Master's thesis

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Corporate Governance and Earnings Management in a Nordic Perspective: Evidence from the Oslo Stock Exchange

Corporate governance og earnings management i et nordisk perspektiv: Bevis fra Oslo Børs

Master's thesis in Økonomistyring
Supervisor: Frode Kjærland
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Abstract

The purpose of this study is to examine the relation between Nordic corporate governance practices and earnings management, as quantified through board independence, employee representation on the board, share ownership by directors, directors as majority shareholders, board activity and the presence of an audit committee. The study uses a sample of 49 companies listed on the Oslo Stock Exchange for a period of four years from 2014 to 2017. In accordance with prominent studies well-established in the earnings management literature, discretionary accruals models are used to estimate proxies for earnings management. The empirical findings show that the presence of employee representation on the board and the presence of an audit committee are both practices that significantly reduces the occurrence of earnings management. We further find significant evidence that both board independence and share ownership by directors positively affect earnings management, while board activity and directors as majority shareholders show an insignificant relation to earnings management. The study contributes to existing literature on corporate governance and earnings management by providing valuable insight into the Nordic corporate governance approach and its potential in mitigating earnings management.

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1. Introduction

In response to recent accounting scandals in both the US and Europe there has been an increased concern regarding the effectiveness of corporate governance practices. Undoubtedly, the concerns are justified. The case of Enron Corporation in 2001[1] has become a well-known example of the tragically and destroying consequences of weak corporate governance. The scandal created an international attention on how to systematically implement improved corporate governance practices to prevent fraud and questionable managing of earnings. Immediate responses were proposed reforms of corporate governance through legislation, codes of best practice and heightened listing standards (Coffee Jr, 2002). Amongst others, this included the US Sarbanes Oxley Act (SOX) in 2002, the UK Higgs Report and the Smith Report in 2003 and the establishment of the Norwegian Corporate Governance Board (NUES) in 2004. The motivation behind this study is thus the implicit assertion that earnings management and weak corporate governance practices are positively related.

The concept of corporate governance is however not new. Its need aroused with the separation of ownership and control in public companies (Berle and Means, 1932), that according to Jensen and Meckling (1976) resulted in agency problems. Consequently, the responsibility to present credible financial information and protect shareholders' interests fell on the corporate governance system, viewing the board as the custodian of the governance process (Fama and Jensen, 1983). As information asymmetry between preparers and users of financial information makes opportunistic choices possible (Beatty and Harris, 1999), the guardian role of the board is important because it creates public trust by securing financial and strategic viable firms aligned at creating long-term value for its shareholders.

The extent of earnings management could implicate how well the corporate governance practices are in protecting shareholder's interests, since corporate governance has the potential to reduce or even eliminate fraudulent behavior (Man and Wong, 2013). This study addresses

[1] Enron Corporation was at the time one of the largest companies in the US and was by *Fortune Magazine* for six consecutive years rated as the most innovative company in the country (Tran and Khaw, 2006). The corporation managed to hide enormous derivate losses by decentralizing its operations into subsidiaries and shell corporations that would have halted its growth much sooner if widely understood (Healy and Palepu, 2003). In addition to being the largest bankruptcy reorganization in America at the time, Enron was cited as the biggest audit failure (Bratton, 2001).

the triangular interaction between a company's shareholders, board of directors and management in a Nordic setting. Many prior studies on corporate governance and earnings management have come from countries within a two-tier or one-tier model of corporate governance, such as the US, the UK, Malaysia and China (Klein, 2002, Beasley, 1996, Peasnell et al., 2000, Xie et al., 2003, Liu and Lu, 2007), which differentiate from the Nordic corporate governance model in several ways. Lekvall et al. (2014) claims that two key distinctive features of Nordic corporate governance are the powers vested with a shareholder majority to effectively control the company and the entirely non-executive board. Norwegian boards are characterized by a high shareholder concentration. Accordingly, instead of turning to the marked for corporate control, major owners generally take active part in the governance of the company. The system thus provides dominating shareholders the motivation to take long-term responsibility for the company. Further, Norwegian Public Limited Companies (ASA) are comprised exclusively of non-executive officers, except for employee representatives. An important implication of this is a clear cut between the duties and responsibilities of a strategically and monitoring board and a mere executive management function. Lekvall et al. (2014) argues that although these distinctive features may not seem individually unique, together they make a comprehensive system. Its success is shown by the competitiveness of Nordic companies on international markets. In 2013, *The Economist* described the Nordic corporate governance model as "The next supermodel", pointing to Nordic countries clustering at the top of global league tables of everything from economic competitiveness to happiness (The Economist, 2013).

Although Nordic countries have been declared role models for their corporate governance systems (The Economist, 2013), there have been limited studies exploring the relationship between corporate governance and earnings management in countries within the Nordic model of corporate governance. The aim of this paper is to fill these gaps and provide valuable insight for users of financial statements. The findings will ultimately be of interest for countries following the same triangular interaction between a company's shareholders, board of directors and management. In addition, the study wishes to provide an increased attention on the potential benefits the Nordic corporate governance approach has on improving earnings quality by mitigating earnings management.

The remainder of this paper is organized as follows. Section two provides a review of previous literature and the hypothesis development. Our data and methodology are presented in section three, while section four presents the empirical results. Finally, section five conclude the paper's findings, limitations and suggestions for future research.

