



BI Norwegian Business School - campus Oslo

GRA 19703

Master Thesis

Thesis Master of Science

The Effect of CEO Characteristics on Earnings Management Practices of Private Norwegian SMEs

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Start: 15.01.2021 09.00

Finish: 01.07.2021 12.00

MASTER THESIS

“The Effect of CEO Characteristics on Earnings Management Practices of Private Norwegian SMEs”

Exam Code:

GRA 19703

Submission Date:

01.07.2021

Assigned Supervisor:

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Program:

Master of Science in Business - Major in Accounting and Business Control

Campus:

BI Norwegian Business School, Oslo

Acknowledgements

We would like to express gratitude for the support and help we have received from our supervisor, Ignacio Garcia de Olalla López, during the completion of this thesis. We want to express our most profound appreciation for his guidance and that he has patiently answered our questions along the way. Ivar Otto Ekker from the *Centre for Corporate Governance Research (CCGR)* has granted us access to retrieve data from the CCGR database, which we greatly appreciate. The data provided from the CCGR database helped us examine the effect of CEO characteristics on earning management practices of private Norwegian SMEs.

Abstract

Managerial characteristics in financial decisions have gained more attention during the last decades. Hence, this thesis aims to investigate the effect of CEO characteristics on earnings management practices for private Norwegian small and medium-sized enterprises (SMEs). In particular, this thesis tries to examine a relationship between the CEO characteristics gender, age, tenure, board membership, and ownership on discretionary accruals, measured by the Jones model (1991), the Modified Jones model by Dechow et al. (1995), and the model by Kothari et al. (2005). We are using panel data obtained from the *Center of Corporate Governance Research* (CCGR) database, which shows Norwegian firms over the time period from 2000 to 2018. By using the three models for calculating discretionary accruals, our results provide evidence that female CEOs, older CEOs, and CEOs with high tenure tend to engage in less earnings management in private Norwegian SMEs. These findings are also proven to be robust for several model specifications. Our findings could be valuable to users of financial information and policymakers who are interested in increasing the reliability of financial reporting.

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1.0 Introduction

Financial communication is an important instrument that allows firms to manage their external relations utilizing financial and accounting information (Daniel, 2017). Traditionally, financial communication was a relevant issue for listed companies. However, today small and medium-sized enterprises (SMEs) also have to master the challenges of financial communication (Zureck, 2014). During the last decades, accounting manipulation and transparency of accounting information have been attracting the attention of researchers and practitioners (Amara et al., 2013). Thus, earnings management has become a central field for research. Earnings management is an accounting process that managers adopt to manipulate the company's earnings through accounting choices and discretionary accruals (Alqatamin et al., 2017). Generally, the chief executive officer (CEO) is viewed as the most influential person in a company. In the context of financial communication, the CEO seeks to make themselves useful to the shareholders through their ability to administrate the company and is responsible for the performance and exercising authority over the corporate decisions (Chou & Chan, 2018). For firms to succeed in creating interconnection with the external environment, it is crucial to provide the information requested by the stakeholders (Bouaziz et al., 2020). However, this responsibility and outside pressure may increase the probability of a manager's earnings management.

According to agency theory, managers are motivated to defend their interests at the expense of shareholders' interest (Jensen, 1986). Further, the upper echelons theory argues that the CEOs' characteristics and experiences can influence their decision-making and organizational outcomes (Bouaziz et al., 2020). In short, previous research shows that the characteristics of the CEO can and will impact the company's financial communication. Thus, this thesis examines if some specific CEO characteristics can influence earnings management practices, measured by discretionary accruals. In particular, our thesis tries to establish if the CEO characteristics gender, age, tenure, board membership, and ownership affect earnings management practices, measured by the Jones model (1991), the Modified Jones model (1995), and the model by Kothari et al. (2005).

Brown (1999) and Van Tendeloo and Vanstraelen (2005) states that earnings management is assumed to negatively influence the quality of financial reporting by reducing its decision usefulness. Accrual models are often used to measure the extent of earnings management under current rules and legislation. These models assume that managers use discretionary accruals, which are accruals over which the manager can exert some control, to manage earnings (Dechow et al., 1995; Healy & Wahlen, 1999). Recent research has tried to address whether managers of firms in different countries engage in earnings management, and, thus, what kind of managerial characteristics affect the decision to engage in earnings management and if these alone can explain it (Alqatamin et al., 2017; Bouaziz et al., 2020). Because of the CEOs' primary role in providing better quality accounting information, they benefit from the authority and power in many areas (Bouaziz et al., 2020). For this reason, it is of utter interest to study the different characteristics of the CEO that can facilitate the transition to entrenchment and influence the quality of financial communication.

The purpose of this study is to gain a better understanding of whether specific characteristics, such as gender, age, tenure, board membership, and ownership, influence earnings management practices. A majority of the previous empirical research on earning management rely on samples of public companies. However, it is stated that private firms' motivations to engage in earnings management are different from their public counterpart (Abdolmohammadi et al., 2010). Private firms appear to have governance issues that differ from public firms, where managers tend to see the board as an extension of their managerial responsibilities (Belot & Serve, 2015). SMEs rely strongly on the resources and skills of their CEOs, and the CEO characteristics appear to be just as crucial as firm characteristics when considering corporate decision-making. Because global trends and regulations influence private companies to a smaller degree than public companies, there may be more variation in accounting choices in private firms (Abdolmohammadi et al., 2010). The research on earning management in Norwegian firms, especially regarding the influence of managerial characteristics, is limited. We want to examine if the previous empirical findings are generalizable to firms in Norway; thus, we have limited the scope to private Norwegian SMEs. Hence, instead of looking at larger, listed firms, we find it beneficial to limit the

scope to private Norwegian SMEs because they make up the majority of all registered firms in Norway.

Using panel data over the time period from 2000 to 2018, we investigate the association between some specific CEO characteristics and earnings management practices representing 43.304 non-financial private Norwegian SMEs. This thesis contributes to the topic of earnings management by providing empirical evidence of an association between specific CEO characteristics and earnings management practices in Norwegian firms. Our results suggest that some CEO characteristics significantly affect earnings management practices and found a negative and significant relationship between the CEO gender and CEO tenure for all the models. Moreover, we found a negative and significant relationship between the CEO age for the Jones model and the Modified Jones model and a negative and significant relationship between the CEO ownership for the Modified Jones model. Further, we found no significant relationship between CEO board membership for any of the models. The variables are also proven to be robust for several model specifications, except for the variable CEO ownership. In brief, our results provide evidence that female CEOs, older CEOs, and CEOs with high tenure tend to engage in less earnings management in private Norwegian SMEs. The results of this study could be beneficial for several users of financial information such as investors, auditors, regulators, lenders, and other players in the capital market that are dependent on the financial reporting of private firms to make financial decisions in their economy (Alqatamin et al., 2017).

This thesis is structured into eight sections. Section two provides a literature review and the theoretical framework of the previous research in this field. Section three consists of the research question and our hypotheses. Moreover, the data is presented in section four. Section five describes our research methodology. The data descriptive is explained in section six and section seven reports and discusses the empirical results and limitations. In the end, section eight consists of our conclusion.

2.0 Literature Review and Theoretical Framework

Earnings management originates from a managers' choice of accounting policies and is a well-known topic in the accounting field. Healy (1985) was the first to introduce discretionary accruals to detect earnings management, where this study established earnings management as a line of investigations for researchers. In the following years, more authors viewed the issue of earnings management and looked at the motivations for such activity¹. Schipper (1989) is frequently cited by the authors and defined earnings management as "a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain" (p. 92). This article showed that earnings management could influence accounting accruals' great importance in arriving at a summary measure of firm performance. Moreover, the key study on earnings management is the study by Jones (1991), who uses discretionary accruals to measure the scope of earnings management. Further, Dechow et al. (1995) and Kothari et al. (2005) pointed out that the Jones model is misspecified for firms that experience extreme performance. They, therefore, made two additional models to cope with the limitations of the Jones model. Hence, these models are some of the most used in terms of calculating discretionary accruals.

Even though earnings management is a heavily researched field, it is defined in various forms, reflecting that researchers often have very different perceptions. Research like Healy and Walhen (1999) and Dechow and Skinner (2000) focus on the theoretical aspect of earnings management. Other researchers (Kasznik, 1999; McNichols, 2000; Peasnell et al., 2000; Schipper, 1989) provide a more empirical view, where they assume that earnings management is related to many aspects of the company, such as its role in companies' problems, financial markets, agency theory², or information asymmetry³ (Gastón et al., 2014). Newer research like (Alqatamin et al., 2017; Bouaziz et al., 2020; Rajeevan & Ajward, 2019) addresses whether managers of firms in different countries engage in earnings management. In these kinds of research, it is argued what kind of managerial characteristics affect the decision to engage in earnings management and if these alone can explain it.

¹ See DeAngelo (1986), DeAngelo (1988), McNichols and Wilson (1988), Schipper (1989) and Watts and Zimmermann (1986)

² See section 2.1.1 in Preliminary Thesis in Appendix A5 for an explanation of agency theory.

³ See section 2.1.2 in Preliminary Thesis in Appendix A5 for an explanation of information asymmetry.

The empirical literature regarding managerial characteristics on earnings management is contradictory. Thus, it is of utter interest to study if some specific characteristics of the CEO influence earnings management practices. The following sections will overview the motives to engage in earnings management, CEOs' effects on earnings management, and the effects on CEO gender, CEO age, CEO tenure, CEO board membership, and CEO ownership on earnings management.

2.1 Motives to Engage in Earnings Management

Healy and Walhen (1999) stated that "earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports. This, to either mislead some stakeholders about the underlying performance of the company or to influence contractual outcomes that depend on reported accounting numbers" (p. 368). Healy and Wahlen (1999) and Fields et al. (2001) commonly distinguish between capital markets, contracting, and regulatory motivations to engage in earnings management. Because stocks of private companies are not publicly traded, the capital markets motivation is not a significant consideration for earnings management in private firms (Abdolmohammadi et al., 2010). Contracting motivations refer to the expected outcomes from contracts among companies and their contracting parties and can occur in both listed and private firms. Regulatory motives address earnings management in response to government regulations sensitive to reported accounting numbers, where dividend policy may be a powerful motive for earnings management in private and listed firms. Thus, Diri (2017) states that three strong motivations for conducting earnings management are personal benefits for the management, misleading the stakeholders, and the stakeholders' benefit. In terms of this, private firms may have reason to engage in earnings management to respond to agency conflicts and ease the tax burden or facilitate a particular dividend pattern.

Private firms are not subject to capital market pressure, and consequently, to a need to meet earnings targets. However, they may be tempted to manage earnings to conceal financial difficulties (Garcia Lara et al., 2009). Hope et al. (2013) have observed that private firms have a lower accrual quality than their public counterparts, and Belot and Serve (2015) states that even if private firms are not subjected to capital market pressures as public firms are, it appears relevant to

identify specific motives for earnings management. In Norway, all private firms must follow the Norwegian Generally Accepted Accounting Principles (NGAAP) issued by the Norwegian Accounting Standards Board, and listed companies follow international financial reporting standards (IFRS). The NGAAP is considered less comprehensive and uses more broadly based principles than IFRS (Abdolmohammadi et al., 2010). Therefore, managers could use earnings management when it is unlikely that the firm will meet certain financial expectations, and the cost of meeting them is considered high. In this particular situation, they could use the flexibility in the NGAAP to misstate their accounting numbers. This is considered to be an acceptable way where managers can exercise accounting discretion. However, when the financial statement reflects management's desires rather than the company's underlying financial performance, such reporting becomes a problem. In terms of this, the flexible accounting standards, modern supervision, and low litigation risk may provide ample opportunities for earnings management in Norwegian firms.

2.2 CEOs Effect on Earnings Management

CEO is the highest-ranking individual in executive management, and Mackey (2008) showed that the CEO has a significant impact on the company's actual performance. Recent literature highlights the effect of CEO characteristics, including observable characteristics and behavioral aspects, on corporate decision-making. Hence, the CEO and financial reporting relation are expected as the financial statements are prepared and published by external auditors and managers (Modaresi & Nazaripour 2013, p. 100). The upper management will not only certify its company's financial reports but also take responsibility for any wrongful or misleading statements within them.

Agency theory predicts that managers are motivated by their interests and states that monitoring is crucial to evaluate their performance (Jensen & Meckling, 1976). However, it does not reveal why managers engage in earnings management in the first place. Thus, Watts and Zimmerman (1986) applied agency theory and developed the positive accounting theory (PAT), which focuses on internal contractual incentives. This theory focuses on that compensation contracts provide insight for opportunistic driven earnings management and that managers try to

influence contractual outcomes of bonus plans by exercising judgment over accounting items. Hence, shareholders use management compensation contracts to reduce agency costs and motivate managers to maximize firm value. Moreover, Hambrick and Manson (1984) stated that the central idea of the upper echelons' theory was that the organization reflects its principal CEOs.

Healy (1985) argued that managers who have incentives like bonus awards are inclined to select accounting procedures and accruals to maximize the company's value, and by this maximizing the value of the managers' bonus. According to Zhang (2019), accounting literature often looks at managers as individuals that make financial reporting decisions based on their characteristics and economic incentives. CEOs are appointed with the expectation that they will make sensible management decisions to maximize shareholder value (Armstrong et al., 2010). CEOs also take an interest in accounting numbers and profits because their compensation incentives are closely tied to reported earnings. The information in financial statements allows outsiders to measure how efficient the CEO is in fulfilling such an expectation.

2.3 Effect on CEOs Gender on Earnings Management

Gender diversity in the leading positions of a company has received attention during the last decades. Evidence shows that men and women act and behave differently, and a recent stand of the finance literature focuses on gender-based differences in corporate financial decisions. The stream of the literature suggests that the genders have distinctly different values and interests and vary in their inclination to engage in unethical business behavior (Betz et al., 1989; Croson & Gneezy, 2009). Skala (2008) indicates that CEO gender can play an essential role in overconfidence in corporate policy decisions such as financing, dividends, and corporate governance. Studies in psychology and economic experiments both suggest that women, on average, are more cautious, less aggressive, and consequently, more risk-averse than men in various decision settings.

Francis et al. (2009) concluded that female CEOs tend to report firm performance more conservatively, which implies that they are more cautious in recognizing gains compared to losses than male CEOs. Further, findings suggest that female executive directors will indicate a company with higher accounting quality, more conservative

financial reporting, and lower fraudulent misrepresentation of the financial reports (Barua et al., 2010). Na and Hong (2017) also reported that male CEOs are likely to use aggressive discretionary accruals and actual activities operations to report small positive earnings or small earnings increases. In contrast, female CEOs are not likely to engage in aggressive earnings management. Therefore, Gull et al. (2018) found that female directors and earnings management are negatively correlated. Thus, even though most previous theories show that women are less likely to engage in earning management, Hili and Affes (2012) found no association between gender diversity and earnings management, and Peni and Vähämä (2010) agree with this result.

2.4 Effect on CEOs Age on Earnings Management

Another characteristic that is thoroughly studied is the CEO age. Empirical research shows that ethical beliefs are related to the age of business professionals. Andreou et al. (2016) stated that CEO age plays an essential role in shaping firm policies and outcomes. Further, changes in personal characteristics that occur with age can also affect a CEO's behavior. Yim (2013) stated that CEO motivations may also affect a CEO's behavior and that this motivation may change with their age. Davidson et al. (2007) found that firms, where executives were approaching retirement age, had significant discretionary accruals levels in the years before retirement. Isidro and Goncalves (2011) found that earnings management increased when the CEO was older and near retirement, especially when the firm had a dual leadership structure. This is also confirmed by Dechow and Sloan (1991) and Davidson et al. (2007), who pointed to an increase in earnings management by CEOs approaching retirement.

