage. Factors to be taken into account when establishing the principles on diversity may include, for example, age and gender as well as occupational, educational, and international background.	No rule concerning the diversity of the board of directors.	The supreme governing body must take into consideration the need for integration of new talent and the need for diversity in relation to international experience, gender and age, etc.
Tasks & responsibilities	The most essential tasks of the board of directors include appointing and discharging the managing director, deciding on the terms of the managing director's service contract, such as the remuneration, as well as defining the company's strategy and monitoring its implementation. Furthermore, the most important business decisions, such as mergers and acquisitions, major contracts, investments, and financing arrangements fall under the general competence of the board of directors.	Establishing the overall goals and strategy of the company, appointing,evaluating and ,if necessary,dismissing the chief executive officer, defining appropriate guidelines to govern the company's conduct in society, with the aim of ensuring its long-term value creation capability,ensuring that there is an appropriate system for follow-up and control of the company's operations and the risks to the company that are associated with its operations, ensuring that there is a satisfactory process for monitoring the company's compliance with laws and other regulations relevant to the company's operations, as well as the application of internal guidelines, and ensuring that the company's external communications are characterised by openness, and that they are accurate, reliable and relevant. The board is to approve any significant assignments the chief executive officer has outside the company.	Safeguarding the interests of the shareholders with care and due consideration of the other stakeholders, appointing a qualified executive board, establishing its tasks, conditions of employment and distribution of work and preparing guidelines for accountability, planning, follow-up and risk management, supervising the executive board and preparing guidelines for how to exercise this supervision, ensuring the professional development and retention or dismissal of the members of the executive board as well as ensuring that the remuneration of the members of the executive board reflects the long-term value creation in the company as well as the independent performance of the members of the executive board, ensuring that the necessary financial resources are in place at any given time.
Remuneration	Remuneration for board and committee work may be paid, either fully or in part, in the form of company shares. Remuneration of a non-executive director shall be arranged separately from the share-based remuneration scheme applicable to the company's managing director, other executives, or personnel. The use of share-based remuneration schemes to remunerate non-executive directors is not, as a rule, justified from the perspective of the interests of the shareholders.	The board's remuneration is decided by the AGM with single majority, usually after a proposal from the largest shareholder or a nomination committee (nomination committees in Swedish companies are normally not comprised of members of the board but of the three to five largest owners of the company together with the chairman of the board). Usually a collective sum for the whole board is decided upon by the AGM, the distribution between different board members is a matter for the board. Even if the managing director usually has a place on the board (as the only representative from management), he will not be given special remuneration for this work. Incentive programmes for board members require GM approval. Board members (except for the managing director if he is a member of the board) may not take part in an incentive programme for the employees – the programme has to be exclusive for the board members.	Members of the board of directors and management board may receive as remuneration either a fixed payment or a payment determined on the basis of the member's or the company's performance. Board members (whether elected by the shareholders or appointed by the employees under the rules on co-determination) must receive equal payment, unless a different treatment is justified, given differences in workload. For the same reason, the chairman of the board, who normally spends more time preparing for and following up on board meetings than the average board member, typically receives an amount which is considerably higher than the amount paid to the other board members. The law does not restrict the types of remuneration that could be paid to the members of a board of directors. However, in its recommendations the Nørby Committee proposes that no stock option programs be adopted which include members of the board of directors.

Appendix 8. Variables of corporate governance

The names of the companies have been coded in order to protect their anonymity.