2. Review of Literature and Hypothesis Development

Earnings are the summary measure of firm performance produced under the accrual basis of accounting (Dechow, 1994). Healy and Wahlen (1999) provides a commonly cited definition of earnings management:

> *Earnings management occurs when managers intentionally use judgements in financial reporting and in structuring financial transactions to alter financial reports to mislead some stakeholders about the underlying economic performance of the firm or to influence contractual outcomes that depend on reported accounting numbers.*

As the definition points out, firms have two options to manage earnings. First, earnings can be managed through deviations from normal business activities (Xu et al., 2007). The firm could, for example, boost reported profit by cutting down on research and development, selling assets it would otherwise keep and cutting down on employee development. Deviating from normal business practices to manipulate reported income is defined as real earnings management (Roychowdhury, 2006). Second, a firm can alter the level of accruals to obtain the desired level of earnings. Using management judgements in financial reporting is defined as accrual-based earnings management (Healy and Wahlen, 1999). Real changes in investment and operating activities are costlier than mere accounting manipulation. It is therefore reasonable to assume that firms have a lower threshold to manipulate earnings through accruals rather than real activities. This study focuses on accrual earnings management only.

Many motivations for earnings management have been examined in the literature. The managerial motives are mixed and include motivations such as maximizing firm value (Beneish, 2001), management buyouts (DeAngelo, 1986), initial public offerings (IPO's) (Teoh et al., 1998) and meeting the expectations of financial analysts, management and investors (Payne and Robb, 2000, Kasznik, 1999). The essence of earnings manipulation is derived from the flexibility given to management in disclosing their reported earnings (Busirin et al., 2015).

Accounting information is traditionally considered to have a dual role as both informer and steward (Ronen and Yaari, 2008). The informative role arises because of investors' need to predict future cash flows and assess the risk of investments. This study will focus on the stewardship role of accounting. The stewardship role of accounting comes from the separation of ownership and management in public firms, resulting in agency problems that could lead to divergence between the interest of shareholders and managers (Jensen and Meckling, 1976, Gjesdal, 1981). A following control difficulty is information asymmetry. Information

asymmetry exists when managers have a more complete set of information about the company than the shareholders, leading to agency costs as the managers have opportunities to promote their own self-interest at the shareholders' expense (Beatty and Harris, 1999). Prior studies have found a positive relationship between agency costs and the latitude of earnings management (Beatty and Harris, 1999, Man, 2019). Corporate governance is thus necessary to align and coordinate the interest of the upper management with those of the shareholders to mitigate the occurrence of earnings management. Fama and Jensen (1983) argue that the board of directors is the highest internal control mechanism responsible for monitoring the actions of top management. Monks and Minow (2008) underlines that as the body who governs the firm it is the board of directors' duty to ensure that the company is run in the long-term interests of the shareholders. While there is no generally accepted definition of corporate governance, it may be defined as a system "consisting of all the people, processes and activities to help ensure stewardship over a company's assets" (Messier et al., 2008).

There are mixed evidences on the effect corporate governance practices has on earnings management. Board characteristics that have been frequently investigated in earnings management literature, such as board independence, board activity and the presence of an audit committee will be included in this study (see Table 1). In addition, directors' share ownership, majority shareholding by directors and the presence of employee representatives will be examined as key elements of the Nordic corporate governance model (see Table 1). Following are some prominent studies reviewed in this regard.

2.1 Board independence

NUES (2018) recommend that most of the shareholder-elected members of the board should be independent of the company's executive personnel and material business contacts, while at least two of the shareholder-elected members should be independent of the company's main shareholders. Independent directors are chosen in the interest of shareholders, adding value due to their impartial monitoring of business ethics (Rosenstein and Wyatt, 1990). Independent board members are associated with effective monitoring (Fama, 1980), while not-independent board members are considered an obstacle to efficient monitoring (Ronen and Yaari, 2008). It is assumed that effective monitoring controls earnings management, as suggested in studies investigating board independence and earnings management (Dechow et al., 1996, Beasley, 1996, Klein, 2002, Peasnell et al., 2005). Haldar et al. (2018) and Van den Berghe and Baelden (2005) do however point to other important aspects of directors' independence. They argue that the quality of independent directors depends on other factors specific to the directors' character,

the firm and its environment. In accordance with prior earnings management literature, we test the following hypothesis:

H1: There is a significantly negative relation between board independence and earnings management.

2.2 Employee representatives

As stated in the Public Companies Act, the main rule regarding employee representation in Norway is that one third of the directors can be elected by and among the employees. NUES (2018) do not mention any specific recommendations regarding employee representatives since they are considered ordinary members of the board with the same authority and responsibility as the shareholder-elected board members. Literature and prior studies on employee representatives and earnings management is however rare. In Fauver and Fuerst (2006) study on German companies, they argue that employee representatives contribute as informed monitors with detailed operational knowledge that is valuable in board decision-making and supervising. They further conclude that the presence of employee representatives on the board is negatively and significantly related to earnings management. Other studies on monitoring and earnings management have found that better monitoring quality by directors could ultimately help to reduce agency costs induced by either managers or large shareholders (Gul et al., 2002, Peasnell et al., 2005). The importance of operational knowledge is supported in a Chinese study conducted by Chen et al. (2015). They found that the quality of managerial oversight by directors depends significantly on the quality and completeness of the information they receive, stating that directors' monitoring is more effective in a richer information environment. Accordingly, our second hypothesis is:

H2: There is a significantly negative relation between the presence of employee representatives and earnings management.