Contrary, Peterson et al. (2001) indicate that younger business professionals show a lower standard of ethical beliefs and that older business professionals exhibit a higher standard. This is also confirmed by Twenge and Cambell (2008), who found that the younger generations tend to be more narcissistic and have higher self-esteem, and further that these characteristics can lead to more unethical behavior. Andreou et al. (2016) stated that psychological characteristics of the CEO and heterogeneous abilities change with age and that this makes older CEOs more conservative. Further, Huang et al. (2012) found that older CEOs are more likely to

be conservative when recognizing gains and are less likely to participate in earnings management. Matta and Beamish (2008) showed that when managers approach retirement age, they become more risk-averse, and Khuong and Vy (2017) found that the timeliness of the financial statements increased with older CEOs. Belot and Serve (2018), therefore, found that CEOs' age is negatively correlated with the magnitude of discretionary accruals, and Ali and Zhang (2015) agree with this result concerning the significant and negative relation between CEO age and earnings management.

2.5 Effect on CEOs Tenure on Earnings Management

Further, the tenure of the CEO has been studied by several researchers and is contradicting. A CEO with long tenure has more experience, which allows them to provide the directors with important information about the company and its commercial environment (Cai & Sevilier, 2012). Hence, a long-term CEO in the company benefits from several advantages to achieve his or her strategy and can build relationships with the company's various stakeholders. Kalyta (2009) found evidence of income-increasing earnings management in the pre-retirement period, mainly when CEO compensation is based on firm performance. Verkerk (2012) agrees with this result and states that CEOs have less time to prove themselves and, therefore, they manage earnings upward in the last year of their tenure.

On the other hand, Pourciau (1993) found that CEOs in the first year of their work were most likely to maximize reported earnings because new CEOs sought to show that the financial performance of the previous CEO was inferior. Oyer (2008) argued that CEOs avoid reporting a reduction in earnings at the beginning of their services because they may classify as low-ability managers. Further, it is shown that long-tenured CEOs report earnings less aggressively than short-tenured ones. Thus, Ali and Zhang (2015) found that newly appointed CEOs have been proved to use real and accrual earnings management to increase earnings, specifically in the early three years.

2.6 Effect on CEOs Board Membership on Earnings Management

When the CEO is also a board member, they have more power in both the board and the organization because of their authority over all aspects of its operations

(Yang et al., 2018). Adams et al. (2005) argue that the CEO as a board member influences decision-making, and Yang and Zhao (2014) argue that this duality provides relevant business benefits by improving the acquisition and transmission of information and facilitating faster decision-making. Further, when the CEO is not a board member, he will have reduced contact with the board, limiting the opportunities for optimizing social connections that can lead to personal benefits. Hence, when the CEO is also a board member, it has an essential effect on the board that can be used to obtain excessive compensation. Contrary, to be a CEO and a board member simultaneously is a greater assurance that both the board and the management do not challenge or constrain decisions. Thus, Xie et al. (2003) advance that the CEOs' board membership is not related to current discretionary accruals.

2.7 Effect on CEOs Ownership on Earnings Management

CEO's ownership is also an essential factor that may affect a CEO's ability and willingness to manipulate their firm's reported earnings. CEO ownership means the percentage of shares owned by the CEO. It suggests that, as the percentage of shares held by CEOs increases, their incentive to engage in accounting misbehavior also increases (Sharma & Kuang, 2014). Thus, more managerial ownership may encourage managers to use discretionary accruals to improve earnings (Yang et al., 2018). Several studies have provided empirical evidence that firms with higher managerial ownership are associated with more earnings management activities (Al-Fayoumi et al., 2010; Mitani, 2010). This is because the greater ownership held by the CEOs' will provide them with deeper entrenchment and, therefore, more room for opportunistic behavior.

On the other hand, while most prior research documents a positive relationship between CEO ownership and earnings management, others provide a counter-argument that a CEO with a low level of ownership will engage more in earnings management. O'Callaghan et al. (2018) found a negative association between managerial ownership and discretionary accruals. They argued that CEOs' low percentage of ownership provides them with an incentive to alter earnings, especially when their firms face poor financial performance.

3.0 Research Question and Hypotheses

3.1 Research Question

The study of earnings management is of enormous interest, and a vast amount of literature has emerged in this area. The subject is a worldwide phenomenon, and companies in different countries have different incentives to manage earnings. In the context of financial communication, the CEO is responsible for the performance and exercising authority over the corporate decisions (Chou & Chan, 2018). This responsibility and outside pressure may increase the probability of a manager's earnings management. Thus, it is stated that the characteristics of the CEO can and will influence earning management practices. From previous literature by Brown (1999) and Van Tendeloo and Vanstraelen (2005), we also know that earnings management is assumed to influence the quality of financial reporting negatively. In terms of this, it is of great interest to study if different characteristics of the CEO affect earning management practices, and thus, influence the quality of financial reporting. We, therefore, define the following research question:

How do some specific CEO characteristics affect earnings management practices of private Norwegian SMEs?

The available data for private SMEs is more limited since the smaller companies do not have the same reporting requirements as larger listed firms. However, we wanted to limit the scope of this thesis to private Norwegian SMEs for several reasons. Firstly, a significant part of empirical research in this area has historically been conducted on listed companies (Fields et al., 2001; Healy & Wahlen, 1999). However, private firms appear to have governance issues that differ from public firms, where managers tend to see the board as an extension of their managerial responsibilities (Belot & Serve, 2015). SMEs rely strongly on the resources and skills of their CEOs, and the CEO characteristics appear to be just as important as firm characteristics when considering corporate decision-making. Consequently, in SMEs, the top management is likely to be involved in many activities of the firm. Further, because global trends and regulations influence private companies to a smaller degree than public companies, there may be more variation in accounting choices in private firms (Abdalmohammadi et al., 2010). Secondly, private firms

make up the majority of all registered firms in Norway, and SMEs in Norway make up more than 99% of all companies and 47% of the employees in the private sector (NHO, 2021). Together, they account for almost half of the annual value creation in the country. Thus, by limiting the scope to private Norwegian SMEs, it could be more advantageous to detect the influence of the CEO characteristics on earnings management practices and compare them with other newly conducted studies.

In addition, research that has investigated the impact of CEO characteristics on earnings management practices, measured by discretionary accruals, is very contradicting. Hence, the study of how management incentives and characteristics affect private companies is essential, and despite its relevance, it is not well documented (Coppens & Peek, 2005). Zang and Wiersema (2009) show the importance of CEO characteristics to avoid reporting errors in accounting and, thus, preserve the interest of the shareholders. Hence, we want to study CEO characteristics in Norwegian SMEs because these SMEs report a specific ownership structure (NHO, 2021). Female managers are also statistically more represented in the SME population than larger listed firms (Faccio et al., 2016). This is of relevance, because we want to examine the effect of gender on earnings management practices. In terms of this, we find it relevant and interesting to look at how the CEO characteristics influence earnings management practices for private firms in Norway. In particular, we want to find out if previous empirical findings conducted in other countries are generalizable in Norway, where ethical decisions, sound accounting practices, gender diversity, and equality in the labor market have had a significant focus in the last decades.

3.2 Hypotheses

The main objective of this study is to test how specific CEO characteristics affect earnings management practices. Hence, the hypotheses are developed to measure the effect of CEOs' characteristics on earnings management, measured by the companies' discretionary accruals from Jones model (1991), Modified Jones model (1995), and model by Kothari et al (2005). Following Belot and Serve (2015) and Bouaziz et al. (2020), we have chosen to use the absolute values of discretionary accruals as our proxy. We want to study the general propensity to manage earnings. Therefore, our hypotheses will not make assumptions regarding the direction of earnings manipulation.

The empirical literature presented above represents an association between gender and corporate financial decisions, emphasizing that women are more ethical and more risk-averse than men. In terms of this, studies have shown that women are less likely to engage in aggressive earnings management, less likely to manage the accounting results and that firms run by women tend to have a higher earnings quality. Following Alqatamin et al. (2017), Belot and Serve (2015), and Bouaziz et al. (2020), we expect a negative relationship between the CEO's gender and earnings management practices.

H1: *The presence of female CEOs negatively affects earnings management practices*

The previous literature regarding CEO age on earnings management practices is contradicting. However, a large proportion of prior studies represent a positive association between age and ethical behavior, emphasizing that older people are more ethical. In terms of this, the psychological changes in age may make older CEOs less motivated to manage earnings since they are more likely to fear risk factors. Following Bouaziz et al. (2020), we expect a negative relationship between the CEO's age and earnings management practices.

H2: *CEO age negatively affects earnings management practices*

Furthermore, the empirical literature regarding CEO tenure is also very contradicting. Even though some studies found that CEOs with longer tenure are more likely to use their power to manipulate the accounting results, several studies have found a negative relationship between CEO tenure and earnings management. CEOs with short tenure often maximize reported earnings. After all, they sought to show that the performance from the previous CEO was lacking or report a reduction in earnings because they may classify as low-ability managers. Following Chou and Chan (2018) and Gull et al. (2018), we expect a negative relationship between the CEO's tenure and earnings management practices.

H3: *CEO tenure negatively affects earnings management practices*

The CEO board membership is when a person is both the CEO and a board member in the same company. A majority of the previous literature regarding CEO board membership states that when the CEO is also a board member, it influences the decision-making, which can be used to obtain excessive compensation. Following Bouaziz et al. (2020), we expect a positive relationship between the CEO's board membership and earnings management practices.

H4: *CEO board membership positively affects earnings management practices*

Lastly, the CEO ownership shows the percentage of shares owned by the CEO. Empirical literature states that if the percentage of shares held by the CEO increases, the incentive to engage in accounting misbehavior also increases, and that more managerial ownership may encounter managers to use discretionary accruals to improve earnings. Following Chou and Chan (2018) and Qawasmeh and Azzam (2020), we expect a positive relationship between the CEO's ownership and earnings management practices.

H5: *CEO ownership positively affects earnings management practices*

4.0 Data

4.1 Data Source and Sample

We use secondary data retrieved from *The Centre for Corporate Governance Research* (CCGR) database in our thesis. CCGR aggregates data from two primary sources: *Experian AS* and the *National Register Office (NRO)* (Abdolomohammadi et al., 2010). This unique database consists of detailed accounting and governance information for both listed and private Norwegian firms from 1994 to 2018. The CCGR database is unique for this purpose because Norway has a universal financial reporting requirement for limited liability companies. There are no size limits as to which firms must disclose audited financial statements, and there are detailed requirements as to what kind of information must be disclosed in the notes. This means that detailed audited information is available for all limited liability companies.

The data received from CCGR is classified as secondary panel data. Hence, this data consists of repeated observations over a given time period for the same firm (Arellano, 2003). The reason for using panel data is that it gives a more accurate inference of model parameters and that it has a greater capacity for capturing the complexity of human behavior (Hsiao et al., 1995). Since we want to examine different CEO characteristics, the panel data model is the most suited method. The initial data sample contained repeated observations on 568.481 different firms and a total of 4.451.774 observations over the time period from 2000 to 2018.

4.2 Data Processing

Bøhren (2011) classifies a large Norwegian company as having "either 50 employees or both 80 million NOK in operating revenue and at least 80 million NOK in assets" (p.37). Following this definition, we want to exclude large firms from our data sample, with the purpose of looking at small and medium-sized entities. The reason for excluding large firms is that small and medium-sized companies in Norway make up more than 99% of all companies (NHO, 2021). In terms of this, we believe that it is more relevant and interesting to look at the private SME market in Norway, as there is usually a more significant difference in the

financial communication quality. Thus, we exclude all firms with operating revenue and assets larger than 80 million NOK in our dataset. After studying our data sample, we observed that the smallest companies caused some form of noise to our calculations. As almost every Norwegian company must publish its financial reports, there will inevitably be some companies with improbable numbers. We have, therefore, decided to remove the smallest companies in the sample by having a threshold of two million in total assets and two million in total operating revenue.

We chose to Winsorize all the accounting variables at the 1st and 99th percentiles to deal with the extreme outliers' problem. This operation also prevents us from eliminating an unnecessary number of firms. Following Abdolomohammadi et al. (2010), we eliminated all firms listed on Oslo Stock Exchange and Oslo Axess. Further, we removed all other company types other than "AS" (aksjeselskap) and "ASA" (allmennaksjeselskap). Next, we removed all subsidiaries to avoid biases due to influence by the parent company. In addition, we also removed companies that were not independent (Abdolomohammadi et al., 2010; García de Olalla López, 2014). Financial institutions like banks, debt collectors, and insurance companies were also excluded, following Abdolomohammadi et al. (2010) and García de Olalla López (2014). This is because these industries often have a highly regulated regime, and the companies are not able to choose which accounting principles to apply. We also excluded companies that had less than three years observed, as we are dealing with lagged values for many of our calculations. Lastly, we excluded firms with inconsistent accounting. These are firms where total assets and total operating revenue are zero, negative total fixed assets, negative total current assets, negative other long-term liabilities, negative dividends, negative depreciation, and negative total current liabilities.

The data cleaning process left us with a final data sample of 131.012 firm-year observations representing 43.304 non-financial private Norwegian SMEs.

5.0 Methodology

In our study, earnings management is evaluated by discretionary accruals because the previous literature relies on discretionary accruals to detect such a practice. As stated above, we are using panel data, and after the data cleaning process, we are left with an unbalanced dataset. Hence, we adopt the mainstream research design of earnings management studies by regressing a measure of discretionary accruals on a set of independent and control variables. We will measure the company's earnings management by using the absolute value of the discretionary accruals. The considerations and model estimation process are described in *Section 5.1*. Moreover, the dependent variable, measured as discretionary accruals, and our independent and control variables are detailed in *Section 5.2*. Thus, since we want to examine the relationship between CEOs' characteristics and earnings management practices, we propose to estimate the following model:

$$\begin{aligned}
 DA_{it} = & \beta_0 + \beta_1 GEN_{it} + \beta_2 AGE_{it} + \beta_3 TEN_{it} + \beta_4 MEMB_{it} \\
 & + \beta_5 OWN_{it} + \beta_6 SIZE_{it} + \beta_7 ROA_{it} + \beta_8 LEV_{it} \\
 & + \beta_9 GROW_{it} + \beta_{10} FIRM_{it} + \sum \beta_k INDUSTRYk_{it} \\
 & + \sum \beta_m YRm_{it} + u_i + \varepsilon_{it}
 \end{aligned}$$

In the model, i represents the firm index, and t represents time. Further, DA_{it} represents the dependent variable, which is discretionary accruals measured from Jones Model (1991), Modified Jones Model (1995), and the model by Kothari et al. (2005). The dependent variable takes the form of the absolute value of discretionary accruals for firm i in year t and is our measure of earnings management in year t . Moreover, we have our independent variables, which are the CEO characteristics. These consist of CEO *gender* (GEN), CEO *age* (AGE), CEO *tenure* (TEN), CEO *board membership* (MEMB), and CEO *ownership* (OWN). Furthermore, we have our firm control variables. Following the previous literature, we propose these control variables to be *firm size* (SIZE), *profitability* (ROA), *leverage* (LEV), *growth* (GROW), and *firm age* (FIRM). Next, we have included $k-1$ dummy variables for k industries to control for industry differences, where each k represents one two-digit industry code. We also include YRm_{it} , which is an indicator variable that equals 1 if the observation of firm i is from year m , and 0 otherwise. Finally, u_i represents the un-observed individual-specific effect, and ε_{it} is the un-observed random error term.

5.1 Considerations and Model Estimation

To achieve consistent and efficient estimates, it is important to consider several considerations. Empirical research in the field of corporate governance and accounting raises endogeneity concerns. Hence, endogeneity leads to biased and inconsistent parameter estimates that affect the reliable inference of the study. In terms of this, endogeneity can potentially distort the impact of the CEO in the results due to omitted variables, simultaneous causality bias, or sample selection bias. Thus, the endogeneity problem can be considered essential when estimating a proper model for our study. There are different ways to address this problem, and one of the most used approaches is an instrumental variable or panel data (Stock & Watson, 2015). For the instrument variable to be valid, it must satisfy the instrument relevance condition and the instrument exogeneity condition⁴. For this purpose, it can be challenging to find an instrument variable that satisfies both of the conditions. Thus, we have chosen to use panel data to mitigate the endogeneity problem.