	Median age of B.E.LN	Educational background	Firm specific experience	Number of other linkages of B.E.
1	4.0	2.0	3.0	3.0
2	4.1	2.0	6.5	1.0
3	4.1	2.0	6.0	5.0
4	58.0	2.0	2.5	2.5
5	59.0	1.5	2.0	1.0
6	66.0	2.0	5.0	3.0
7	64.0	1.0	10.0	4.0
8	58.5	1.0	4.0	5.0
9	50.0	2.0	1.0	1.0
10	58.0	2.0	6.0	5.0
11	62.0	2.0	2.0	1.0
12	57.0	2.0	7.5	5.0
13	58.0	2.0	2.0	4.0
14	58.0	2.0	1.0	4.0
15	62.5	2.0	8.0	2.0
16	62.0	2.0	2.0	5.0
17	63.5	2.0	2.0	4.5
18	54.0	2.0	4.0	5.0
19	60.5	1.5	4.0	5.5
20	56.0	2.0	2.0	2.0
21	55.0	2.0	2.0	1.5
22	56.5	2.0	5.0	3.5
23	59.0	2.0	2.0	3.0
24	60.0	2.0	3.5	3.5
25	59.0	2.0	1.5	2.5
26	59.0	2.0	3.0	2.0
27	58.0	2.0	2.5	1.5
28	59.0	2.0	9.0	5.0
29	52.0	1.5	2.5	3.0
30	61.0	1.0	4.5	5.0
31	56.0	2.0	4.0	2.0
32	64.0	3.0	5.0	3.0
33	58.0	2.0	7.0	2.0
34	55.0	2.0	2.0	2.0
35	62.0	1.0	8.0	3.0
36	56.0	2.0	1.0	1.0
37	57.5	2.0	3.0	4.5
38	56.0	2.0	3.5	3.0
39	57.5	2.0	3.0	1.5
40	50.0	2.0	2.0	4.0
41	57.5	1.5	4.0	3.0
42	55.5	0.0	3.0	2.0
43	49.0	2.0	2.0	4.0
44	61.0	2.0	12.5	4.0
45	57.0	1.0	10.0	3.5
46	55.0	2.0	7.0	2.0
47	57.0	1.0	7.0	3.0
48	58.5	2.0	3.0	2.0
49	61.5	2.0	7.5	4.0
50	57.5	2.0	4.5	5.0
51	52.0	2.0	4.0	3.0
52	55.5	2.0	0.0	4.0
53	56.5	2.0	2.0	5.0
54	54.5	1.0	4.0	3.5
55	59.0	2.0	5.0	5.0
56	55.0	1.0	4.0	4.0
57	55.0	2.0	4.5	4.0
58	58.0	1.0	4.0	4.0
59	57.0	1.0	10.0	3.0
60	56.0	1.0	9.0	3.0
61	57.0	1.0	3.5	2.0
62	58.0	2.0	3.0	3.0

Appendix 9. Calculation of Total Net Accruals (Balance sheet method)

The names of the companies have been coded in order to protect their anonymity.

Year	Assets	Liabilities	Cash Dividends	Net Issuance	Net Cash Distributions to Equity	Cash	ΔAssets	ΔLiabilities	ΔCash	ACCRUAL EARNINGS	CASH EARNINGS	TOTAL NET ACCRUALS	TOTAL NET ACCRUALS	Net sales	ΔNet sales	Gross PPE
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]		[illegible]		[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		
2015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]				[illegible]								[illegible]		

Appendix 10. Calculation of Total Net Accruals (Cash flow method)

The names of the companies have been coded in order to protect their anonymity.

	Profit after tax	Cash earnings	Total Net Accruals
1	1194	2562	-1368
2	121.6	163	-41.4
3	142.9	9.9	133
4	243.5	190.1	53.4
5	-228	2478	-2706
6	151.4	-185.4	336.8
7	30.8	30.1	0.7
8	77.2	118.9	-41.7
9	123.8	190.3	-66.5
10	1053.1	287.8	765.3
11	442	528	-86
12	3662	6954	-3292
13	450	715	-265
14	240.7	149.6	91.1
15	208.2	243	-34.8
16	-17.2	36.9	-54.1
17	86	-5	91
18	1656	1002	654
19	783	-395	1178
20	9532	-303	9835
21	46.66	69.23	-22.57
22	916	300	616
23	78	17	61
24	429	5	424
25	47.2	-54.6	101.8
26	346	94.82	251.18
27	162.5	238.2	-75.7
28	1204.66	384.6907	819.9693
29	1758.482	6480.7972	-4722.3152
30	275.772	769.1644	-493.3924
31	80.802	78.6371	2.1649
32	102.31034	68.544493	33.765847
33	107.87	177.1138	-69.2438
34	373.19	277.6529	95.5371
35	331.784	143.227	188.557
36	-762.996	-285.8453	-477.1507
37	123.95	-668.7741	792.7241
38	4671.24	4295.3112	375.9288
39	378.55	147.0415	231.5085
40	492.316	635.6247	-143.3087
41	-319.456	-1117.9118	798.4558
42	685	999	-314
43	1887.5175	2321.7674	-434.2499
44	420.0768	174.2491	245.8277
45	836.9984	353.0669	483.9315
46	1275.4624	1601.4052	-325.9428
47	2595.681	8216.4955	-5620.8145
48	287.3408	75.2119	212.1289
49	33.184	397.2853	-364.1013
50	1487.6224	1226.2276	261.3948
51	86.85504	101.35309	-14.49805
52	158.5216	77.0662	81.4554
53	2273.7024	1663.9741	609.7283
54	1896.8192	748.2373	1148.5819
55	122.8352	288.3181	-165.4829
56	374.5984	497.8417	-123.2433
57	810.7776	566.9185	243.8591
58	1804.0128	2133.8358	-329.823
59	265.89632	-20.29059	286.18691
60	1762.3424	-25151.2228	26913.5652
61	521.2608	669.2853	-148.0245
62	443.2512	438.2624	4.9888