2.3 Share ownership by directors

It is difficult to state a clear theoretical prediction about the effect of share ownership by directors on earnings management. From an opportunistic point of view, share ownership by directors could weaken their independence and their effectiveness in monitoring financial reporting (Lin and Hwang, 2010). On the other hand, managers of firms with low director ownership are expected to exploit the latitude of accounting standards to ease financial constraints, indicating that higher share ownership by directors will reduce the occurrence of

earnings management (Gul et al., 2002). It is also found that directors' shareholdings are associated with smaller increases in information asymmetry (Kanagaretnam et al., 2007), which in turn could reduce agency costs and better prevent the occurrence of earnings management (Beatty and Harris, 1999, Man, 2019). The theoretical assumptions will also vary depending on the ownership structure. According to NUES (2018), long-term share ownership by directors contributes to create an increased common financial interest between the shareholders and the members of the board. With a majority shareholding in the company, and thus a longer-term ownership perspective, an investor is incentivized to prioritize the company's strategic growth. Further, NUES (2018) emphasize that a short-term ownership perspective may work against the best interest of the company and its shareholders. Prior studies on share ownership by directors and earnings management reflects the inconsistent assumptions. Peasnell et al. (2005) found a positive, though not significant, relation between share ownership by directors and earnings management, while Gul et al. (2002) reported a significantly negative relation. In their meta-analysis, Lin and Hwang (2010) documented no significant relationship. Based on the theoretical predictions and the existing literature the following two hypotheses have been made:

H3: There is a significant relation between share ownership by directors and earnings management.

H4: There is a significantly negative relation between the percentage of directors as majority shareholders and earnings management.

2.4 Board activity

The board activity is measured by the board meeting frequency and is often considered an indicator of the effort put in by the directors. It is generally believed that an active board is more effective in monitoring the management (Ronen and Yaari, 2008). Lipton and Lorsch (1992) stresses that a widely shared problem among directors is too little time to carry out their duties, pointing out that more frequent board meetings will make directors more willing to perform their duties in line with shareholders' interests. The literature on board activity and earnings management consists of contradictory conclusions. Vafeas (1999) and Xie et al. (2003) find that more frequent board meetings lower the degree of earnings management, while other studies show either a positive relation between board meeting frequency and earnings management (Daghsni et al., 2016) or no relation between them at all (Ahmed, 2017). Based on the contradictory literature, our fifth hypothesis is:

H5: There is a significant relation between board meeting frequency and earnings management.

2.5 Audit committee

The Public Companies Act and the Stock Exchange Regulations stipulates whether Norwegian public companies are required to establish an audit committee or not. The members of the audit committee are elected by and among the board members and at least one of the members of the committee must be independent with regards to NUES' (2018) recommendations (Lekvall et al., 2014). According to the Public Companies Act, the audit committee's primary mission is to prepare the supervision of the financial reporting process and monitor the systems for internal control and risk management. The committee should further meet regularly with the firm's external auditor and internal financial managers to produce balanced and accurate reports. Accordingly, audit committees complement existing internal governance practices by improving the monitoring function and reduce agency conflicts (Cai et al., 2015). Prior studies have found a significant relation between earnings management and audit committee practices (Bedard et al., 2004). Klein (2002) found that the existence of an audit committee will reduce earnings management. Similarly, Dechow et al. (1996) found that firms manipulating earnings were less likely to have an audit committee. Our last hypothesis is formulated as follows:

H6: There is a significantly negative relation between the presence of an audit committee and earnings management.

Table 1: Presentation of variables

Variable	Predicted sign	Definition
Board independence	-	The percentage of independent shareholder-elected board members.
Employee representatives	-	Dummy variable that equal 1 if the company has employee representatives on the board, 0 otherwise.
Share ownership by directors	+/-	The number of directors who own shares directly or indirectly in the company.
Directors as majority shareholders	-	The percentage of directors as majority shareholders.
Board activity	+/-	The number of board meetings held during the period.
Audit committee	-	Dummy variable that equal 1 if the company has an audit committee, 0 otherwise.

Notes: Presentation and description of the corporate governance variables along with the expected impact on earnings management.

3. Data and Methodology

3.1 Data and sample selection

Our initial dataset consisted of quarterly financial statements from 168 companies listed on the Oslo Stock Exchange in the period 2014 to 2017. Due to difficulties in defining abnormal accruals in the financial service industry, 16 bank and insurance companies were eliminated from the sample. In addition, we excluded 18 companies that had not been listed for the entire period, 83 firms due to lack of data and 2 firms due to mergers and acquisitions in the period (see Table 2). The financial data was collected through the Thomson Reuters Eikon database, while the corporate governance data was collected from companies' annual reports. If the reports lacked data, it was retrieved directly from the companies through e-mails and phone calls.

Table 2: Sample selection

Sample selection	
Companies listed on the Oslo Stock Exchange 12.31.17	168
- Companies in the financial service industry	16
- Not-continuously listed companies in the period	18
- Companies lost due to lack of data	83
- Companies lost due to mergers and acquisitions	2
= Companies included in the sample	**49**
Initial firm-quarter observations for 2014 to 2017	2688
- Companies in the financial service industry	256
- Not-continuously listed companies in the period	288
- Companies lost due to lack of data	1328
- Companies lost due to mergers and acquisitions	32
= Final sample	**784**

In Das et al. (2009) study on quarterly earnings patterns and earnings management, they find that firms performing poorly in interim quarters may attempt to increase earnings in the fourth quarter to achieve a desired annual earnings target. Accordingly, we use data from quarterly reports in our analyses to catch more of the fluctuations in earnings. Further, interim reports are often unaudited, which allows greater managerial discretion and require less detailed disclosure than annual financial statements (Jeter and Shivakumar, 1999). Using quarterly financial data in our analysis could thus increase the likelihood of detecting earnings management.

3.2 Measurement of earnings management

In the existing earnings management literature, a commonly used approach for detecting earnings management is by examining accruals. The literature distinguishes between two widely used approaches in defining total accruals: the balance sheet-based approach (Healy, 1985, Jones, 1991) and the cash flow-based approach (Vinten et al., 2005). The cash flow approach measures accruals directly from the statement of cash flows which mitigate the danger of measurement errors. Consequently, this study uses the cash flow approach to define total accruals.