In order to find the most appropriate panel estimation method, different model specifications were necessary. Hence, the assumptions of exogeneity, homoscedasticity, and non-autocorrelation helped us choose between a pooled OLS, a fixed-effect model, or a random-effect model, as seen from the illustration in *Appendix A3*. From *Appendix A4*, we can see that the *Fisher homogeneity test (F-test)*⁵ shows that there is a presence of heteroskedasticity in our residuals. This is a violation of the assumption of homoscedasticity, meaning that pooled OLS is not recommended. Further, the *Wooldridge serial correlation autocorrelation test*⁶ indicates a strong positive autocorrelation. This is a violation of the non-autocorrelation assumption, meaning that a fixed effect model or a random model is more suitable. Moreover, the *Hausman specification test*⁷ (Hausmann, 1978) shows that the probability value of H0 is less than 0.05 for the three models,

⁴ The instrument relevance condition states that: $\text{corr}(Z_i, X_i) \neq 0$, and the instrument exogeneity condition states that: $\text{corr}(Z_i, u_i) = 0$ (Stock & Watson, 2015)

⁵ The Fisher test specifies that H0: the model with no independent variables fits the data as well as the model, and H1: the model fits the data better than the intercept-only-model. If the p-value is less than 0.05, we reject H0.

⁶ The Wooldridge test specifies that H0: no first-order autocorrelation, and H1: first-order autocorrelation (Drukker, 2003). If the p-value is less than 0.05, we reject H0.

⁷ The Hausmann-test specifies that H0: α_i are not correlated with X_{it} and H1: α_i are correlated with X_{it} (Maddala, 2009). If the p-value is less than 0.05, we reject H0.

meaning that the preference of the fixed effects model is accepted, and the random effect model is rejected. However, according to Verbeek (2012), the result from the Hausman test should be interpreted with caution, and Wooldridge (2016) argues that quasi-time invariant variables or time-invariant variables, which means variables that are constant over time for all i , would be omitted in a fixed-effects model. This thesis aims to estimate the impact of CEO characteristics on earnings management practices, and both the CEO gender and CEO board membership are dummy variables. Thus, we can argue that a random-effect model would be more suitable. Finally, the *Breusch-Pagan heteroskedasticity test* (Breusch & Pagan, 1980), also called the *Lagrange-Multiplier test (LM-test)*⁸, indicates the presence of heteroskedasticity in all our models. The results in *Appendix A4* show that heteroskedasticity and serial correlation are present in the models. Thus, the appropriate estimator when dealing with both heteroskedastic error structures and error autocorrelation is the random effect model.

5.2 Variable Measurement

Empirical research has tried to examine the determinants of earnings management, and several studies have concluded that both company- and managerial characteristics can explain some of this variation. In our study, the dependent variable is earnings management, measured by the company's discretionary accruals from the Jones model (1991), the Modified Jones model (1995), and the model by Kothari et al. (2005). Further, our independent variables will be the CEO characteristics, gender, age, tenure, board membership, and ownership. Moreover, other alternative explanations for earnings management have been offered in the literature, and from previous theories⁹, we find other factors that explain earnings management. Hence, to control for the influence of other external factors that may influence our dependent variable, it is necessary to apply several control variables. Thus, the control variables will be the company characteristics; firm size, profitability (ROA), leverage, growth, and firm age. *Appendix A1* shows a detailed specification of the items obtained from CCGR, and *Appendix A2* shows a summary table of the used variables and calculations.

⁸ The Breusch-Pagan test states that H0: homoscedasticity ($\alpha = 0$), and H1: heteroscedasticity ($\alpha \neq 0$) (Park, 2011). If the p-value is less than 0.05, we reject H0.

⁹ See agency theory (Jensen & Mecling, 1976), signaling theory (Ross, 1977), positive accounting theory (Watts & Zimmermann, 1986), and the stakeholder theory (Freeman, 2015).

5.2.1 Dependent Variable: Earnings Management

Our dependent variable is earnings management, measured by discretionary accruals. The empirical literature relies on discretionary accruals to detect earnings management practices. More specifically, we use cross-sectional models of accruals proposed by Jones (1991), Dechow et al. (1995), and Kothari et al. (2005) to estimate discretionary accruals and to enhance the robustness of our results.

Total Accruals

Before we introduce the models, the calculation of the total accruals will be shown. The vast majority of private liability firms in Norway are not required to publish cash flow statements. Thus, consistent with previous literature, we rely on the balance sheet to estimate total accruals (TAC) and cash flows from operations (Abdolmohammadi et al., 2010; Burgstahler et al., 2006). Changes in proposed dividends are subtracted from short-term liabilities since proposed dividends may be classified as short-term debt in Norway. Following Abdolmohammadi et al. (2010), we estimate total accruals for firm i in year t .

$$TAC_{it} = \Delta CA_{it} - \Delta CASH_{it} - \Delta CL_{it} + \Delta DEBT_{it} + \Delta DIV_{it} - \Delta DEP_{it} - \Delta NDTA_{it}$$

For a given firm i , the model consists of total accruals in year t (TAC). Further, we have change in current assets in year t (CA), change in cash and cash equivalents in year t (CASH), change in current liability in year t (CL), change in short term debt in year t (DEBT), change in proposed dividends in year t (DIV), change in depreciation and impairments in year t (DEP), and change in net deferred tax assets in year t (NDTA).

Jones Model (1991)

The Jones model from 1991 proposes a model that relaxes the assumption that non-discretionary accruals are constant. This model attempts to control for the effect of changes in a firm's economic circumstances on non-discretionary accruals. The results in this model indicate that the model successfully explains around one-quarter of the variation in total accruals. However, this model assumes that revenues are non-discretionary (Dechow et al., 1995). Hence, a limitation is that if earnings are managed through discretionary revenues, then the Jones model will remove part of the managed earnings from the discretionary accrual proxy.

Model 1: Jones Model (1991)

$$\frac{TAC_{it}}{TA_{it-1}} = \alpha_1 \left(\frac{1}{TA_{it-1}} \right) + \alpha_2 \left(\frac{\Delta REV_{it}}{TA_{it-1}} \right) + \alpha_3 \left(\frac{PPE_{it}}{TA_{it-1}} \right) + \varepsilon_{it}$$

For a given firm i , the model consists of total accruals in year t (TAC) scaled by lagged total assets (TA). Revenues in year t less revenues in year $t-1$ (ΔREV) scaled by lagged total assets. Gross property, plant, and equipment in year t (PPE) scaled by lagged total assets and the measurement error in the year t (ε). All variables are winsorized at 1% and 99% percentiles to control for the possible effect of outliers.

Modified Jones Model proposed by Dechow et al. (1995)

An upgraded version of the Jones model is called the Modified Jones model from 1995 by Dechow et al. This modification was designed to eliminate the conjectured tendency of the Jones model to measure discretionary accruals with an error when discretion is exercised over revenue. In this modified model, non-discretionary accruals are estimated during the event period, which means periods in which earnings management is hypnotized. The only adjustment relative to the original Jones model is that the change in revenues is adjusted for the change in receivables in the event period. The model subtracts changes in net account receivables from revenue because it can be seen as a discretionary item that is easier to manipulate by management than revenue. This adjustment is applied to decrease the measurement error of discretionary accruals when the discretion is over sales. Thus, the Modified Jones model also implicitly assumes that all changes in credit sales in the event period results from earnings management. If this modification is successful, then the estimate of earnings management should no longer be biased toward zero in samples where earnings management has taken place through the management of revenues.

Model 2: Modified Jones Model (1995)

$$\frac{TAC_{it}}{TA_{it-1}} = \alpha_1 \left(\frac{1}{TA_{it-1}} \right) + \alpha_2 \left(\frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{it-1}} \right) + \alpha_3 \left(\frac{PPE_{it}}{TA_{it-1}} \right) + \varepsilon_{it}$$

For a given firm i , the model consists of total accruals in year t (TAC) scaled by lagged total assets (TA). Revenues in year t less revenues in year $t-1$ (ΔREV) subtracting changes in net account receivables (ΔREC) scaled by lagged total assets. Gross property, plant, and equipment in year t (PPE) scaled by lagged total assets and the measurement error in the year t (ε). All variables are winsorized at 1% and 99% percentiles to control for the possible effect of outliers.

Model by Kothari et al. (2005)

Dechow et al. (1995) and Guay et al. (1996) state that previous research shows that the Jones model and the modified Jones model are severely misspecified when applied to stratified-random samples of firms. Hence, we will also use the model by Kothari et al. (2005). This model is based on the intuition that accruals correlate with firm performance. It examines properties of discretionary accruals adjusted for a performance-matched firm's discretionary accruals, where matching is one of the bases of a firm's return on assets and industry memberships.

Model 3: *Kothari et al. (2005)*

$$\frac{TAC_{it}}{TA_{it-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{TA_{it-1}} \right) + \alpha_2 \left(\frac{\Delta\text{REV}_{it} - \Delta\text{REC}_{it}}{TA_{it-1}} \right) + \alpha_3 \left(\frac{PPE_{it}}{TA_{it-1}} \right) + \alpha_4 \text{ROA}_{it} + \varepsilon_{it}$$

For a given firm i , the model consists of a constant term (α_0). The reason for incorporating a constant term is that it provides additional control for heteroskedasticity beyond what is provided by scaling with lagged total assets (Abdolmohammadi et al., 2010). Further, we have total accruals in year t (TAC) scaled by lagged total assets (TA). Revenues in year t less revenues in year $t-1$ (ΔREV) subtracting changes in net account receivables (ΔREC) scaled by lagged total assets. Gross property, plant, and equipment in year t (PPE) scaled by lagged total assets. Following Abdolmohammadi et al. (2010) and Kothari et al. (2005), this model incorporates return on assets in period t (ROA) to control for the movements in accruals related to normal performance. Lastly, we have the measurement error in the year t (ε). All variables are winsorized at 1% and 99% percentiles to control for the possible effect of outliers.

5.2.2 Independent Variables: CEO Characteristics

To examine if some specific CEO characteristics can affect earnings management practice, we have chosen several characteristics as our independent variables. Following previous literature (Alqatamin et al., 2017, Bouaziz et al., 2020; Qawasmeh and Azzam, 2020), we will use CEO gender, CEO age, CEO tenure, CEO board membership, and CEO ownership as our independent variables. Thus, we expect a relationship between earnings management practices and the CEO characteristics:

CEO Gender (GEN) = *Dummy variable taking the value 1 if the CEO is female, and 0 otherwise*

CEO Age (AGE) = *Current time period t minus the CEO birth year*

CEO Tenure (TEN) = *The number of years since the appointment of the CEO in the current company*

CEO Board Membership (MEMB) = *Dummy variable equal to 1 if the CEO sits on the board of directors, and 0 otherwise*

CEO Ownership (OWN) = *The percentage of shares owned ultimately by the CEO at the beginning of the year*

5.2.3 Control Variables: Firm Characteristics

Consistent with prior literature, CEO characteristics are not the only determinant for earnings management. Hence, we add several firm-specific characteristics that are known to correlate with discretionary accruals. Following (Abdolmohammadi et al., 2010; Belot & Serve, 2015; Bouaziz et al., 2020), we also analyze the firm variables: firm size, profitability (ROA), leverage, growth, and firm age as our control variables.

Firm Size

The relationship between firm size and earnings management remains ambiguous. In addition, the firm size is essential to affect the quality of reported information. The size of the company varies which is why the results of the studies that relate to

the relation between the size of the companies and the earnings management measured by discretionary accruals are numerous. The studies by Barton and Simko (2002) and Dechow and Skinner (2000) found that larger firms use accounting manipulation more than other firms. However, Jeong-Bon et al. (2003) argue that there is a negative relationship between firm size and earnings management. Dechow and Dichev (2002) stated that they posit that larger firms have more stable and predictable operations, and therefore they expect them to report fewer accruals. Following Abdolmohammadi et al. (2010) and Bouaziz et al. (2020), we define firm size as the *size of firm i* in year *t*, measured as the natural logarithm of *total assets* for firm *i* at the end of year *t*.

$$\text{Firm size (SIZE)}_{it} = \ln(\text{Total assets}_{it})$$

Profitability

The ROA ratio is used to control the accounting performance of the company. This ratio considers the volatility of the firm's operating revenues because it can be expected to cause some estimation errors in accruals. Dechow and Dichev (2002) found that earnings management quality is lower for companies with higher ROA. In addition, Alzoubi (2018) and Barua et al. (2010) document a negative association between ROA and discretionary accruals. At the same time, Lopes (2018) found that discretionary accruals are significantly and positively correlated with firm performance. Hence, this measure of performance may be influenced by the accounting manipulations made by the CEO, and it shows how the firm can generate earnings with its available assets. Following Abdolmohammadi et al. (2010), we define profitability as *return on assets* for firm *i* in year *t*, measured as *net income before interest, taxes, and extraordinary items* scaled by *average total assets*.

$$\text{Profitability (ROA)}_{it} = \frac{\text{Net income before interest, taxes, and extraordinary items}_{it}}{\text{Average total assets}_{it}}$$

Leverage

Further, it can be advantageous to include some variables to capture the firm's financial distress situations. The association between financial leverage and discretionary accruals has been reported by many researchers and suggests that firms facing financial difficulties report larger discretionary accruals (Zouari et al., 2012). A company's debt can have an ambiguous effect on earnings management,

and Jiang et al. (2008) found a negative relationship between debt and earnings management. Following Abdolmohammadi et al. (2010), we define leverage as the *leverage ratio* for firm i in year t , measured as *interest-bearing debt* scaled by *total assets*, both measured at the end of year t .

$$\mathbf{Leverage (LEV)}_{it} = \frac{\mathbf{Interest\text{-}bearing\ debt}_{it}}{\mathbf{Total\ assets}_{it}}$$

Growth

Belot and Serve (2015) state that they assume that rapidly growing firms are more likely to report noisier accruals because the companies invest in anticipating future sales. Alzoubi (2018) found a positive association between discretionary accruals and growth opportunities. Further, Roychowdhury (2006) argues that growth firms are likely to be under more pressure to meet the earnings threshold. Therefore, he claims that these companies are more inclined to engage in earnings management. Hence, he found that there is a positive relationship between growth opportunities and earnings management. On the other hand, Robin and Wu (2015) found no significant difference between high-growth firms and low-growth firms in relation to discretionary accruals. Following Abdolmohammadi et al. (2010), we define growth as *growth in revenue* for firm i in year t , measured as the *average value of one-year revenue growth*.

$$\mathbf{Growth (GROW)}_{it} = \frac{\mathbf{Revenue}_{it}}{\mathbf{Revenue}_{it-1}} - 1$$

Firm Age

Older companies can improve their financial reporting practices over time and improve their reputation and image in the market. Based on previous research, older firms tend to have a lower level of earnings management than newly created firms (Bassiouny, 2016), and Liu et al. (2018) found a negative relationship between firm age and earnings management. Following Bouaziz et al. (2020), we define *firm age* as the number of years of existence of the company since its creation.

$$\mathbf{Firm\ age (FIRM)}_{it} = \mathbf{Years\ of\ existence\ of\ the\ company\ since\ its\ creation}$$

6.0 Descriptive Statistics

This section will be presenting our descriptive statistics. *Table 1* summarizes the descriptive statistics for the models, the CEO characteristics, and the firm control variables. Further, *Table 2* details the dichotomous variables. Moreover, *Table 3* shows the correlation matrix and variance inflation factor coefficients (VIF). As previously mentioned, our sample is unbalanced, which is the reason that several of the variables have a lower number of observations than the total sample size.

Table 1: Descriptive Statistics

Table 1 shows the descriptive statistics, where the information provided covers the *number of observations* (N), *estimated mean value* (MEAN), *standard deviation* (SD), the *minimum value of each variable* (MIN), and the *maximum value of each variable* (MAX). *DA Jones* is the absolute value of discretionary accruals as a measure of the degree of earnings management using the original Jones model (1991). *DA Modified* is the absolute value of discretionary accruals as a measure of the degree of earnings management using the Modified Jones model (1995). *DA Kothari* is the absolute value of discretionary accruals as a measure of the degree of earnings management using the model by Kothari et al. (2005). *CEO gender* (GEN) is a dummy variable taking the value 1 if the CEO is female, and 0 otherwise. *CEO age* (AGE) is measured as the current time period t minus the CEO birth year. *CEO tenure* (TEN) is the number of consecutive years that the current CEO has been employed as CEO. *CEO board membership* (MEMB) is a dummy variable taking the value 1 if the CEO sits on the board of directors, and 0 otherwise. *CEO ownership* (OWN) is the percentage of shares owned ultimately by the CEO at the beginning of the year. *Firm size* (SIZE) is measured by the natural logarithm of total assets. *Profitability* (ROA) is measured as return on assets, which is net income before interest, taxes, and extraordinary items scaled by average total assets. *Leverage* (LEV) is measured as interest-bearing debt scaled by total assets. *Growth* (GROW) is measured as the average value of one-year growth in revenue. *Firm age* (FIRM) is measured as the years of existence of the company since its creation.