Appendix 11. Remuneration of executive and non-executive team

The names of the companies have been coded in order to protect their anonymity.

	CEO total remuneration	LN CEO Rem	CEO fixed pay	CEO performance based pay	CEO Performance /Fixed	Median fixed pay executive board	Median performance based pay executive board	H/G Column	Median fixed pay non-executive board	Median performance based pay non-executive board
1	6403135.0	15.7	1491614.0	4911521.0	3.3	344472.5	981860.4	2.9	84000.0	56000.0
2	1456621.0	14.2	682397.0	774224.0	1.1	331873.2	480068.8	1.4	30021.0	19979.0
3	1000366.0	13.8	625088.0	375278.0	0.6	309336.7	142669.7	0.5	41000.0	15000.0
4	1549925.4	14.3	555770.0	994155.4	1.8	220008.6	302520.5	1.4	60000.0	7000.0
5	2297000.0	14.6	981000.0	1316000.0	1.3	366181.8	196727.3	0.5	60500.0	0.0
6	1758050.0	14.4	673973.0	1084077.0	1.6	274177.2	251436.4	0.9	50000.0	16000.0
7	1031835.0	13.8	501356.0	530479.0	1.1	226808.1	80145.1	0.4	42000.0	3000.0
8	669765.0	13.4	559800.0	109965.0	0.2	222967.1	57003.2	0.3	44000.0	14897.0
9	1018525.0	13.8	878525.0	140000.0	0.2	238014.8	46468.8	0.2	33750.0	0.0
10	4638501.0	15.3	750000.0	3888501.0	5.2	6653.1	13306.3	2.0	34000.0	452000.0
11	1245166.0	14.0	631821.0	613345.0	1.0	316088.0	190643.0	0.6	50000.0	18125.0
12	2522179.0	14.7	1339530.0	1182649.0	0.9	701192.0	522466.0	0.7	86250.0	20933.0
13	1623118.0	14.3	684663.0	938455.0	1.4	197467.0	204450.0	1.0	35400.0	12300.0
14	787942.0	13.6	687942.0	100000.0	0.1	1664567.0	19957.0	0.0	40000.0	6975.0
15	1497326.0	14.2	462658.0	1034668.0	2.2	216973.0	453011.0	2.1	38000.0	13800.0
16	747910.0	13.5	614144.0	133766.0	0.2	240482.0	50062.0	0.2	36000.0	8100.0
17	1049208.0	13.9	634888.0	414320.0	0.7	339886.0	34995.0	0.1	84000.0	0.0
18	4290223.0	15.3	856961.0	3433262.0	4.0	800000.0	3000000.0	3.8	80000.0	0.0
19	1560000.0	14.3	957000.0	603000.0	0.6	381916.0	178583.0	0.5	70000.0	12000.0
20	1600556.0	14.3	1584563.0	15993.0	0.0	4650750.0	198625.0	0.0	55923.2	13600.0
21	1953437.0	14.5	552409.0	1401028.0	2.5	439528.0	243651.0	0.6	34500.0	13600.0
22	2759000.0	14.8	1079000.0	1680000.0	1.6	335727.0	321636.0	1.0	95000.0	0.0
23	1177621.0	14.0	506142.0	671479.0	1.3	198140.0	156137.0	0.8	48000.0	13300.0
24	1248200.0	14.0	878000.0	370200.0	0.4	268222.0	391333.0	1.5	66000.0	8000.0
25	655565.0	13.4	469565.0	186000.0	0.4	289530.0	90500.0	0.3	46800.0	8250.0
26	4355000.0	15.3	938000.0	3417000.0	3.6	949166.0	511433.0	0.5	53600.0	0.0
27	1610000.0	14.3	780000.0	830000.0	1.1	415000.0	410000.0	1.0	50000.0	0.0
28	1380200.0	14.1	1380200.0	0.0	0.0	562800.0	0.0	0.0	53600.0	0.0