The cash flow approach measures total accruals as the difference between the earnings of an entity and its cash flow generated from operating activities. Thus, to calculate total accruals using the cash flow approach the following formula has been used:

$$TA_{it} = NI_{it} - CFO_{it}$$

where

TA_{it} = total accruals for company i in quarter t
NI_{it} = net income for company i in quarter t
CFO_{it} = cash flow from operating activities for company i in quarter t

Total accruals consist of a discretionary component and a non-discretionary component. Non-discretionary accruals represent changes in a company's underlying performance, while discretionary accruals represent changes due to management's accounting decisions (Ronen and Yaari, 2008). When estimating earnings management, it is the discretionary accruals that are of interest. A fundamental issue is however the challenge of separating the discretionary and non-discretionary components of earnings (Elgers et al., 2003), since they cannot be directly observed. Several methods have been developed to estimate the discretionary component of accruals. A widely-used approach is to benefit regression techniques, where total accruals are regressed on variables that are proxies for normal accruals. Discretionary accruals are thus the unexplained component of total accruals.

Several widely used regression techniques have their origin in the original Jones model from 1991. This study uses two modified versions of the original model; the Modified Jones model proposed by Dechow et al. (1995) and a performance-matched model introduced by Kothari et al. (2005). The Modified Jones model was designed to eliminate the assumed tendency of the

Jones model to measure discretionary accruals with error when discretion was exercised over revenues (Dechow et al., 1995). The modification made from the original Jones model is that changes in revenues are adjusted for the changes in receivables in the event period. When applying the Modified Jones model, the non-discretionary and the discretionary components of total accruals can be calculated by the following equation (Dechow et al., 1995):

$$\frac{TA_{it}}{A_{it-1}} = \beta_0 + \beta_1 \frac{1}{A_{it-1}} + \beta_2 \frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} + \beta_3 \frac{PPE_{it}}{A_{it-1}} + \varepsilon_{it} \quad (1)$$

where

TA_{it} = total accruals deflated by lagged total assets for company i in quarter t
A_{it-1} = lagged total assets for company i in quarter t
$\Delta\mathrm{REV}_{it}$ = changes in total sales deflated by lagged total assets for company i in quarter t
$\Delta\mathrm{REC}_{it}$ = changes in account receivables deflated by total assets for company i in quarter t
PPE_{it} = net value of property, plant and equipment deflated by lagged total assets for company i in quarter t

Kothari et al.'s (2005) performance matched model is an extended version of the Modified Jones model, where return on assets (ROA) is added as an additional variable. The following equation is used:

$$\frac{TA_{it}}{A_{it-1}} = \beta_0 + \beta_1 \frac{1}{A_{it-1}} + \beta_2 \frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} + \beta_3 \frac{PPE_{it}}{A_{it-1}} + \beta_4 \frac{ROA_{it}}{A_{it-1}} + \varepsilon_{it} \quad (2)$$

where

ROA_{it} = net income after tax deflated by lagged total assets for company i in quarter t

Kothari et al. (2005) claim that economic intuition, empirical evidence and extant models of accruals suggest that accruals are correlated with a firm's present and past performance. Hence, to control for performance on discretionary accruals, ROA is added as a control variable. Further, because of the non-linear relationship between accruals and performance, Kothari et al. (2005) argue that a performance matched approach is better specified to test discretionary accruals than by using a linear regression-based approach.

In both models we deflate the variables by lagged total assets to control for firm size effect (Healy, 1985, DeAngelo, 1986) and to mitigate heteroscedasticity in the residuals (White, 1980). Further, non-discretionary accruals are estimated using ordinary least squares (OLS). The prediction from the OLS estimation in model (1) and model (2) represents non-discretionary accruals while the residuals represent discretionary accruals. Discretionary accruals can be both positive and negative. In our analysis, we use the absolute value of

discretionary accruals as a proxy for earnings management. Higher levels of discretionary accruals indicate greater levels of earnings management.

The Modified Jones model (1) shows an explanatory power of 0.1139 (Appendix Table A1), while the Kothari model (2) shows an explanatory power of 0.4334 (Appendix Table A2). The higher the explanatory power, the closer the estimated regression equation fits the sample data (Brooks, 2019). Hence, the measure of discretionary accruals following the Kothari model (2) is used as the dependent variable for our further corporate governance analysis.

3.2 Corporate governance

After estimating the extent of discretionary accruals, the relation between earnings management and the corporate governance practices is investigated. In our regression, the corporate governance practices represent the following independent variables:

Board independence: refers to the percentage of shareholder-elected directors that are evaluated as independent with respect to the company's executive management, material business contacts and main shareholders.

Employee representatives: refers to the presence of employee representatives or not. The variable is calculated as a dummy variable assigned the value 1 if the board has employee representatives, 0 otherwise.

Share ownership by directors: refers to the percentage of directors who directly or indirectly holds shares in the company. The variable is calculated by scaling the total number of directors who holds shares by total board size.

Directors as majority shareholders: refers to the percentage of directors who directly or indirectly is listed amongst the company's 20 largest shareholders. The variable is calculated by scaling the total number of directors who are majority shareholders by total board size.

Board activity: refers to the total number of meetings held during a year, scaled by quarter. The variable is calculated using the natural logarithm of total board meetings[2].

Audit committee: refers to the presence of an audit committee or not. The variable is calculated as a dummy variable assigned the value 1 if the firm has an audit committee, 0 otherwise.

[2] The natural logarithm is used to correct for heteroscedasticity (Benoit, 2011).

Earnings management decisions can also be influenced by factors other than the explanatory variables included in this analysis. To control for this and for any spurious relations between board characteristics and earnings management, the control variables firm size, return on assets and return on equity have been included.