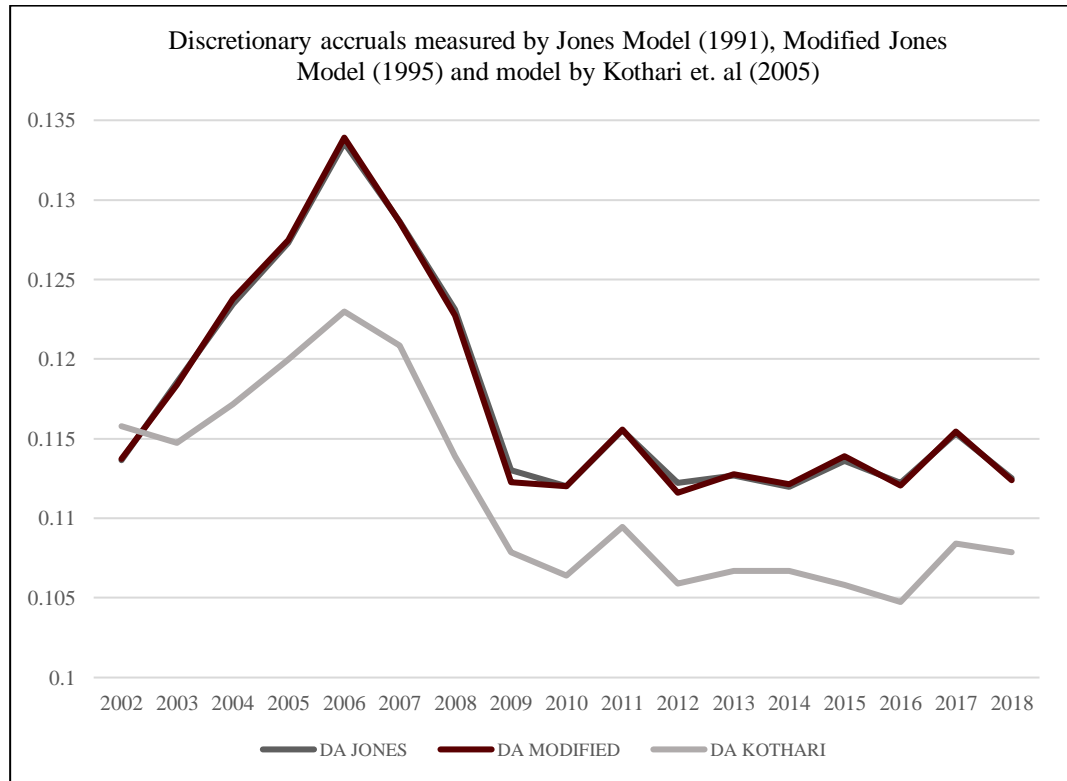
	N	MEAN	SD	MIN	MAX
Dependent variable:					
DA Jones	131 012	0.1174	0,1411	0,0000	2,5311
DA Modified	131 012	0,1174	0,1305	0,0000	2,6057
DA Kothari	101 825	0,1106	0,1305	0,0000	2,6057
Independent Variables:					
CEO Gender (GEND)	120 987	0,1331	0,3397	0	1
CEO Age (AGE)	120 985	49,5189	10,0433	19	90
CEO Tenure (TEN)	123 503	8,1756	5,7728	0	24
CEO Board Member (MEMB)	123 503	0,7704	0,4206	0	1
CEO Ownership (OWN)	123 503	0,4449	0,3888	0	1
Firm Control Variables:					
Firm Size (SIZE)	131 012	15,6196	0,7580	14,5240	17,7899
Profitability (ROA)	131 012	0,1402	0,1813	-0,3149	0,7530
Leverage (LEV)	131 012	0,3494	0,2565	0	1
Growth (GROW)	124 469	0,0872	0,3397	-0,7515	1,8496
Firm Age (FIRM)	129 006	14,6104	11,2500	1	65

Table 2: Summary Statistics for the Dichotomous Variables

Variables	Modality	Frequency	Percentage
CEO Gender (GEND)	0	104 884	86,69 %
	1	16 103	13,31 %
CEO Board Member (MEMB)	0	28 354	22,96 %
	1	95 149	77,04 %

The Jones model (1991), Modified Jones model (1995), and the model provided by Kothari et al. (2005) serve as our dependent variables. Discretionary accrual is the amount of assets or liabilities that are not mandatory but is recorded in the system, which will be realized later when settled. As previously stated, we are using the absolute value of discretionary accruals as a measure of the degree of earnings management. From *Table 1*, we observe that the minimum earnings management according to all the models are 0, and the maximum values are 2.53, 2.61, and 2.61, respectively. The mean values are 0.1174, 0.1174, and 0.1106, respectively, and the standard deviations are 0.1411, 0.1305, and 0.1305, respectively. The reported mean values are similar to previous research like Bouaziz et al. (2020) and Alqatamin et al. (2017).

Illustration 1: Average Discretionary Accruals Measured by Jones model (1991), Modified Jones model (1995), and model by Kothari et al. (2005).



From *illustration 1*, we can see that the average discretionary accruals from the Jones model and Modified Jones model are almost identical and that the model by Kothari et al. reports slightly lower values. We also observe that the discretionary accruals are quite volatile in all of the models. Noticeable high or low values in specific years often reflect some market- and policy shocks and could be explained by events such as the introduction of the *realization principle* that came in 2005, the *tax reform* introduced in 2006, or the *financial crisis* that we experienced in 2008. Since the highest values of discretionary accruals are in the time period from 2004 to 2008, with the highest point in 2006 for all the models, the vertex here could be explained by the realization principle introduced in 2005 or the tax reform in 2006. Hauge (2006) states that the relationship between the realization principle and accounting accruals is composite, and Thoresen et al. (2010) showed that the tax reform affected the way accruals were conducted. Thus, these reforms, which made the companies adapt to new laws and regulations, could be the reason for the higher discretionary accruals in these years.

Further, we look at our independent variables. The CEO gender (GEN) is a dichotomous variable. Thus, the minimum value is 0, the maximum value is 1, and the standard deviation is 34 percent. We observe from *Table 2* that there are 16.103 females, which gives a percentage of 13.3, and there are 104.884 males, which gives a percentage of 86.7. This means that only 13 percent of the CEOs in our data sample are female. Thus, although a skewness between male- and female CEOs was expected, surprisingly few female CEOs were in our sample. Moreover, from CEO age (AGE), we observe that the minimum value is 19 years, and the maximum value is 90 years. The standard deviation is 10 years, and the mean is 49.5 years. CEO tenure (TEN) has a minimum value of 0 years and a maximum value of 24 years. The standard deviation is 5.8, and the mean is 8.2 years. Further, CEO board member (MEMB) is a dichotomous variable. Thus, the minimum value is 0, the maximum value is 1, and the standard deviation is 42.1 percent. Going into details, we observe from *Table 2* that 95.149 CEOs are also board members, which gives a percentage of 77, and that 28.354 CEOs are not board members, which gives a percentage of 23. This means that, on average, 77 percent of the CEOs in our data sample are also board members. Lastly, CEO ownership (OWN) has a minimum value of 0 and a maximum value of 1. The standard deviation is 38.9 percent, and the mean is 44.5 percent.

Moreover, we look at our firm control variables. We observe that the firm size (SIZE) has a minimum value of 14.5 and a maximum value of 17.8. The standard deviation is 0.8, and the mean is 15.6. Next, profitability (ROA) has a minimum value of -31.5 percent and a maximum value of 75.3 percent. The standard deviation is 18.1 percent, and the mean is 14 percent. Leverage (LEV) has a minimum value of 0 and a maximum value of 1. The standard deviation is 25.7 percent, and the mean is 34.9 percent. Furthermore, growth (GROW) has a minimum value of -75 percent and a maximum value of 185 percent. The standard deviation is 34 percent, and the mean is 8.7 percent. Lastly, Firm age (FIRM) has a minimum value of 1 year and a maximum value of 65 years. The standard deviation is 11.3 years, and the mean is 14.6 years.

6.1 Correlation Matrix and VIF

The correlation matrix presented in *Table 3* illustrates the correlation coefficients as prevailing among the variables. Bouaziz et al. (2020) state that if the correlation between the variables exceeds 0.8, there could be multicollinearity between the variables. Thus, the correlation should not have a high value to prove no multicollinearity problem among the variables.

Table 3: *Correlation Matrix*

	GEND	AGE	TEN	MEMB	OWN	SIZE	ROA	LEV	GROW	FIRM
GEND	1.0000									
AGE	-0.0614	1.0000								
TEN	-0.0500	0.4381	1.0000							
MEMB	-0.0688	0.1028	0.2455	1.0000						
OWN	-0.0697	0.0845	0.2507	0.4515	1.0000					
SIZE	-0.0718	0.0429	0.0127	-0.1916	-0.2377	1.0000				
ROA	-0.0100	-0.0177	-0.0096	0.1197	0.0890	-0.0103	1.0000			
LEV	0.0224	-0.0526	-0.1044	-0.0321	-0.0583	0.0493	-0.3363	1.0000		
GROW	-0.0188	-0.0974	-0.1047	-0.0199	-0.0305	0.0857	0.1897	0.0009	1.0000	
FIRM	-0.0039	0.2850	0.4352	-0.0320	-0.0607	0.1562	-0.0958	-0.0685	-0.1215	1.0000

From *Table 3*, we observe that all of the values are in normal ranges. This shows that there are no multicollinearity problems between the variables used in our research model. However, the correlation matrix does not always capture the problem with multicollinearity, and a way to detect this is by using the *Variance Inflation Factor (VIF)*¹⁰ test. As we observe from *Table 4*, no value is exceeding 10. Thus, the multicollinearity is not likely to present an issue in our analysis.

Table 4: *Variance Inflation Factor Coefficients (VIF)*

	VIF
GEND	1.02
AGE	1.26
TEN	1.60
MEMB	1.33
OWN	1.36
SIZE	1.12
ROA	1.21
LEV	1.16
GROW	1.07
FIRM	1.35

¹⁰ Despite no formal rule, it is generally accepted that a VIF value greater than 10 may be harmful (Yoo et al., 2014)

7.0 Empirical Results and Discussion

7.1 Regression Results

Table 5 presents the regression results using a *random-effects model* of the discretionary accruals on the explanatory variables. The three models, Jones Model (1991), Modified Jones model (1995) and the model by Kothari et al. (2005) are used separately in different regressions, by using the *Feasible Generalized Least Squares* (FGLS) estimator. To control for the heteroskedasticity and serial correlation, we have clustered the standard error at the firm level. As previously stated, we have also included industry dummies to control for industry differences, and year dummies to pick up any variation in the outcome that happens over time, and that is not attributed to the other explanatory variables. We will comment on the specific effects on the CEO characteristics to discuss our hypotheses.

Table 5: Regression Results

Table 5 reports the regression results using a *random-effects model* of the discretionary accruals on the explanatory variables. The dependent variable is represented by discretionary accruals (DA). This variable is estimated by; *Jones Model (1991)* in model (1), the *Modified Jones model by Dechow et al. (1995)* in model (2), and by the model of *Kothari et al. (2005)* in model (3). The explanatory variables are defined as follows; *CEO gender* (GEN) is a dummy variable taking the value 1 if the CEO is female, and 0 otherwise. *CEO age* (AGE) is measured as the current time period t minus the CEO birth year. *CEO tenure* (TEN) is the number of consecutive years that the current CEO has been employed as CEO. *CEO board membership* (MEMB) is a dummy variable taking the value 1 if the CEO sits on the board of directors, and 0 otherwise. *CEO ownership* (OWN) is the percentage of shares owned ultimately by the CEO at the beginning of the year. *Firm size* (SIZE) is measured by the natural logarithm of total assets. *Profitability* (ROA) is measured as return on assets, which is net income before interest, taxes, and extraordinary items scaled by average total assets. *Leverage* (LEV) is measured as interest-bearing debt scaled by total assets. *Growth* (GROW) is measured as the average value of one-year growth in revenue. *Firm age* (FIRM) is measured as the years of existence of the company since its creation. All the standard errors are clustered at the firm level and presented in the parentheses.

	MODEL 1	MODEL 2	MODEL 3
	DA JONES	DA MODIFIED	DA KOTHARI
Variables			
CONSTANT	0,1747*** (0,0134)	0,1731*** (0,0134)	0,1970*** (0,0136)
Independent Variables			
GEN	-0,0170*** (0,0015)	-0,0171*** (0,0015)	-0,0154*** (0,0016)
AGE	-0,0001*** (0,0001)	-0,0001** (0,0001)	-0,0001* (0,0001)
TEN	-0,0012*** (0,0001)	-0,0012*** (0,0001)	-0,0010*** (0,0001)
MEMB	-0,0002 (0,0017)	-0,0003 (0,0017)	0,0002 (0,0017)
OWN	-0,0028 (0,0017)	-0,0033** (0,0017)	-0,0020 (0,0018)
Control Variables			
SIZE	-0,0027*** (0,0008)	-0,0027*** (0,0008)	-0,0049*** (0,0008)
ROA	0,0272*** (0,0040)	0,0257*** (0,0040)	0,0243*** (0,0044)
LEV	0,0107*** (0,0027)	0,0125*** (0,0027)	0,0100*** (0,0029)
GROW	0,0388*** (0,0020)	0,0403*** (0,0020)	0,0352*** (0,0024)
FIRM	-0,0010*** (0,0001)	-0,0010*** (0,0001)	-0,0007*** (0,0001)
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
R-Square	0,0602	0,0618	0,0435
Wald Chi ²	2252,77***	2217,60***	1453,89***
Prob>Chi ²	0,0000	0,0000	0,0000
Sigma e	0,1163	0,1166	0,1093
Sigma u	0,0912	0,0910	0,0794
Theta	0,3300	0,3288	0,3026
No. of observations	107.081	107.081	82.943
No. of firms	36.912	36.912	29.966

Significance level 1%, 5% and 10% are reported as ***, **, and * respectively.

The regression analysis reveals that the R-squared values for all the models are relatively small. Nevertheless, it should be noted that low R-squared values are typical in this type of accruals regression (Alqatamin et al., 2017; Davidson et al., 2007; Jenkins and Velury, 2008; Peni and Vähämaa, 2010). We observe that the sigmas for the error terms are small and do not create concerns about the validity of the regression. The theta is the random effects estimator, and from the table, we see that the theta is around 30 percent for all three models, which shows that the random-effects model is a good fit for this regression (Buteikis, n.d.).

7.1.1 Effect of CEOs Gender on Earnings Management

Previous research has shown that women are less likely to engage in aggressive earnings management, less likely to manage the accounting results, and companies run by women tend to have a higher earnings quality. Thus, in our first hypothesis, following Alqatamin et al. (2017), Belot and Serve (2015), and Bouaziz et al. (2020), we proposed that the presence of female CEOs negatively affects earnings management practices. Testing *hypothesis one* (H1), we find that the relationship between CEO gender (GEN) and earnings management in the Jones model, Modified Jones model, and model by Kothari et al. are reported as -0.0170, -0.0171, and -0.0154, respectively. All the coefficients are statistically significant at the one percent level. As expected, all the models report negative numbers, meaning that female presence negatively relates to earnings management. This indicates that firms run by a female CEO give 1.70 percent from the Jones model, 1.71 percent from the Modified Jones model, and 1.54 percent from Kothari et al., less tendency to perform earnings management practices. This result is also supported by several empirical research like Bouaziz et al. (2020), Belot and Serve (2015) and Barua et al. (2010). Hence, we do not reject our null hypothesis that the presence of female CEOs negatively affects earnings management practices.