29	1876000.0	14.4	1541000.0	335000.0	0.2	871000.0	187600.0	0.2	83214.0	0.0
30	1567800.0	14.3	924600.0	643200.0	0.7	777200.0	556100.0	0.7	60300.0	0.0
31	619750.0	13.3	469000.0	150750.0	0.3	469000.0	150750.0	0.3	53600.0	40200.0
32	2660302.0	14.8	845808.0	1814494.0	2.1	671876.0	1390786.0	2.1	48776.0	60032.0
33	1621400.0	14.3	790600.0	830800.0	1.1	576200.0	361800.0	0.6	33500.0	36850.0
34	2748072.0	14.8	1114880.0	1633192.0	1.5	878906.0	1074144.0	1.2	46900.0	3350.0
35	1031800.0	13.8	964800.0	67000.0	0.1	763800.0	0.0	0.0	40200.0	0.0
36	1112200.0	13.9	643200.0	469000.0	0.7	629800.0	469000.0	0.7	57428.5	0.0
37	2755500.0	14.8	2296250.0	459250.0	0.2	2296250.0	459250.0	0.2	229625.0	0.0
38	2881000.0	14.9	1460600.0	1420400.0	1.0	844200.0	536000.0	0.6	80400.0	13400.0
39	2385200.0	14.7	1058600.0	1326600.0	1.3	623100.0	871000.0	1.4	67000.0	0.0
40	2505800.0	14.7	938000.0	1567800.0	1.7	495800.0	830800.0	1.7	80400.0	0.0
41	1648200.0	14.3	750400.0	897800.0	1.2	412050.0	544375.0	1.3	57084.0	0.0
42	1610969.8	14.3	1042946.2	568023.6	0.5	1042946.2	568023.6	0.5	76946.3	0.0
43	3836104.5	15.2	1481123.7	2354980.8	1.6	750445.1	765950.1	1.0	314738.0	0.0
44	1820224.0	14.4	1176672.0	643552.0	0.5	342556.8	115545.6	0.3	59840.0	0.0
45	3809088.0	15.2	1695756.8	2113331.2	1.2	663544.0	460781.6	0.7	68000.0	0.0
46	2961209.6	14.9	1523200.0	1438009.6	0.9	534044.8	375550.4	0.7	64844.8	14688.0
47	10906099.1	16.2	1581635.1	9324464.0	5.9	1261106.7	8114181.1	6.4	136885.3	0.0
48	951891.2	13.8	761817.6	190073.6	0.2	148145.6	48932.0	0.3	54944.0	0.0
49	3689081.6	15.1	1290585.6	2398496.0	1.9	506978.3	638576.9	1.3	59622.4	3264.0
50	4090691.2	15.2	1541183.2	2549508.0	1.7	1074696.2	678965.5	0.6	106080.0	21986.2
51	565760.0	13.2	304640.0	261120.0	0.9	139520.0	108800.0	0.8	32640.0	0.0
52	2296332.8	14.6	2284038.4	12294.4	0.0	410567.7	409066.2	1.0	59840.0	13056.0
53	1632000.0	14.3	1414400.0	217600.0	0.2	435925.3	46421.3	0.1	62560.0	0.0
54	600576.0	13.3	462508.8	138067.2	0.3	322048.0	148240.0	0.5	34054.4	30627.2
55	12376652.8	16.3	11460230.4	916422.4	0.1	243230.2	150641.4	0.6	78608.0	0.0
56	277692.0	12.5	226667.4	51024.6	0.2	657535.6	152327.6	0.2	29920.0	0.0
57	1747899.7	14.4	862009.1	885890.6	1.0	394992.3	378768.5	1.0	76160.0	11424.0
58	1772569.6	14.4	1142400.0	630169.6	0.6	452961.6	204816.0	0.5	70720.0	21216.0
59	2430592.0	14.7	1572160.0	858432.0	0.5	535800.4	553811.8	1.0	68000.0	0.0
60	892160.0	13.7	794240.0	97920.0	0.1	904757.9	0.0	0.0	108800.0	0.0
61	3332435.2	15.0	1305600.0	2026835.2	1.6	533256.0	609239.2	1.1	7072.0	35360.0
62	971253.5	13.8	971253.5	0.0	0.0	398822.0	46547.1	0.1	62288.0	17323.8