Firm size: the natural logarithm of total assets is used as a proxy for firm size.

Return on assets: net income divided by total assets is used as a measure for firm performance.

Return on equity: total equity divided by total assets is used as a measure for firm profitability.

To test our hypotheses', the following equation is used:

$$absDA_{it} = \beta_0 + \beta_1(BISE_{it}) + \beta_2(DER_{it}) + \beta_3(SOD_{it}) + \beta_4(MJS_{it}) + \beta_5(BA_{it}) + \beta_6(AC_{it}) + \beta_7(FS_{it}) + \beta_8(ROA_{it}) + \beta_9(ROE_{it}) + \varepsilon_{it} \quad (3)$$

where

absDA_{it} = absolute value of discretionary accruals for company i in quarter t
BISE_{it} = board independence for company i in quarter t
DER_{it} = dummy variable that equal 1 if the company has employee representatives on the board, 0 otherwise
SOD_{it} = share ownersip by directors for company i in quarter t
MJS_{it} = directors as majority shareholders for company i in quarter t
BA_{it} = board activity for company i in quarter t
AC_{it} = dummy variable that equal 1 if the company has an audit committee, 0 otherwise
FS_{it} = firm size for company i in quarter t
ROA_{it} = return on assets for company i in quarter t
ROE_{it} = return on equity for company i in quarter t

Our study uses panel data, featured by exploring the cross-section and time-series data simultaneously. We ran a Hausman test (Appendix Table A3), showing that fixed effects estimator was a better fit for our model than the random effects estimator[3]. We further estimated equation (3) using OLS. Additional analysis of the residuals from this estimation displayed significant heteroscedasticity. Consequently, we estimated the regression using robust standard errors. In regression estimates, multicollinearity due to a significant linear relationship between the explanatory variables can affect the estimation of the coefficients of the variables, leading to imprecise results. To test the severity of multicollinearity in our data we used a correlation matrix and the Variance Inflation Factor (VIF) method. According to Brooks (2019), severe multicollinearity is indicated if the correlation between two variables exceeds 0.80 and the VIF index exceed five. The VIF for each explanatory variable is under five, with a total mean of

[3] The dummy variables concerning employee representation and audit committee are not considered time-invariant explanatory variables. They will therefore not be absorbed by the intercept in the fixed effects model.

1.6. Supported by the correlation matrix, multicollinearity is not a problem to the model. The correlation matrix and VIF index for the variables are reported in the Appendix (Table A4 and Table A5).

4. Empirical Results

4.1 Descriptive statistics

Table 3: Descriptive statistics

				---------- Quantiles ----------				
	n	**Mean**	**S.D.**	**Min**	**.25**	**Mdn**	**.75**	**Max**
Discretionary accruals	784	0.03	0.04	0.00	0.01	0.02	0.04	0.44
Board independence	784	0.70	0.20	0.00	0.60	0.71	0.80	1.00
Employee representatives	784	0.46	0.50	0.00	0.00	0.00	1.00	1.00
Share ownership by directors	784	0.63	0.22	0.00	0.50	0.63	0.80	1.00
Directors as majority shareholders	784	0.22	0.21	0.00	0.00	0.20	0.33	1.00
Board activity	784	0.95	0.37	0.00	0.69	0.92	1.18	2.20
Audit committee	784	0.92	0.27	0.00	1.00	1.00	1.00	1.00
Firm size	784	8.74	1.93	2.04	7.30	9.02	9.94	13.80
Return on assets	784	-0.01	0.07	-0.85	-0.01	0.01	0.02	0.30
Return on equity	784	-0.01	0.22	-2.88	-0.02	0.01	0.04	2.13

Notes: *Descriptive statistics for our sample firms. The mean, standard deviation and quantiles are reported in NOK million.*

Table 3 reports descriptive statistics for our sample firms. The absolute value of discretionary accruals has a small mean of 0.03 with a standard deviation of 0.04. The percentage of board independence spans from 0.00 to 1.00, indicating that our sample consists of firms with both 100 percent independent boards and zero percent independent boards. On average the presence of independent shareholder-elected board members is 70 percent. The number of board meetings held by the board of directors is on average 0.95 per quarter[4], while the minimum and maximum number of meetings per quarter is respectively 0.00 and 2.20[5]. Further, the descriptive statistics show that our sample consists of firms with both 100 percent share ownership by directors and zero percent share ownership by directors. The mean of share ownership by directors is 63 percent. With respect to the percentage of directors as majority shareholders, the average is 22 percent. The mean of the dummy variable for employee representatives on the board is 0.46, indicating that 46 percent of the sample firms have boards

[4] This is equivalent to an average $e^{0.95} \approx 2.59$ per quarter.
[5] This is equivalent to a minimum value of $e^{0.00} = 1$ per quarter and a maximum value of $e^{2.20} \approx 9$ per quarter.

with presence of employee representatives. The dummy variable referring to the presence of an audit committee shows that 92 percent of the sample firms have an audit committee. Finally, with respect to the control variables, the mean value of firm size, return on assets and return on equity is respectively 8.74, -0.01 and -0.01.