7.1.2 Effect of CEOs Age on Earnings Management

As presented in the literature review, previous research shows that older people tend to be more ethical, thus, less motivated to engage in earnings management since they are more likely to fear risk factors. Hence, in our second hypothesis, following Bouaziz et al. (2020), we proposed that CEO age negatively affects earnings management practices. Testing *hypothesis two* (H2), we find that the relationship

between CEO age and earnings management in the Jones model, Modified Jones model, and model by Kothari et al. are reported as -0.0001, -0.0001, -0.0001, respectively. The Jones model is statistically significant at the one percent level, the Modified Jones model at the five percent level, and Kothari et al. at the ten percent level. The generally accepted limit is at the five percent level. Thus, we can only conclude a relationship between age and earnings management practices in the Jones model and the Modified Jones model. All the models report negative numbers, meaning that age has a negative relation to earnings management. This indicates that higher age on the CEOs gives around 0.01 percent less tendency to perform earnings management practices. This result is also supported by previous empirical research like Alqatamin et al. (2017) and Bouaziz et al. (2020). Hence, we do not reject our null hypothesis that CEOs' age negatively affects earnings management practices.

7.1.3 Effect of CEOs Tenure on Earnings Management

Empirical research demonstrates that CEOs with short tenure often maximize reported earnings. They sought to show that the performance from the previous CEO was lacking or report a reduction in earnings because they may classify as low-ability managers. Thus, in our third hypothesis, following Chou and Chan (2018) and Gull et al. (2018), we proposed that CEO tenure negatively affects earnings management practices. Testing *hypothesis three* (H3), we find that the relationship between CEO tenure and earnings management in the Jones model, Modified Jones model, and model by Kothari et al. are reported as -0.0012, -0.0012, and -0.0010, respectively. All the coefficients are statistically significant at the one percent level. All the models report negative numbers, meaning that tenure has a negative relation to earnings management. This indicates that higher tenure on the CEOs gives around 0.12 percent less tendency to perform earnings management practices. This result is also supported by previous empirical research like Chou and Chan (2018), Gull et al. (2018), and Isidro and Goncalves (2011). Hence, we do not reject our null hypothesis that CEOs' tenure negatively affects earnings management practices.

7.1.4 Effect of CEOs Board Membership on Earnings Management

Prior research has shown that a majority of the previous research on CEO board membership states that when the CEO is also a board member, it influences the decision-making and can be used to obtain excessive compensation. Thus, in our fourth hypothesis, following Bouaziz et al. (2020), we proposed that CEO board membership positively affects earnings management practices. Testing *hypothesis four* (H4), we find that the relationship between CEO board membership and earnings management in the Jones model, Modified Jones model, and model by Kothari et al. are reported as -0.0002, -0.0003, and 0.0002, respectively. However, as we observe, all the coefficients are statistically insignificant at the ten percent level. The generally accepted limit is at the five percent level. Thus, when the variables are statistically insignificant at the ten percent level, we would argue that there is insufficient evidence to conclude a relationship between CEO board membership on earnings management practices. Hence, we reject our null hypothesis stating that CEOs' board membership positively affects earnings management practices.

7.1.5 Effect of CEOs Ownership on Earnings Management

As presented in the literature review, previous research has shown that if the percentage of shares held by the CEO increases, the incentive to engage in accounting misbehavior also increases and that more managerial ownership may encounter managers to use discretionary accruals to improve earnings. Thus, in our fifth hypothesis, following Chou and Chan (2018) and Qawasmeh and Azzam (2020), we proposed that CEO ownership positively affects earnings management practices. Testing *hypothesis five* (H5), we find that the relationship between CEO ownership and earnings management in the Jones model, Modified Jones model, and model by Kothari et al. are reported as -0.0028, -0.0033, and -0.0020, respectively. As we observe, the Jones model is statistically insignificant at the ten percent level, the Modified Jones model is statistically significant at the five percent level, and the model by Kothari et al. is statistically insignificant at the ten percent level. Since the Modified Jones model reports statistically significant numbers at the five percent level, we can argue a relationship between CEO ownership and earnings management practices in the Modified Jones Model. However, we observe that all the models report negative numbers, meaning that there is a negative

relationship between CEO ownership and earnings management. This is contrary to our hypothesis, as we expected CEO ownership to affect earnings management practices positively. Hence, we reject our null hypothesis that CEOs' ownership positively affects earnings management practices.

7.1.6 Effect of the Control Variables

We see that the control variables have the typical directional effect; (-) *firm size*, (+) *profitability*, (+) *leverage*, (+) *growth*, (-) *firm age*. A significant amount of the previous literature has investigated the relationship between firm size and earning management practice, and the results are contrasting. It is often stated that larger firms tend to use less income-increasing accruals than smaller firms. The firm size (SIZE) for the Jones model, Modified Jones model, and model by Kothari et al. are reported as -0.0027, -0.0027, and -0.0049, respectively. All the coefficients are also statistically significant at the one percent level. On the contrary, our results do not support the agency theory reported by Jensen and Meckling (1976), who reported that large-sized firms witness higher agency costs, thus more opportunistic practices. However, since we only look at small and medium-sized companies, large companies are excluded from our dataset. Thus, this variable only indicates the size among SME companies.

It is further stated that profitable firms measured by ROA actively boost earnings. The firm profitability (ROA) for the Jones model, Modified Jones model, and model by Kothari et al. are reported as 0.0272, 0.0257, and 0.0243, respectively. All the coefficients are also statistically significant at the one percent level. This result is supported by several studies (Abdolmohammadi et al., 2010; Ali & Zhang, 2015; Bouaziz et al., 2020).

Furthermore, financial leverage is considered a vital ratio to evaluate a company's financial position. Financial leverage is an essential factor that impacts the quality of firms' earnings because debt agreements are based on financial information, and any violation in those debt agreements will cause costs to firms (Waweru & Riro, 2013). The leverage (LEV) for the Jones model, Modified Jones model, and model by Kothari et al. are reported as 0.0107, 0.0125, and 0.0100, respectively. All the coefficients are also statistically significant at the one percent level. Several studies

support this result (Abdolmohammadi et al., 2010; Bouaziz et al., 2020; Isidro & Goncalves, 2011; Rajeevan & Ajward, 2019). On the other hand, our results do not support the finding by Dechow et al. (2000) that firms with high accruals are characterized by low leverage.

Next, it is also investigated if growth affects earnings management practices, as growth and accruals are fundamentally related. The firm growth (GROW) for the Jones model, Modified Jones model, and model by Kothari et al. are reported as 0.0388, 0.0403, and 0.0352, respectively. All the coefficients are also statistically significant at the one percent level. Several studies support this result (Abdolmohammadi et al., 2010; Ali & Zhang, 2015; Alzoubi, 2018; Barua et al., 2010; Belot & Serve, 2015; O'Callaghan et al., 2018; Rajeevan & Ajward, 2019).

Finally, empirical literature also investigates if firm age affects earnings management practices. Firms with higher age tend to have lower levels of earnings management as they are well-known companies, have great value in the market, have a reputation to protect, and are more aware of the standards and codes that govern their practices (Bassiouny, 2016). The firm age (FIRM) for the Jones model, Modified Jones model, and model by Kothari et al. are reported as -0.0010, -0.0010, and -0.0007, respectively. All the coefficients are also statistically significant at the one percent level. This result is also supported by several studies (Alzoubi, 2018; Bouaziz et al., 2020; Qawasmeh & Azzam, 2020).

7.2 Robustness Tests

To further test our results, we have performed some additional regressions on our dataset as robustness checks.

7.2.1 Robustness Test: Additional Control Variables

In the first robustness test, we add the additional control variables audit quality (BIG4)¹¹, family firms (FAMILY)¹², and firm loss (LOSS)¹³. The reason for adding several control variables is that these control variables can potentially enhance the internal validity of our study. Hence, we are interested in seeing if our study is robust while including these additional variables.

Agency theory suggests that auditing services serve as a monitoring mechanism to reduce the costs that arise from the conflict of interest between principals and agents. Hence, auditing services is a monitoring mechanism that firms demand to provide evidence that they produce reliable financial statements for stakeholders (Parte-Esteban & Ferrer Garcia, 2014). Thus, we chose to include audit quality as one additional control variable because prior studies found that this variable can influence the magnitude of earnings management (De Angelo, 1981; Francis et al., 1999; Gul et al., 2001). Auditing firms can be driven by greed and aim to keep the clients happy, and thus in some cases, the audit firms do not tend to question any malpractices performed by the client and cover-up manipulations. However, De Angelo (1981) states that long-established firms are usually audited by big auditing firms, and that the big audit firms have less incentive to report material misstatements to protect their reputation. Based on this, following Abdolmohammadi et al. 2010 and O'Callaghan et al. 2018, we are interested in seeing if firms audited by the big four give less motivation to engage in earnings management practices.

¹¹ BIG4 is a dummy variable taking the value 1 if the firm is audited by one of the BIG-4 auditors or their forerunners in year t, and 0 otherwise. The BIG-4 auditors consist of; Deloitte, PriceWaterhouseCoopers, Ernst & Young, and KPMG (Kells & Gow, 2017).

¹² FAMILY is a dummy variable to identify family firms. FAMILY takes the value 1 if the majority of shares is owned by the family, meaning at least 50%, and 0 otherwise.

¹³ LOSS is a dummy variable to identify a company's income in year one. LOSS takes the value 1 if the company's income in year 1 is negative, and 0 otherwise.

To further test the robustness of our models, we want to see if family firms affect earnings management. There was an extensive amount of family firms in our dataset. Thus, to examine if there is a relationship between family firms and earnings management, we include a dummy variable to contain family firms solely. Following Bøhren (2011), we defined these firms as firms where the family owns most shares. With the majority of shares meaning at least 50 percent. Bøhren (2011) states that family firms are the dominating organizational form in Norway. This, especially among smaller, private firms. One reason for family firms to engage in earnings management is to reduce the risk of non-family owners asking questions about the family's control and influence over the firm. This risk is especially prominent when earnings are low (Haugland Sundkvist, 2021). For partly owned family firms, agency conflicts increase with family ownership, while threats to family control and influence decrease with the level of family ownership. Hence, relatively high or low family ownership may negatively relate to earnings quality (Jara-Bertin et al., 2008). Based on this, following Gull et al. (2018), we are interested to see if family firms give more motivation to engage in earnings management practices.

Moreover, it is argued that a firm's losses may be a significant factor that drives companies to maneuver the current accruals and maintain positive earnings. Several studies evidence strong incentives for earnings management to avoid reporting earnings that decrease or lead to losses. The study conducted by Hayn (1995) identified that firms try to avoid disclosure of losses, and Kahneman and Tversky (1979) found that the most considerable incentives to manage earnings occur while moving from relative or absolute loss to gain. This indicates that firms manipulate earnings to avoid small losses or decreases in earnings. Based on this, following Belot and Serve (2015), we are interested to see if firms' losses give more motivation to engage in earnings management practices.

Table 6: Regression Results with Additional Control Variables

Table 6 reports the result from the robustness test when adding the variables audit quality (BIG4), family firms (FAMILY), and loss (LOSS) as additional control variables. The results are obtained using a *random-effects model* of the discretionary accruals on the explanatory variables. The dependent variable is represented by discretionary accruals (DA). This variable is estimated by; *Jones Model (1991)* in model (1), the *Modified Jones model by Dechow et al. (1995)* in model (2), and by the *model of Kothari et al. (2005)* in model (3). The explanatory variables are defined as follows; *CEO gender* (GEN) is a dummy variable taking the value 1 if the CEO is female, and 0 otherwise. *CEO age* (AGE) is measured as the current time period t minus the CEO birth year. *CEO tenure* (TEN) is the number of consecutive years that the current CEO has been employed as CEO. *CEO board membership* (MEMB) is a dummy variable taking the value 1 if the CEO sits on the board of directors, and 0 otherwise. *CEO ownership* (OWN) is the percentage of shares owned ultimately by the CEO at the beginning of the year. *Firm size* (SIZE) is measured by the natural logarithm of total assets. *Profitability* (ROA) is measured as return on assets, which is net income before interest, taxes, and extraordinary items scaled by average total assets. *Leverage* (LEV) is measured as interest-bearing debt scaled by total assets. *Growth* (GROW) is measured as the average value of one-year growth in revenue. *Firm age* (FIRM) is measured as the years of existence of the company since its creation. The additional control variables are measured as follows; *Audit quality* (BIG4) is a dummy variable taking the value 1 if the firm is audited by one of the big-four auditors or their forerunners in year t, and 0 otherwise. *Family firms* (FAMILY) is a dummy variable taking the value 1 if the majority of shares is owned by the family, meaning at least 50 percent, and 0 otherwise. *Firm loss* (LOSS) is a dummy variable taking the value 1 if the company's income in year 1 is negative, and 0 otherwise. All the standard errors are clustered at the firm level and presented in the parentheses.

	MODEL 1	MODEL 2	MODEL 3
	DA JONES	DA MODIFIED	DA KOTHARI
Variables			
CONSTANT	0,1680*** (0,0137)	0,1661*** (0,0137)	0,1929*** (0,0139)
Independent Variables			
GEN	-0,0163*** (0,0015)	-0,0164*** (0,0015)	-0,0148*** (0,0016)
AGE	-0,0002*** (0,0001)	-0,0002*** (0,0001)	-0,0001** (0,0001)
TEN	-0,0011*** (0,0001)	-0,0011*** (0,0001)	-0,0010*** (0,0001)
MEMB	0,0010 (0,0017)	0,001 (0,0017)	0,0011 (0,0017)
OWN	0,0036** (0,0018)	0,0034* (0,0018)	0,0046** (0,0019)
Control Variables			
SIZE	-0,0024*** (0,0008)	-0,0023*** (0,0008)	-0,0047*** (0,0008)
ROA	0,0568*** (0,0046)	0,0562*** (0,0046)	0,0526*** (0,0051)
LEV	0,0073*** (0,0028)	0,0090*** (0,0028)	0,0070** (0,0029)
GROW	0,0389*** (0,0020)	0,0404*** (0,0020)	0,0357*** (0,0024)
FIRM	-0,0010*** (0,0001)	-0,0010*** (0,0001)	-0,0007*** (0,0001)
BIG4	0,0006 (0,0014)	0,0003 (0,0014)	0,0025* (0,0014)
FAMILY	-0,0137*** (0,0017)	-0,0143*** (0,0017)	-0,0138*** (0,0018)
LOSS	0,0222*** (0,0014)	0,0229*** (0,0014)	0,0205*** (0,0015)
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
R-Square	0,0671	0,0689	0,0514
Wald Chi ²	2427,58***	2408,81***	1603,10***
Prob>Chi ²	0,0000	0,0000	0,0000
Sigma e	0,1162	0,1165	0,1092
Sigma u	0,0905	0,0904	0,0788
Theta	0,3280	0,3267	0,3000
No. of observations	107.081	107.081	82.943
No. of firms	36.912	36.912	29.966

Significance at 1%, 5% and 10% are reported as ***, **, and * respectively.

All the original control variables are still statistically significant at the one percent level, except leverage in the model by Kothari et al., which is statistically significant at the five percent level. We also observe that the R-squared is slightly higher for all models than in the original model, reporting 6.71 percent for the Jones model, 6.89 percent for the Modified Jones model, and 5.14 percent for Kothari et al.

The variables change to some degree when we add the additional control variables. We observe that gender now has a less negative effect on the discretionary accruals than the original model. Both age and tenure have approximately the same effect as the original regression. However, age is now statistically significant in all the models. The board membership now has a more positive effect on the discretionary accruals than the original model and changes from having a small negative impact in the Jones model and Modified Jones model in the original regression to a positive impact in all the models. However, the board membership is not statistically significant neither in the original regression nor in this sample. Further, the most significant change is the ownership, which changes from having a negative impact on the discretionary accruals in the original regression to a positive impact in all the models. This variable now supports our initial hypothesis, reporting a positive relationship between ownership and earnings management practices. Since the ownership was statistically significant in Modified Jones model in the original regression and is now statistically significant in the Jones model and the model by Kothari et al., we can, therefore, state that CEO ownership is not robust to the inclusion of the extra control variables.