Appendix 12. Discretionary accruals (Balance sheet method and Cash flow method)

DA Balance Sheet Method	DA Cash Flows
0.021394299	-0.072328013
-0.005444225	-0.023496743
0.039036131	0.032745409
-0.129857591	-0.009342843
-0.080090585	-0.149376491
0.051840923	0.160942228
0.006059381	-0.030836195
-0.133518992	-0.030314394
-0.122655623	-0.064332009
0.062175597	0.148090189
-0.040320403	-0.102391819
0.030342413	-0.016358263
-0.327792601	-0.237988497
-0.067781692	0.003425604
-0.074810255	-0.102077878
-0.032770588	-0.121834735
-0.154963619	-0.024665647
0.051478993	0.003920144
-0.100484986	0.071054559
-0.060495668	0.027549317
0.008788296	-0.085569002
-0.089659331	0.030945562
-0.007177098	0.034820216
0.077486061	0.06818303
0.057448024	0.003100729
-0.125705959	-0.003863725
-0.130613957	-0.08987855
-0.231533295	0.569615597
0.025470341	-0.024003111
0.445647206	-0.163403914
-0.009656609	-0.035748286
0.356312317	-0.043075391
0.017433226	-0.078614778
0.031962653	0.020551698
0.034444321	-0.010308062
-0.107596294	-0.157313763
-0.368609913	0.041079304
-0.060926813	0.076623636
-0.065783002	0.078093462
-0.082522065	-0.044517432
0.002857239	0.064452058
-0.083342475	-0.013986376
-0.020893009	-0.027834086
0.574361939	0.042846713
0.071568673	0.075380892
-0.030582276	-0.022859783
1.168132497	-0.159338507
-0.187213198	0.043667971
-0.103011577	-0.019768137
0.026891824	0.013260907
-0.179122081	0.006807836
0.017276731	0.010790659
-0.061283457	0.175792481
0.077935502	0.022629227
0.039508728	-0.037424146
-0.103515088	-0.017214358
-0.114591146	0.019627829
0.039513079	-0.015012526
0.071990629	0.112557801
0.124543808	0.075759063
0.005311563	8.41671E-06
-0.042862487	0.000713784

Appendix 13. Abbreviation table

Sr. No.	Abbreviation	Full Form
1	B.E.	Board Executives
2	DABalSheet	Discretionary Accruals calculated using total net accruals given by the balance sheet method
3	DACashFlow	Discretionary Accruals calculated using total net accruals given by the cash flow method
4	BoardSizeNL	Natural Logarithm of Board Size
5	BODAge	Median age of the board of directors
6	CEORemunNL	Natural Logarithm of the median total remuneration paid to the CEO
7	CEOPerfFix	Median ratio of performance pay to fixed pay of the CEO
8	ExecPerFix	Median ratio of performance pay to fixed pay of the executive team
9	NedPerFix	Median ratio of performance pay to fixed pay of non-executive di-rectors
10	SEC	U.S. Securities and Exchange Commission