4.2 Regression results

Table 4: Regression results model (3)

Variables	Dependent variable: Discretionary accruals (absDA)
Board independence (BISE)	0.025*
	(0.014)
Employee representatives (DER)	-0.011**
	(0.004)
Share ownership by directors (SOD)	0.020*
	(0.012)
Directors as majority shareholders (MJS)	-0.012
	(0.020)
Board activity (BA)	0.016
	(0.009)
Audit committee (AC)	-0.071*
	(0.038)
Firm size (FS)	-0.014**
	(0.006)
Return on assets (ROA)	-0.100***
	(0.037)
Return on equity (ROE)	-0.015***
	(0.002)
Constant	0.178***
	(0.043)
Observations	784
Number of Identifications	49
R-squared	0.204
Robust standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Notes: *The equation used to test our hypotheses': $absDA_{it} = \beta_0 + \beta_1(BISE_{it}) + \beta_2(DER_{it}) + \beta_3(SOD_{it}) + \beta_4(MJS_{it}) + \beta_5(BA_{it}) + \beta_6(AC_{it}) + \beta_7(FS_{it}) + \beta_8(ROA_{it}) + \beta_9(ROE_{it}) + \varepsilon_{it}$ (3). ***, ** and * indicate the significance level at 1%, 5% and 10%, respectively (two-tailed). All numbers reported in NOK million.*

Table 4 reports the results of the multivariate regression analysis on our panel data. The R-square is the coefficient of determination, and the value of 0.2042 indicate that 20.42 percent of the variation in discretionary accruals is explained by our regression equation.

4.2.1 Results hypothesis 1 – Board independence

The panel regression analysis provides a significantly positive relation between the proportion of independent board members and earnings management, providing evidence that the occurrence of earnings management increases in line with the percentage of board independence. Thus, the result do not coincide with our hypothesis, nor the results of Beasley (1996), Dechow et al. (1996), Peasnell et al. (2005) and Klein (2002). Nevertheless, the result is of interest. The previous mentioned studies are all recognized and well-established in the earnings management literature, yet one could argue that firms, legislations and codes of best practices have changed since the studies were conducted. Such changes may imply that the current recommendations regarding independence could benefit from a reconsideration taking into account today's business environment and the experiences made during the recent decades. Further, looking beyond the earnings management literature, our findings support Van den Berghe and Baelden (2005) argument that it may not be sufficient for good corporate governance to implement a formal standard on board independence alone. They argue that "soft" elements like character, attitude and independence of mind are equally important elements to the concept of independence[6]. Accordingly, as stated in the report of the Conference Board on Corporate Governance Best Practices, "directors must not only be independent according to evolving legislative and stock exchange listing standards, but also independent in thought and action – qualitative independent" (Brancato and Plath, 2003). Hence, our finding could imply that the benefits of board independence may be best achieved in association with an overall review of several key elements of independence.

4.2.2 Results hypothesis 2 – Employee representatives

The regression results provide significant evidence that employee representation has a direct negative effect on earnings management, as we expected in our hypothesis. The finding may be due to several causes. In line with Fauver and Fuerst (2006) analysis on German companies, the result could imply that employee representation provides a credible channel for information to the board of directors. Supported by the findings of Chen et al. (2015), this could improve the quality of managerial monitoring and board decision-making since employee representation provides a richer information environment. Further, one could argue that the operational

[6] This argument was also brought to concern by Åse Aulie Michelet on NUES' 2017 annual debate for good corporate governance practices, arguing that for directors to truly be independent they must be able to promote and defend their own opinions (Bjørklund, 2017). Michelet has many years of experience as both director and manager of stock exchange listed companies like Teres Medical Group, Orkla, Norske Skog, Yara and Cermaq.

information provided by the employee representatives helps to decrease the control issue of information asymmetry. In line with the findings of Gul et al. (2002), Peasnell et al. (2005) and Beatty and Harris (1999), the assumed increased monitoring quality and decreased information asymmetry brought to the board by employee representation is effective in mitigating agency costs and earnings management.

4.2.3 Results hypothesis 3 and 4 – Share ownership by directors

The regression analysis shows a significantly positive relationship between share ownership by directors and earnings management, suggesting a direct positive effect between increasing the percentage of directors who owns shares in the company and the latitude of earnings management. The finding is not in line with our hypothesis, nor the results of Gul et al. (2002). As suggested by Kanagaretnam et al. (2007), directors' shareholdings are associated with smaller increases in information asymmetry, which in turn has the potential to reduce agency costs and thus mitigate the occurrence of earnings management. With respect to our finding, one could therefore argue that there may be other elements of importance when evaluating directors' shareholdings effect on earnings management. Supported by Lin and Hwang (2010), the result may provide evidence that directors who own shares in the company are subject to weakened independence and weakened effectiveness in impartial monitoring, leading to increased agency problems and earnings management. The result is fairly congruent with the findings of Peasnell et al. (2005), who found a positive, though not significant relationship between directors' shareholding and earnings management. It would also be of importance to include our fourth hypothesis in this analysis to more thoroughly assess the assumption. For our fourth hypothesis, we find a negative, though not significant relation between majority shareholding by directors and earnings management. Even though the result does not support a direct negative effect on earnings management, its implications are of interest. It could imply that majority share ownership gives directors an incentive to prioritize the company's strategic growth. If so, this would help to reduce agency problems related to dissimilar financial interests between the shareholders and the members of the board. The sample data shows that the mean of share ownership by directors and the mean of majority shareholding by directors are respectively 63 percent and 22 percent of the total board size. This implicates that on average 65 percent of the directors who own shares in the company are considered minority share owners with greater likelihood of a short-term ownership perspective. Given a short-term ownership perspective, they have greater incentives to pursue higher-risk strategies to generate larger financial returns. Combined, these assumptions could implicate that companies with

large proportions of minority shareholders on the board manage earnings more frequently. Given these findings, our results corroborate NUES' (2018) recommendations regarding directors' long-term and short-term shareholdings.

4.2.4 Results hypothesis 5 – Board activity

The results of the panel regression suggest a positive, though insignificant relation between board activity and earnings management. This implies that board meeting frequency do not seem to have a direct effect on earnings management, in contradiction to what we expected in our hypothesis and the results of Vafeas (1999), Xie et al. (2003) and Daghsni et al. (2016). Our result is however in line with previous studies conducted by Ahmed (2007) and Ahmed (2017). It is worth noticing that the p-value of 0.103 is fairly close to a 10 percent significant level.