If we look at the new control variables, the variable audit quality (BIG4) for the Jones model, Modified Jones model, and model by Kothari et al. are reported as 0.0006, 0.0003, and 0.0025, respectively. As we observe, the Jones model and the Modified Jones model are statistically insignificant at the ten percent level, and the model by Kothari et al. is statistically significant at the ten percent level. As previously stated, the generally accepted limit is at the five percent level. Thus, we would argue that there is not sufficient evidence to conclude that there is a relationship between audit quality and earnings management. All the models are reporting a positive relationship between audit quality and discretionary accruals. The results support previous research like Gull et al. (2018) and Rajeevan and Ajward (2019). However, this result is interesting, as most of the previous literature

states that firms audited by one of the big four will have less motivation to engage in earnings management.

Moreover, the variable family firms (FAMILY) for the Jones model, Modified Jones model, and model by Kothari et al. are reported as -0.0137, -0.0143, and -0.0138, respectively. As we observe, all the models are statistically significant at the one percent level. All the models are reporting a negative relationship between family firms and discretionary accruals. Thus, according to the Jones model, if a firm is over 50 percent owned by the family, the discretionary accruals decrease by 1.37 percent. According to the Modified Jones model, family firms decrease discretionary accruals by 1.43 percent, and according to Kothari et al., family firms decrease discretionary accruals by 1.38 percent. This result is also interesting, as several previous studies state that family firms are positively related to earnings management practices. Hence, we can argue that family firms have a small negative effect on earnings management practices.

Furthermore, the variable loss (LOSS) for the Jones model, Modified Jones model, and model by Kothari et al. are reported as 0.0222, 0.0229, and 0.0205, respectively. As we observe, all the models are statistically significant at the one percent level. Thus, according to the Jones model, if a firm reports loss, the discretionary accruals increase by 2.22 percent. According to the Modified Jones model, reported losses increase discretionary accruals by 2.29 percent, and Kothari et al. reported losses to increase discretionary accruals by 2.05 percent. The results support the findings of Belot and Serve (2015). Hence, we can argue that reported losses have a positive effect on earnings management practices.

7.2.2 Robustness Test: Government Ownership

We aim to look at private firms in our study and have removed all the listed firms in our data-cleaning process. However, the Norwegian government has ownership shares in smaller private companies in order to preserve certain industries. Thus, to examine the relationship of earnings management and government control, we remove all the companies with an aggregated fraction of 50 percent or above held by state owners. The empirical literature offers contrasting viewpoints regarding the relationship between government ownership and earnings management, even

though studies generally show a slight negative relationship. This means that the quality of the earnings published in the budgets of government-controlled enterprises must be somewhat higher than earnings published by non-government-controlled firms (Capalbo et al., 2018). Thus, previous research has found that companies controlled by the government have less motivation to engage in earnings management. Some previous studies like Abdolmohammadi et al. (2010) remove these companies from the data cleaning process, however, we want to examine if these companies have an effect on discretionary accruals for Norwegian firms. We will, therefore, check the robustness of our findings by removing the companies that are controlled more than 50 percent by the government. The final sample left us with 128.480 repeated observations on 42.981 firms by removing government-controlled firms.

Table 7: Regression Results by Removing Government Ownership (Over 50% Owned by the Government)

Table 7 reports the result from the robustness test by removing government ownership. By government ownership meaning firms with over 50 percent of the shares owned by the government. The results are obtained using a *random-effects model* of the discretionary accruals on the explanatory variables. The dependent variable is represented by discretionary accruals (DA). This variable is estimated by; *Jones Model (1991)* in model (1), the *Modified Jones model by Dechow et al. (1995)* in model (2), and by the *model of Kothari et al. (2005)* in model (3). The explanatory variables are defined as follows; *CEO gender* (GEN) is a dummy variable taking the value 1 if the CEO is female, and 0 otherwise. *CEO age* (AGE) is measured as the current time period t minus the CEO birth year. *CEO tenure* (TEN) is the number of consecutive years that the current CEO has been employed as CEO. *CEO board membership* (MEMB) is a dummy variable taking the value 1 if the CEO sits on the board of directors, and 0 otherwise. *CEO ownership* (OWN) is the percentage of shares owned ultimately by the CEO at the beginning of the year. *Firm size* (SIZE) is measured by the natural logarithm of total assets. *Profitability* (ROA) is measured as return on assets, which is net income before interest, taxes, and extraordinary items scaled by average total assets. *Leverage* (LEV) is measured as interest-bearing debt scaled by total assets. *Growth* (GROW) is measured as the average value of one-year growth in revenue. *Firm age* (FIRM) is measured as the years of existence of the company since its creation. All the standard errors are clustered at the firm level and presented in the parentheses.

	MODEL 1	MODEL 2	MODEL 3
	DA JONES	DA MODIFIED	DA KOTHARI
Variables			
CONSTANT	0,1651*** (0,0136)	0,1634*** (0,0136)	0,1871*** (0,0137)
Independent Variables			
GEN	-0,0177*** (0,0015)	-0,0178*** (0,0015)	-0,0161*** (0,0016)
AGE	-0,0001** (0,0001)	-0,0001** (0,0001)	-0,0001 (0,0001)
TEN	-0,0012*** (0,0001)	-0,0012*** (0,0001)	-0,0010*** (0,0001)
MEMB	-0,0013 (0,0017)	-0,0014 (0,0017)	-0,0015 (0,0018)
OWN	-0,0030* (0,0017)	-0,0035** (0,0017)	-0,0023 (0,0018)
Control Variables			
SIZE	-0,0022*** (0,0008)	-0,0021*** (0,0008)	-0,0043*** (0,0008)
ROA	0,0259*** (0,0040)	0,0243*** (0,0040)	0,0219*** (0,0045)
LEV	0,0110*** (0,0028)	0,0128*** (0,0028)	0,0102*** (0,0029)
GROW	0,0400*** (0,0021)	0,0417*** (0,0021)	0,0371*** (0,0025)
FIRM	-0,0010*** (0,0001)	-0,0010*** (0,0001)	-0,0007*** (0,0001)
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
R-Square	0,0598	0,0614	0,0428
Wald Chi ²	2171,95***	2138,57***	1382,76***
Prob>Chi ²	0,0000	0,0000	0,0000
Sigma e	0,1169	0,1171	0,1099
Sigma u	0,0910	0,0909	0,0791
Theta	0,3276	0,3263	0,2991
No. of observations	104.967	104.967	81.157
No. of firms	36.534	36.534	29.606

Significance at 1%, 5% and 10% are reported as ***, **, and * respectively.

We observe that all the control variables are still statistically significant at the one percent level by removing firms with government control. We also observe that the R-squared is slightly lower for all models than in the original model, reporting 5.98 percent for the Jones model, 6.14 percent for the Modified Jones model, and 4.28 percent for Kothari et al.

There are some minor changes when we remove the firms that are over 50 percent controlled by the government. From this sample, the results indicate that the gender of the CEO will have a more negative effect on the discretionary accruals. Further, the age and tenure of the CEO will have the same effect as the original regression. Moreover, the board membership has a more negative effect on the discretionary accruals. It has changed from having a small positive impact on the discretionary accruals in the original regression in Jones Model to a negative impact in all the models. However, the variable is statistically insignificant at the ten percent level in both the original regression and in this sample. The CEO ownership is still only statistically significant in the Modified Jones model and indicates that the ownership now has a little more negative effect on the discretionary accruals. Hence, all over, our initial model seems to be quite robust regarding government-owned firms.

7.2.3 Robustness Test: Structural Break

As we mentioned from *illustration 1*, we see indications of a structural break in the years around 2006. A structural break is a sudden policy change in government (Allaro et al., 2011). In our model, this can be seen as the introduction of the realization principle or the Norwegian tax reform. The realization principle was introduced in 2005, and the tax reform was announced in 2004 and entered into force in 2006. We want to check for a structural break because our data can be found to be non-stationary if it shows different patterns before and after the structural break. The introduction of the realization principle in 2005 ceased the link between accounting and tax that applied to the timing of income and expenses and replaced it with the realization principle (Hauge, 2006). Further, the Norwegian tax reform of 2006 implied a significant revision of the dual-income tax system and implied a substantial realignment of dividend income and wage income taxation (Thoresen et al., 2010). Coppens and Peek (2005) reported that firms do not try to avoid reporting

small losses when the tax regulations strongly affect financial accounting. Thus, when the tax regulation is weak, the firms may engage in earnings management to avoid reporting losses. To see if a structural break causes our results to be skewed, we firstly use the *chow test*¹⁴ to check if our assumptions of a structural break are correct. The formula for the chow test is presented in *illustration 2*.

Illustration 2: Chow Test

$$\text{Chow Test} = \frac{\frac{SSE_C - (SSE_1 + SSE_2)}{K}}{\frac{SSE_1 + SSE_2}{N_1 + N_2 - 2 * K}}$$

From the chow test, we observe that it supports the notion of a structural break around the year 2005. Thus, we divide the dataset into two samples. The first sample is the full sample size used in our original regression, and the second one is from the year 2005 and forward.

Table 8: Regression Results with Structural Break (Full and Reduced Sample)

Table 8 reports the result from the robustness test structural break by dividing the sample into the full sample (2001-2018) and reduced sample (2005-2018). The results are obtained using a *random-effects* model of the discretionary accruals on the explanatory variables. The dependent variable is represented by discretionary accruals (DA). This variable is estimated by; *Jones Model (1991)* in model (1), the *Modified Jones model by Dechow et al. (1995)* in model (2), and by the *model of Kothari et al. (2005)* in model (3). The explanatory variables are defined as follows; *CEO gender* (GEN) is a dummy variable taking the value 1 if the CEO is female, and 0 otherwise. *CEO age* (AGE) is measured as the current time period t minus the CEO birth year. *CEO tenure* (TEN) is the number of consecutive years that the current CEO has been employed as CEO. *CEO board membership* (MEMB) is a dummy variable taking the value 1 if the CEO sits on the board of directors, and 0 otherwise. *CEO ownership* (OWN) is the percentage of shares owned ultimately by the CEO at the beginning of the year. *Firm size* (SIZE) is measured by the natural logarithm of total assets. *Profitability* (ROA) is measured as return on assets, which is net income before interest, taxes, and extraordinary items scaled by average total assets. *Leverage* (LEV) is measured as interest-bearing debt scaled by total assets. *Growth* (GROW) is measured as the average value of one-year growth in revenue. *Firm age* (FIRM) is measured as the years of existence of the company since its creation. All the standard errors are clustered at the firm level and presented in the parentheses.

¹⁴ The chow test specifies that H0: estimated parameters are stable (no structural break), and H1: difference in the estimated parameters (structural break).

Variables	MODEL 1		MODEL 2		MODEL 3	
	DA JONES		DA MODIFIED		DA KOTHARI	
	2001-2018	2005-2018	2001-2018	2005-2018	2001-2018	2005-2018
CONSTANT	0,1747*** (0,0134)	0,1938*** (0,0142)	0,1731*** (0,0134)	0,1915*** (0,0142)	0,1970*** (0,0136)	0,2187*** (0,0138)
Independent Variables						
GEN	-0,0170*** (0,0015)	-0,0184*** (0,0016)	-0,0171*** (0,0015)	-0,0184*** (0,0016)	-0,0154*** (0,0016)	-0,0163*** (0,0016)
AGE	-0,0001*** (0,0001)	-0,0002** (0,0001)	-0,0001** (0,0001)	-0,0001** (0,0001)	-0,0001* (0,0001)	-0,0001 (0,0001)
TEN	-0,0012*** (0,0001)	-0,0012*** (0,0001)	-0,0012*** (0,0001)	-0,0012*** (0,0001)	-0,0010*** (0,0001)	-0,0011*** (0,0001)
MEMB	-0,0002 (0,0017)	0,0000 (0,0018)	-0,0003 (0,0017)	-0,0001 (0,0018)	0,0002 (0,0017)	0,0001 (0,0019)
OWN	-0,0028 (0,0017)	-0,0034* (0,0018)	-0,0033** (0,0017)	-0,0040** (0,0018)	-0,0020 (0,0018)	-0,0038** (0,0018)
Control Variables						
SIZE	-0,0027*** (0,0008)	-0,0038*** (0,0008)	-0,0027*** (0,0008)	-0,0037*** (0,0008)	-0,0049*** (0,0008)	-0,0061*** (0,0008)
ROA	0,0272*** (0,0040)	0,0247*** (0,0044)	0,0257*** (0,0040)	0,0230*** (0,0044)	0,0243*** (0,0044)	0,0229*** (0,0047)
LEV	0,0107*** (0,0027)	0,0105*** (0,0031)	0,0125*** (0,0027)	0,0121*** (0,0030)	0,0100*** (0,0029)	0,0101*** (0,0031)
GROW	0,0388*** (0,0020)	0,0380*** (0,0022)	0,0403*** (0,0020)	0,0393*** (0,0022)	0,0352*** (0,0024)	0,0342*** (0,0025)
FIRM	-0,0010*** (0,0001)	-0,0010*** (0,0001)	-0,0010*** (0,0001)	-0,0010*** (0,0001)	-0,0007*** (0,0001)	-0,0007*** (0,0001)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
R-Square	0,0602	0,0602	0,0618	0,0622	0,0435	0,0445
Wald Chi ²	2252,77***	1921,74***	2217,60***	1876,02***	1453,89***	1324,78***
Prob>Chi ²	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
Sigma e	0,1163	0,1156	0,1166	0,1159	0,1093	0,1084
Sigma u	0,0912	0,0911	0,0910	0,0908	0,0794	0,0788
Theta	0,3300	0,3319	0,3288	0,3302	0,3026	0,3027
No. of observations	107.081	88.590	107.081	88.590	82.943	73.524
No. of firms	36.912	32.728	36.912	32.728	29.966	27.498

Significance at 1%, 5% and 10% are reported as ***, **, and * respectively.

By dividing the results into a full sample and in a reduced sample, we observe that all the control variables are statistically significant at the one percent level. Further, we observe that the R-squared is similar to the original regression, reporting 6.02 percent for the Jones model, 6.22 percent for the Modified Jones model, and 4.45 percent for Kothari et al. in the reduced sample.

The variables change to some degree when we look at a structural break. From this sample, the results indicate that the gender of the CEO will have a more negative effect on the discretionary accruals. Further, the age and tenure are very similar to the original sample. Moreover, the board membership now has a more positive effect on the discretionary accruals, and we can see that it has changed from having a negative impact on the discretionary accruals in the original regression to a positive impact in the Jones model. However, the variables are still not significant in any of the models. CEO ownership now has a more negative effect in all the models. It also changes from being insignificant at the ten percent level in the original regression to being statistically significant at the five percent level in the Kothari et al. model. Since the ownership is now statistically significant in the model by Kothari et al., we can, therefore, state that CEO ownership is not robust to the exclusion of the years until the taxation reform announcement.

To further develop this robustness test, we divide the companies included in our data sample into two groups. Following Garcia de Olalla López (2014), the companies in Norway that were most affected by the tax reform were closely held companies where medium and high-income taxpayers were active owners. Therefore, the two groups we wanted to study further were the most affected companies in contrast to the companies that were not. We, therefore, divide the companies from our initial sample into closely held and non-closely held companies, where the closely held companies are defined as companies with five or fewer owners (García de Olalla López, 2014).

Table 9: Regression Results with Structural Break (Closely and Non-closely Held)

Table 9 reports the result from the robustness test structural break by dividing the sample into closely held and non-closely held companies, following Garcia de Olalla López (2014). The results are obtained using a *random-effects* model of the discretionary accruals on the explanatory variables. The dependent variable is represented by discretionary accruals (DA). This variable is estimated by; *Jones Model (1991)* in model (1), the *Modified Jones model by Dechow et al. (1995)* in model (2), and by the *model of Kothari et al. (2005)* in model (3). The explanatory variables are defined as follows; *CEO gender (GEN)* is a dummy variable taking the value 1 if the CEO is female, and 0 otherwise. *CEO age (AGE)* is measured as the current time period t minus the CEO birth year. *CEO tenure (TEN)* is the number of consecutive years that the current CEO has been employed as CEO. *CEO board membership (MEMB)* is a dummy variable taking the value 1 if the CEO sits on the board of directors, and 0 otherwise. *CEO ownership (OWN)* is the percentage of shares owned ultimately by the CEO at the beginning of the year. *Firm size (SIZE)* is measured by the natural logarithm of total assets. *Profitability (ROA)* is measured as return on assets, which is net income before interest, taxes, and extraordinary items scaled by average total assets. *Leverage (LEV)* is measured as interest-bearing debt scaled by total assets. *Growth (GROW)* is measured as the average value of one-year growth in revenue. *Firm age (FIRM)* is measured as the years of existence of the company since its creation. All the standard errors are clustered at the firm level and presented in the parentheses.

Variables	MODEL 1		MODEL 2		MODEL 3	
	DA JONES		DA MODIFIED		DA KOTHARI	
	Closely held	Non-closely held	Closely held	Non-closely held	Closely held	Non-closely held
CONSTANT	0,1725*** (0,0137)	0,3638*** (0,0339)	0,1709*** (0,0137)	0,3658*** (0,0341)	0,1806*** (0,0143)	0,3765*** (0,0388)
Independent Variables						
GEN	-0,0173*** (0,0015)	-0,0160*** (0,0044)	-0,0173*** (0,0015)	-0,0168*** (0,0045)	-0,0155*** (0,0017)	-0,0181*** (0,0047)
AGE	-0,0002*** (0,0001)	-0,0004** (0,0019)	-0,0001** (0,0001)	-0,0004** (0,0002)	-0,0001 (0,0001)	-0,0002 (0,0002)
TEN	-0,0011*** (0,0001)	-0,0010*** (0,0003)	-0,0011*** (0,0001)	-0,0010*** (0,0003)	-0,0010*** (0,0001)	-0,0010*** (0,0003)
MEMB	-0,0029 (0,0019)	0,0067* (0,0038)	-0,0031* (0,0019)	0,0063* (0,0038)	-0,0022 (0,0020)	0,0034 (0,0041)
OWN	-0,0025 (0,0017)	0,0148 (0,0117)	-0,0029* (0,0017)	0,0179 (0,0119)	-0,0017 (0,0018)	0,0236* (0,0132)
Control Variables						
SIZE	-0,0025*** (0,0008)	-0,0146*** (0,0019)	-0,0025*** (0,0008)	-0,0147*** (0,0019)	-0,0038*** (0,0008)	-0,0157*** (0,0022)
ROA	0,0260*** (0,0041)	0,0319** (0,0133)	0,0246*** (0,0041)	0,0289** (0,0134)	0,0249*** (0,0047)	0,0238* (0,0133)
LEV	0,0086*** (0,0028)	-0,0031 (0,0081)	0,0105*** (0,0028)	-0,0023 (0,0081)	0,0112*** (0,0030)	-0,0017 (0,0085)
GROW	0,0402*** (0,0022)	0,0331*** (0,0052)	0,0415*** (0,0022)	0,0353*** (0,0053)	0,0354*** (0,0027)	0,0364*** (0,0060)
FIRM	-0,0009*** (0,0001)	-0,0011*** (0,0001)	-0,0008*** (0,0001)	-0,0011*** (0,0001)	-0,0007*** (0,0001)	-0,0010*** (0,0001)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
R-Square	0,0607	0,0850	0,0611	0,0867	0,0414	0,0735
Wald Chi ²	1930,59***	412,47***	1884,57***	414,09***	1291,33***	295,94***
Prob>Chi ²	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
Sigma e	0,1163	0,1101	0,1164	0,1109	0,1095	0,0993
Sigma u	0,0779	0,0881	0,0779	0,0894	0,0776	0,0910
Theta	0,2742	0,3376	0,2738	0,3405	0,2936	0,3889
No. of observations	94.157	9.795	94.157	9.795	75.013	7.926
No. of firms	31.455	3.926	31.455	3.926	27.761	3.399

Significance at 1%, 5% and 10% are reported as ***, **, and * respectively.

By dividing the results into a closely held and non-closely held sample, we observe that all the control variables are not statistically significant at the one percent level. We also observe that the R-squared is reporting 6.07 percent for closely held, and 8.50 in non-closely held in the Jones model, 6.11 for closely held, and 8.67 in non-closely held in the Modified Jones model, and 4.14 for closely held, and 7.35 in non-closely held in the Kothari et al. model.

There are some changes on the variables when we divide the results into closely held and non-closely held. As we can see, the non-closely held companies are a small portion of the companies in our sample. From this sample, the results indicate that gender will have a less negative effect on the discretionary accruals in the non-closely held sample. Further, age is quite similar but has a more negative effect on the non-closely held sample, and tenure is similar in both samples. Hence, these characteristics were more critical differentiators for the most affected companies by the tax reform. The board membership has now changed from having a negative impact on the discretionary accruals in the closely held sample to a positive impact on the discretionary accruals in the non-closely held sample in all the models. However, the variables are still not significant in any of the models. The ownership has now changed from having a negative impact on the discretionary accruals in the closely held sample to a positive impact on the discretionary accruals in the non-closely held sample in all the models. However, in this sample, the variables are not significant in any of the models. Since the ownership is now statistically insignificant in all the models, we can, therefore, state that CEO ownership is not robust by dividing the sample into closely and non-closely held firms.

7.3 Limitations

To achieve generalizable research results, meaning that the findings are equally applicable to other research settings, it is essential to look at the external and internal validity. Based on this, our research faces several limitations. Firstly, our research only uses five independent variables constituting the CEO characteristics. These characteristics are commonly used variables in the prior literature testing their effect on earnings management. However, there could also be other characteristics that can explain earnings management and raise the level of the R-square.

Secondly, another limitation could be measurement errors. We have observed that in previous literature, different ways to measure the variables have been used. Thus, different measurements on total accruals, the models, and several of the control variables exist. Because the calculation of discretionary accruals consists of many variables, this can result in measurement errors for our dependent variable. However, by using generally accepted calculation methods, like Jones (1991), Dechow et al. (1995), and Kothari et al. (2005), we see this threat as limited, although it is most definitely present.

Moreover, thirdly, previous literature criticizes using models to measure aggregate managerial discretion on accruals (Saleh et al., 2007). The calculation critically hinges on the accuracy of the models to segregate into discretionary and non-discretionary accruals. Also, accounting techniques and estimates may be chosen to signal private information. Thus, the inability to distinguish clearly between efficient and opportunistic incentives can be seen as a limitation.

Lastly, the limitation is the problem of endogeneity, as discussed in section 5.1. In the baseline regression, we associate the level of earnings management with our CEO variables. However, the results may be biased due to an endogenous matching between the CEO characteristics and earnings management practices. In these cases, the causality can run from accrual management to the CEO profile and vice versa (Bouaziz et al., 2020). This can be seen as a problem, as it can be a threat to the study's validity. Endogeneity leads to biased and inconsistent parameter estimates that affect the reliable inference of the study. Thus, endogeneity can distort the impact of the CEO in the results due to omitted variables, simultaneous causality bias, or sample selection bias. Even if we use different measures, the endogeneity problem may still only be reduced to some degree. Therefore, it is difficult to eliminate the existence of endogeneity in our study entirely.

8.0 Conclusion

This study has sought to contribute to the existing literature on how CEO characteristics can affect a firm's propensity to engage in earnings management practices, measured by discretionary accruals. More particularly, we wanted to examine if the CEO characteristics, gender, age, tenure, board membership, and ownership influence earnings management practices. We have used three well-known models to evaluate earnings management, namely, the Jones model (1991), the Modified Jones model (1995), and the model by Kothari et al. (2005). The reason for using three models was to enhance the robustness of our results, thus, being able to compare them with each other and find out which model gave the most accurate and essential result. Unlike the extensive research that treats how and why public firms engage in earnings management, we have looked at private Norwegian SMEs, since SMEs make up the majority of all registered firms in Norway. Hence, by looking at CEO characteristics and earnings management in private Norwegian SMEs, we aimed to contribute to the topic of earnings management in Norway in a new and valuable way.

Using a sample of 43.304 private Norwegian firms from 2000 to 2018, our empirical results show a significant relationship between some of the CEOs' characteristics and discretionary accruals. Following previous findings from Alqatamin et al. (2017), Belot and Serve (2015), and Bouaziz et al. (2020), we initially proposed that the presence of female CEOs negatively affects earnings management practices. Contributing to this topic, our findings provide evidence that female presence negatively relates to earnings management. The result is consistent with previous findings from Bouaziz et al. (2020), Belot and Serve (2015), and Barua et al. (2010). This result was expected, as several studies have shown that women are more cautious, less aggressive, and more risk-averse in various private decision settings, and especially regarding financial decisions (Betz et al., 1989; Croson & Gneezy, 2009). Thus, our study may validate that women are slightly more ethical and risk-averse, and thus, less likely to engage in aggressive earnings management practices in Norwegian SMEs. This finding is proven to be robust for several model adjustments, including additional control variables, government-owned firms, and a structural break. The result may indicate that firms run by women have, on average, slightly better financial reporting quality than firms run

by men. However, to conclude this reasoning, future studies need to validate this finding, and to thoroughly examine the other factors that influence the financial reporting quality in Norwegian SMEs.

Further, following Bouaziz et al. (2020), we initially proposed that CEOs' age negatively affects earnings management practices. The previous literature regarding CEO age contradicts; however, our findings provide evidence that CEO age negatively affects earnings management practices. The findings from Alqatamin et al. (2017) and Bouaziz et al. (2020) are consistent with our result. Our result may validate that older people tend to be more ethical and likely to fear risk factors. Thus, the result supports that older people are less motivated to engage in earnings management practices in the Jones model and Modified Jones model. Moreover, following Chou and Chan (2018) and Gull et al. (2018), we initially proposed that CEO tenure negatively affects earnings management practices. The previous literature regarding CEO tenure was also contradicting. However, our finding provide evidence that CEO tenure negatively affects earnings management. This result is consistent with previous findings from Chou and Chan (2018), Gull et al. (2018), and Isidro and Goncalves (2011). Hence, the result may validate that CEOs with higher tenure have more experience and, therefore, report earnings less aggressively. Thus, our finding supports that CEOs with longer tenure are less motivated to engage in earnings management practices. These two findings are also proven to be robust for several model adjustments, including additional control variables, government-owned firms, and a structural break. However, age was not significant in alle the models, and they both reported low values. Thus, future studies could validate the findings, and examine if other factors enhance the results. It could be interesting to see if the results are generalizable or enhanced by distinguishing between different firm types and sizes.

Furthermore, following Bouaziz et al. (2020), we initially proposed that CEOs' board membership positively affects earnings management practices. Our finding did not support this hypothesis as the variables were not statistically significant. Thus, there is not sufficient evidence to conclude that there is a relationship between CEO board membership and earnings management practices. The variable also continued to be statistically insignificant throughout several robustness tests. Lastly, following Chou and Chan (2018) and Qawasmeh and Azzam (2020), we

initially proposed that CEOs' ownership positively affects earnings management practices. The hypothesis was not supported by our findings. Instead, the result reported a negative relationship. This result was interesting, as several studies show that managerial ownership may encourage managers to use discretionary accruals to improve earnings. The negative relationship could be explained by the fact that Norwegian companies often have low ownership concentration and little direct ownership. Thus, ownership in Norwegian firms is often characterized by long-term, and involved owners, which could be the reason why these owners engage less in earnings management practices. Our result supports a negative relationship between CEO ownership and earnings management for the Modified Jones model. However, this finding was not robust for several model adjustments, including additional control variables and the structural break. Hence, it is uncertain if our result regarding this variable is generalizable to other studies. Thus, further research needs to validate this finding.

In conclusion, our findings provide evidence that female CEOs, older CEOs, and CEOs with high tenure tend to engage in less earnings management in private Norwegian SMEs. Hence, by illustrating how some of the CEO characteristics affect the earnings management practices and consequently the financial reporting process, our thesis contributes to the existing literature in several ways. Firstly, our thesis contributes to the existing literature on the influence of CEO characteristics on corporate financial decisions. We contribute to the topic by providing evidence that CEO gender, CEO age, and CEO tenure influence earning management practices. Secondly, from our robustness tests, we have also found out that family firms and reported losses affect discretionary accruals, and surprisingly, audit quality and government-controlled firms did not have a significant impact. Thirdly, from the chow test, we found out that there is a structural break which explains why the discretionary accruals are higher in the years around 2006. This is likely explained by the realization principle introduced in 2005 or the tax reform in 2006. Our obtained results prove that the flexible accounting standards, modest supervision, low book-tax conformity and low litigation risk in Norway, present a fertile environment for earnings management in private Norwegian SMEs. Hence, our findings can be beneficial for several users of financial information such as investors, auditors, regulators, lenders, as well as other players in the capital market that are dependent on the financial reporting of private firms to make financial

decisions of their economy (Alqatamin et al. 2017). Further, the findings can also be necessary for board directors when they consider the benefits and costs of managers, as we have seen that their characteristics affect not only the company's performance but also their financial reporting decisions.

Since accounting manipulation and transparency of accounting information have been attracting the attention of researchers and practitioners over the last decades, our thesis opens up for further research in several ways. Firstly, research regarding the effect of managerial characteristics on earnings management is very limited for Norwegian companies. Thus, future studies can be enriched if researchers could investigate the effect of other managerial traits on the CEO characteristics and earnings management relationship. The profile of the CEO could include other characteristics that may affect earnings management, such as executive compensation, education, overconfidence, nationality, if the CEO is also a chairperson, civil status, if the CEO holds one of the top senior positions within other firms, and narcissism. Secondly, this thesis provides evidence that managerial characteristics influence earnings management practices. However, future studies could validate these findings, and thoroughly study the reason why female CEOs, older CEOs, and CEOs with high tenure, tend to engage in less earnings management in private Norwegian SMEs. Further investigation could also include the large Norwegian firms, including the listed firms, as it could be interesting to compare earnings management practices in SMEs and large firms and in private and public firms. Also, investigate the real earnings management, and not only accrual earnings management. Thirdly, our study also obtained some unexpected results. Thus, it could be interesting to further investigate the reason why CEO ownership and family firms have a negative effect on discretionary accruals. In general, the previous literature regarding the CEO characteristics on earnings management practices offers very contradicting results. Hence, future studies in this field could benefit from an investigation of why the results vary considerably between geographical patterns.