4.2.5 Results hypothesis 6 - Audit committee

Further, our regression analysis provides significant evidence that an audit committee who supervises the financial reporting and disclosure negatively affects the occurrence of earnings management. This is in line with our hypothesis and the studies conducted by Klein (2002) and Dechow et al. (1996). The finding implies that the audit committee's role in board matters contributes to create trust by securing internal control of financial reporting and that the firm complies with laws and regulations. In addition, one could argue that the regularly contact they have with the firm's external auditor could be effective in reducing agency conflicts as they weigh divergent views to produce a more balanced and accurate financial report.

Finally, the control variables behave as expected and are consistent with other earnings management studies (Iqbal et al., 2015, Daghsni et al., 2016). Firm size is found to be negatively related with earnings management, indicating that the occurrence of earnings management is decreasing in line with the size of the firm. The results further show that ROA and ROE negatively affects earnings management, suggesting that earnings management decreases as firm performance and profitability increases. In addition, all control variables are significant.

5. Summary and Concluding Remarks

Cited as the next supermodel for corporate governance (The Economist, 2013), it is of interest to examine corporate governance practices within the Nordic model of corporate governance. The purpose of this study is to provide evidence to better assess the relation between Nordic

corporate governance practices and earnings management, and potentially highlight the benefits of the model. This study investigates the impact of corporate governance practices on earnings management in Norway for a period of four years from 2014 to 2017. The robust multivariate regression analysis under the fixed effect estimator has been used for estimation, while the absolute value of discretionary accruals is used as a proxy for earnings management.

Significant results show that the presence of employee representation on the board and the presence of an audit committee are both practices that reduces the occurrence of earnings management. The negative relation between the presence of an audit committee and earnings management is already well-established in the earnings management literature (Klein, 2002, Dechow et al., 1996), while the findings of employee representation to a larger extent contributes with new insight to the literature. Evidence suggests that employee representatives provide a credible channel for information, contributing to a richer information environment. This is effective in mitigating agency costs and earnings management. Other significant results show that both board independence and share ownership by directors are positively related to earnings management. Our findings on board independence is contradictory to the findings of other prominent studies (Beasley, 1996, Dechow et al., 1996, Peasnell et al., 2000, Klein, 2002), but could imply that there are other important aspects of independence that should be taken into consideration to improve the quality of the directors. As for the results regarding share ownership by directors, our findings indicate that large proportions of minority shareholders on the board could give the directors incentives to pursue higher-risk strategies to generate larger financial returns. Finally, board activity and directors as majority shareholders both presented insignificant relations to earnings management. Still, their implications on earnings management may be of interest.

The contribution of this study is not without certain limitations. First, by using discretionary accruals as a measurement for earnings management we rely solely on proxy measures. We can thus not exclude the possibility that our findings are subject to more natural accounting explanations than earnings management. Second, the relatively small sample size could affect the accuracy of our estimations. Finally, our corporate governance model may not be sufficient in capturing the omission of other corporate governance variables. These limitations may constrain the validity of the findings.

Future research studies could include an analysis of the other Nordic countries to reinforce or challenge our findings regarding the Nordic corporate governance model. It would also be of

interest to include a comparison between the Nordic countries to rule out any potential differences, and if so, what the cause of these differences are.

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Appendix

Table A1: The Modified Jones model (1)

Variables	Dependent variable: Total accruals
$1/A_{it-1}$	-4.014***
	(0.398)
$\Delta REV_{it} - \Delta REC_{it}$	-0.007
	(0.037)
PPE_{it}	-0.021***
	(0.007)
Constant	-0.013***
	(0.003)
Observations	784
R-squared	0.117
Standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Notes: *The equation for the Modified Jones model developed by Dechow, Sloan and Sweeney (1995):* $\frac{TA_{it}}{A_{it-1}} = \beta_0 + \beta_1 \frac{1}{A_{it-1}} + \beta_2 \frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} + \beta_3 \frac{PPE_{it}}{A_{it-1}} + \varepsilon_{it}$ (1).

Table A2: The performance matched model (2)

Variables	Dependent variable. Total accruals
$1/A_{it-1}$	-0.213
	(0.366)
$\Delta REV_{it} - \Delta REC_{it}$	-0.123***
	(0.030)
PPE_{it}	-0.012**
	(0.006)
ROA_{it}	0.615***
	(0.029)
Constant	-0.016***
	(0.003)
Observations	784
R-squared	0.436
Standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Notes: *The equation for the performance matched model by Kothari, Leone et al (2005):* $\frac{TA_{it}}{A_{it-1}} = \beta_0 + \beta_1 \frac{1}{A_{it-1}} + \beta_2 \frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} + \beta_3 \frac{PPE_{it}}{A_{it-1}} + \beta_4 \frac{ROA_{it}}{A_{it-1}} + \varepsilon_{it}$ (2).

Table A3: Hausman test model (3)

Test summary	Chi-sq. Statistic	Chi-Sq. d.f.	P-value
	143.00	9	0.0000

Notes: *Test of H_0: difference in coefficients not systematic. The random effects estimator is chosen if the p-value is > 0.05, and the fixed effect estimator is chosen otherwise.*

Table A4: Correlation matrix

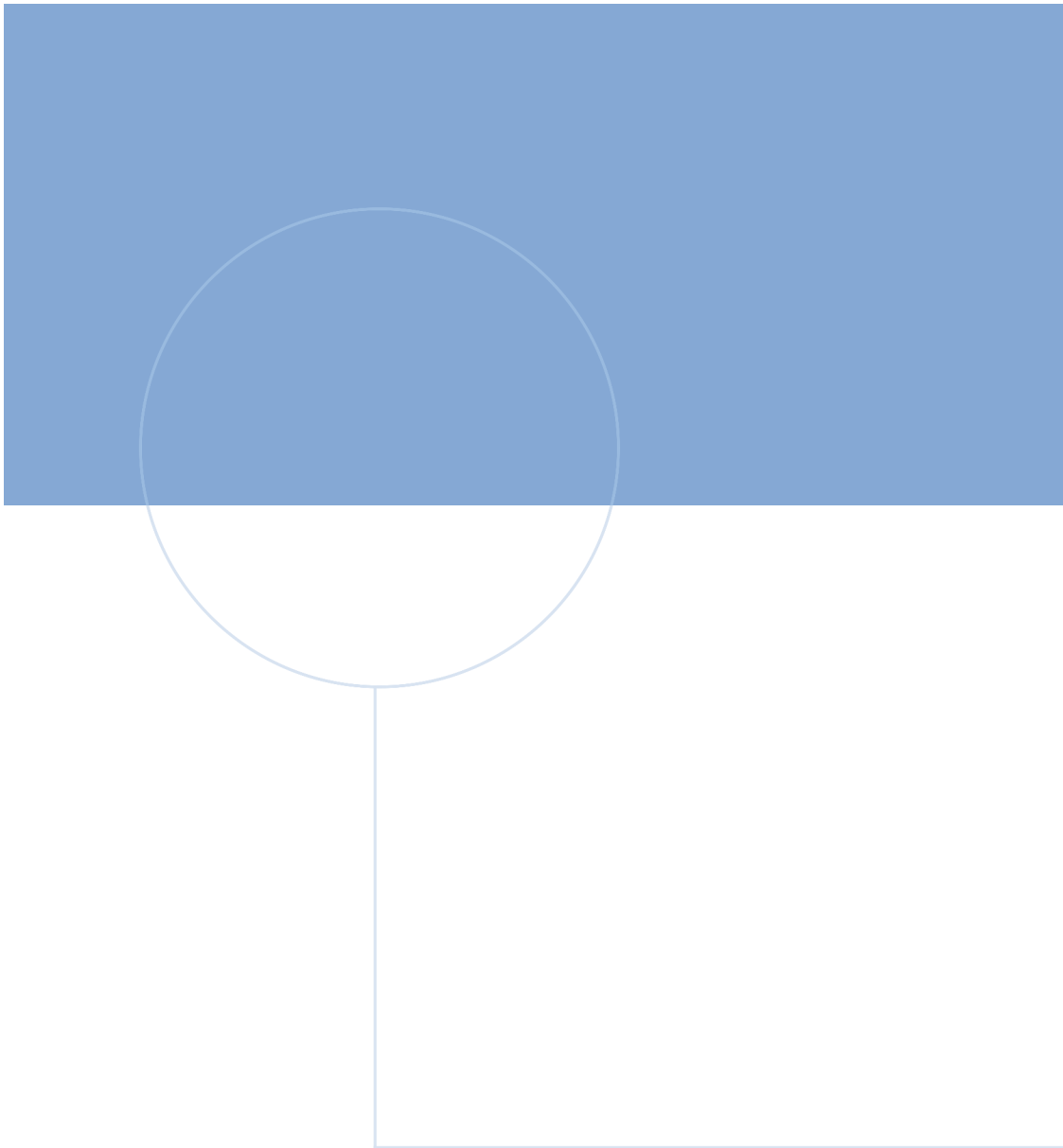
	abs_DA	BISE	DER	SOD	MJS	BA	AC	FS	ROA	ROE
abs_DA	*1.00*									
BISE	-0.02	*1.00*								
DER	-0.19	0.30	*1.00*							
SOD	0.03	-0.09	-0.09	*1.00*						
MJS	-0.01	-0.65	-0.46	0.33	*1.00*					
BA	-0.04	0.01	0.08	-0.09	0.07	*1.00*				
AC	-0.39	0.11	0.28	-0.28	-0.17	0.11	*1.00*			
FS	-0.42	0.20	0.41	-0.01	-0.21	0.10	0.51	*1.00*		
ROA	-0.44	-0.03	0.21	-0.17	-0.08	-0.01	0.36	0.30	*1.00*	
ROE	-0.21	0.02	0.14	-0.11	-0.10	-0.07	0.10	0.13	0.49	*1.00*

Notes: *According to Brooks (2019) a correlation between two variables that exceeds 0.80 indicates severe multicollinearity. The variables are defined as: abs_DA = absolute value of discretionary accruals, BISE = board independence, DER = employee representatives, SOD = share ownership by directors, MJS = directors as majority shareholders, BA = board activity, AC = audit committee, FS = firm size, ROA = return on assets, ROE = return on equity.*

Table A5: Variation Inflation Factors (VIF)

Variable	VIF	1/VIF
abs_DA	1.47	0.6792
BISE	1.84	0.5438
DER	1.50	0.6686
SOD	1.33	0.7507
MJS	2.42	0.4127
BA	1.07	0.9389
AC	1.65	0.6060
FS	1.70	0.5885
ROA	1.70	0.5870
ROE	1.35	0.7424
Mean VIF	***1.60***	

Notes: *According to Brooks (2019) a VIF index over five indicates severe multicollinearity. The variables are defined as: abs_DA = absolute value of discretionary accruals, BISE = board independence, DER = employee representatives, SOD = share ownership by directors, MJS = directors as majority shareholders, BA = board activity, AC = audit committee, FS = firm size, ROA = return on assets, ROE = return on equity.*



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