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10.0 Appendix

A1: Variables Received from CCGR

Item	Description
item_2	CEO gender
item_4	CEO birth year
item_6	Enterprise type
item_9	Revenue
item_11	Total operating revenue
item_15	Depreciation
item_16	Impairment,write-down of fixed assets and intangible assets
item_17	Bad debt
item_19	Operating income
item_22	Income from associated companies
item_39	Net Income
item_41	Dividends
item_45	Deferred tax asset
item_51	Total fixed assets (tangible)
item_63	Total fixed assets
item_65	Account receivable
item_76	Cash and cash equivalents
item_78	Total current assets
item_87	Total equity
item_91	Total provisions
item_98	Total other long-term liabilities
item_99	Convertible loans
item_100	Certificate loan
item_101	Liabilities to financial institutions
item_102	Account payable
item_103	Tax payable
item_104	Public duties payable
item_105	Dividends payable
item_106	Debts to companies in the same group
item_107	Bank overdraft (flexible as credit line)
item_108	Other short-term liabilities
item_109	Total current liabilities
item_15002	CEO gender
item_15004	CEO birth year
item_15006	Enterprise type
item_15009	Revenue
item_15011	Total operating revenue
item_15015	Depreciation
item_15016	Impairment write-down of fixed assets and intangible assets
item_15017	Bad debt
item_15019	Operating income
item_15022	Income from associated companies
item_15039	Net Income
item_15041	Dividends
item_15045	Deferred tax asset
item_15051	Total fixed assets (tangible)
item_15063	Total fixed assets
item_15065	Account receivable
item_15076	Cash and cash equivalents
item_15078	Total current assets
item_15087	Total equity
item_15091	Total provisions
item_15098	Total other long-term liabilities
item_15099	Convertible loans
item_15100	Certificate loan
item_15101	Liabilities to financial institutions
item_15102	Account payable
item_15103	Tax payable
item_15104	Public duties payable
item_15105	Dividends payable
item_15106	Debts to companies in the same group
item_15107	Bank overdraft (flexible as credit line)
item_15108	Other short-term liabilities
item_15109	Total current liabilities
item_11102	Industry codes
item_13411	Auditor name
item_13420	Company age
item_14022	Aggregated Fraction held by State Owners (ultimate ownership)
item_14504	Is Subsidiary (ultimate ownership)
item_14507	Is Independent (ultimate ownership)
item_15311	Ultimate ownership held by families
item_18007	Is CEO a board member
item_18011	The share owned ultimately by the CEO
item_18013	Tenure
item_17001	Listing status on Oslo Børs
item_17002	Listing status on Oslo Børs or Oslo Axxess

A2: Variable Definitions

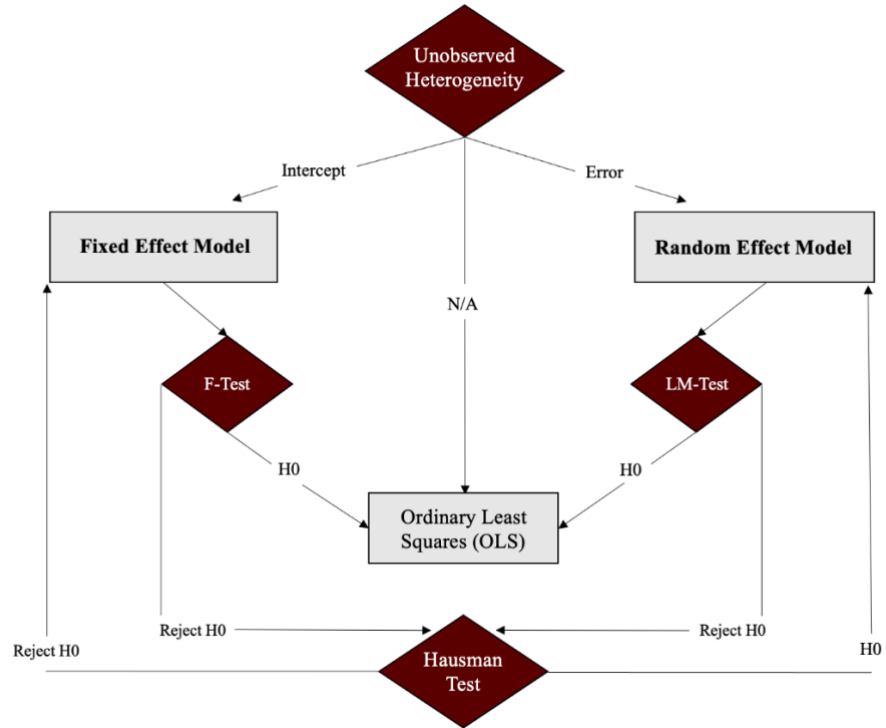
NAME	DEFINITION
Total assets (TA)	Total fixed assets (item 63) + Total current assets (item 78)
Total Accruals (TAC)	Δ Total current assets (item 78) - Δ Cash and cash equivalents (item 76) - Δ Total current liabilities (item 109) + Δ Short term debt (item 99 + item 100 + item 101 + item 106 + item 107 + item 108) + Δ Dividends payable (item 105) - Δ Depreciation and impairment (item 15 + item 16) - Δ Net deferred tax asset (item 45)
Revenue (Δ REV)	Δ Revenue (item 9)
Gross property, plant and equipment (PPE)	Total fixed assets, tangible (item 51)
Receivables (Δ REC)	Δ Account receivable (item 65) - Δ Bad debt (item 17)
Jones Model (DA JONES)	The absolute value of discretionary accruals, computed with Jones' (1991) methodology
Modified Jones Model (DA MODIFIED)	The absolute value of discretionary accruals, computed with a modified Jones model (see Dechow et al., 1995)
Model by Kothari et al. (DA KOTHARI)	The absolute value of discretionary accruals computed following Kothari's (2005) methodology

CEO Gender (GEN)	Dummy variable taking the value of 1 if the CEO is female, and 0 otherwise (item 2)
CEO Age (AGE)	Current time period t (yr) minus the CEO birth year (item 4)
CEO Tenure (TEN)	The number of consecutive years that the current CEO has been employed as CEO (item 18013)
CEO Board Membership (MEMB)	Dummy variable taking the value 1 if the CEO sits on the board of directors, and 0 otherwise (item 18007)
CEO Ownership (OWN)	The percentage of shares owned ultimately by the CEO at the beginning of the year (item 18011)
Firm Size (SIZE)	Natural logarithm of total assets for firm i at the end of year t (item 63 + item 78)
Profitability (ROA)	Return on assets for firm i in year t , defined as Net income before interest, taxes, and extraordinary items, measured as Operating income (item 19) + Income from associated companies (item 22) scaled by average Total assets (item 63 + item 78)
Leverage (LEV)	Leverage ratio for firm i in year t , defined as Interest bearing debt measured as Total other long-term liabilities (item 98) - Total provisions (item 91) + Total current liabilities (item 109) - Account payable (item 102) - Tax payable (item 103) - Public duties payable (item 104) - Dividends payable (item 105) scaled by Total assets (item 63 + item 78)

Growth (GROW)	The average value of one-year growth in revenue (item 9) measured as $\left(\frac{Revenue_{it}}{Revenue_{it-1}} - 1\right)$
Firm Age (FIRM)	Years of existence of the company since its creation defined as company age (item 13420)
Auditor (BIG4)	Dummy variable taking the value 1 if the company is audited by one of the big four auditors or their forerunners (Deloitte, PriceWaterhouseCoopers, Ernst & Young or KPMG), and 0 otherwise (item 13411)
Family Firms (FAMILY)	Dummy variable taking the value 1 if the majority of shares is owned by the family, meaning at least 50 percent, and 0 otherwise (item 15311).
Loss (LOSS)	Dummy variable taking the value 1 if the company's income in year 1 is negative, and 0 otherwise (item 39).

A3: Panel Data Modeling Process

Panel data modeling process (Park, 2011)



A4: Econometric Tests

Tests	Homogeneity Test	Heteroscedasticity	Specification Test	Serial Correlation Autocorrelation
Models	Fisher Test	Breusch Pagan Test	Hausmann Test	Wooldrige Test
DA JONES	387,49 (0,000)***	9859,58 (0,000)***	631,15 (0,000)***	86,658 (0,000)***
DA MODIFIED	393,27 (0,000)***	11075,67 (0,000)***	641,98 (0,000)***	79,685 (0,000)***
DA KOTHARI	220,59 (0,000)***	5619,74 (0,000)***	461,52 (0,000)***	53,485 (0,000)***

A5: Preliminary Thesis

PRELIMINARY MASTER THESIS

**The effect of CEO Characteristics on Financial Reporting Quality of
Norwegian SMEs**

Program:

Master of Science in Business - Major in Accounting and Business Control

Assigned Supervisor:

Ignacio Garcia de Olalla Lopez

Submission Date:

15.01.2021

Campus:

BI OSLO

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1.0 Introduction

Financial reporting refers to standard practices to give stakeholders an accurate depiction of a company's finances, including their revenues, expenses, profits, capital, and cash flow, as formal records that provide in-depth insights into financial information (Alexander, 1990). Further, the financial reports exist to give the existing and potential stakeholders, loan creditors, the employees of the company, customers, competitors, the public, and the government an idea of how the financial health of the company is and have developed during the last period. This information is vital for management to make decisions about the company's future and provides information about profitability and financial stability.

Laws require most businesses to release financial statements to the public, and the companies are subject to follow a set of accounting principles (Regnskapsloven [Accounting Act], 1998). The accounting principles are a set of rules that encompass the details, complexity, and legalities of business and corporate accounting. "Executive directors are responsible for the accuracy of the financial statements as well as for any mistakes or fraud in financial statements" (Modaresi & Nazaripour, 2013, p. 100). Hence, one of the duties of executive directors is to manage and control the performance of the personnel.

Mackey (2008) shows that the CEO has a significant impact on the actual performance of the company. In terms of this, recent studies in the field have shifted focus from outstanding factors to factors inside the firm. According to Zhang (2019) accounting literature often looks at managers as individuals that make financial reporting decisions based on their characteristics and economic incentives. A key question in leadership research is, therefore, whether the CEO matters. CEOs are appointed with the expectation that they will make sensible management decisions to maximize shareholder value (Armstrong et al., 2010). The information in financial statements allows outsiders to measure how efficient the CEO is in fulfilling such an expectation. CEOs also take an interest in accounting numbers and profits in particular, because their compensation incentives are closely tied to reported earnings.

Wasserman et al., (2010) argues that CEOs are so constrained by their environment, that they have little ability to affect companies' performance. They further state that a company's culture, the structure of its industry, and its fixed

assets are all constraining factors that reduce the CEOs' ability to take actions that will have an impact on the company. On the other hand, even though the companies follow accounting principles, previous studies have shown that there are ways to manipulate or affect financial reporting. Hermalin & Weisbach (2001) stated that CEOs put pressure on the financial directors into manipulating the income of the company. This, to be able to present a better performance-based image to the company's board of directors, when and if the CEO feels that it is necessary. (Healy (1985) also argues that managers who have incentives like bonus awards, are inclined to select accounting procedures and accruals to maximize the company's value, and by this maximizing the value of the said managers' bonus.

Motivated by personality characteristics, earnings management, and earnings quality, this thesis aims to investigate different aspects of personality characteristics of executive management and their impacts on financial reporting quality.

The first part of this preliminary thesis consists of a literature review. The objective of the literature review is to show the development of literature, as well as identifying the knowledge gaps in this research area. Further, we are going to present the research question and the developed hypotheses. Moreover, we will present our research methodology including the research strategy and the data collection, and at the end, our plan for the thesis progression.

2.0 Literature Review

This section shows a comprehensive literature review on our selected topic, showing the previous literature and research which is done in this field. The literature review starts with financial reporting theories, thereby financial reporting in SMEs, followed by financial reporting quality, moving on to firm characteristics on financial reporting quality, and lastly managerial characteristics on financial reporting quality.

2.1 Financial Reporting Theory

Financial decisions and reporting are some important aspects for a company and the management. Financial accounting theory focuses on the reasons why transactions are reported in certain ways (Alexander, 1990). The high quality of a company's financial reporting will help not only the managers but also external investors and other capital providers to easier make the right and fast economic decisions (Gjerde et al., 2011). Given the importance of quality in a company's financial reporting, some theoretical frameworks have emerged.

2.1.1 Agency Theory

Eisenhardt (1989) stated that Agency theory is an important contribution to the organization theory. The theory discusses the problems that surface in the firms due to the separation of owners and managers and emphasizes the reduction of this problem. Further, this theory helps in implementing the various governance mechanisms to control the agent actions in the jointly held corporations. The agency theory or the agency problem can exist in firms with a dominant shareholder, like many SMEs are (Hillier et al., 2013). Many modern companies today are having dispersed ownership, which leads to the separation of ownership from control, and raises a major issue whether these managers are performing for the owners or themselves. In these types of companies, it is possible that decisions that are being made, are taken by one individual at the expense of smaller shareholders. Hence, the managers are acting on behalf of the dominant shareholder, at the expense of the smaller ones. (Boučková, 2015) states that the theory is one of the most important theories in managerial accounting, and Panda & Leepsa (2017) have found that ownership structure, executive ownership, and board structure also can reduce the agency problem. Irwandi & Pamungkas (2020)

claims that almost perfect financial reporting will reduce asymmetry in the information between the principal and agent, or the owner/shareholder and the manager, and this will again lead to a reduced agency problem.

2.1.2 Information Asymmetry Theory

To be able to use the information to make decisions, the stakeholders of a company are dependent on the information that is reliable and relevant. A fundamental role of accounting information is to serve as a basis for capital allocation. Hence, an important attribute of the quality of accounting information is the extent to which earnings map into cash flows. Poor controlling of accruals into cash flows reduces the information in the reported earnings and results in lower-quality earnings. If investors differ in their ability to process this information, then poor earnings quality can exacerbate the information asymmetry in the market (Diamond & Verrecchia, 1991; Kim & Verrecchia, 1994). Bartov & Bodnar (1996) suggests that managers that wish to maximize the firm's values have higher incentives to reduce the existence of information asymmetry in their organization. The way to do this is to utilize correct and direct accounting techniques. Further, Miglo (2010) states that "Information asymmetry exists in almost every facet of corporate finance and they significantly complicate the managers' ability to maximize firm values" (p.8). An important part of accounting is the transmission of financial information to the stakeholders that need it. The financial reports are the basis of this. Without the financial reports, there is little to no way that SMEs can be able to display their economic positions to their creditors, customers, and other stakeholders.

2.1.3 Earnings Management Theory

There are many motivations for firms to act on earnings management and given the inefficient market that we live in today, it can be assumed that the management will try to take advantage of the information asymmetry that exists. The concept of earnings management is thoroughly studied, and several definitions have different focuses. Schipper (1989) first defined earnings management as "a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain" (p. 92). Healy & Wahlen (1999) said that "Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to

either mislead some stakeholders about the underlying performance of the company or to influence contractual outcomes that depend on reported accounting numbers” (p. 368). (Beneish, 2001) on the other hand, looked at earnings management more like a calculated timing of real decisions. Even though some of the definitions make it seem like something illegal, or something that has a resemblance to fraud, there is a difference (Beneish, 2001; Diri, 2017; Ronen & Yaari, 2008). Hence, earnings management is always within the accounting regulations, if not the phenomenon cannot be characterized as earnings management. Ronen & Yaari (2008) focus on the fact that it is a deliberate misrepresentation, some on misrepresentation within the lines of the regulations, and lastly, some focus on earnings management being a way of transparency in the financial reports. Diri (2017) explains three of the motivations for conducting earnings management. Firstly, private benefits for the management, secondly, misleading the stakeholders, and lastly, for the stakeholders’ benefit.

2.2 Financial Reporting in SME Companies

Small and medium-sized enterprises (SMEs) are enterprises that have lower numbers when it comes to revenues, assets, or employees than a certain threshold (Hillary, 2017). Small and medium-sized businesses are defined differently in various countries, and Lopez-Gracia & Aybar-Arias (2000) defines small and medium-sized businesses as companies with yearly sales of 16 million dollars or less. Loecher (2000) states that SMEs are the efficient motor of the economy, and since they have such an important position in the world's economy, the accounting information provided by them must have the same role. This is also backed up by Sava et al. (2013), which claims that the accounting information provided by SMEs should be as important as their position in the economy. Hence, though small in size, small and medium-sized businesses play an important role in the economy, and the SME companies have become one of the fastest-growing sections of the business community.

2.2.1 Small and Medium-Sized Business in Norway

In Norway, it is common to define small and medium-sized companies as companies with less than 100 employees (NHO, n.d.). Companies with 1-20 employees are defined as small, companies with 21-100 employees as medium-

sized, and companies with over 100 employees as large. Small and medium-sized businesses make up more than 99% of all companies in Norway, and 47% of the employees in the private sector. Together, they account for almost half of the annual value creation in the country, close to NOK 700 billion.

2.2.2 Financial Reporting in Norway

The Norwegian Ministry of Finance is today responsible for the financial reporting regulations in Norway (Finansdepartementet, 2020). They are responsible for the laws and regulations that decide how and what all companies in Norway should report on their economic status. The accounting act covers regulations on basic accounting principles and good accounting practice. Further, the act covers regulations on the preparation of the annual financial reports. All SMEs in Norway that prepare financial reports are obligated to follow “GSR” which means good accounting practice (EY, n.d.). In 2005 companies in Norway started to follow the international financial reporting standards (IFRS). However, these reporting standards are only obligatory for listed companies (EY, n.d.).

2.3 Financial Reporting Quality

The main objective of financial reporting is to provide information that is useful to existing and potential investors, creditors, and others in making investments, and similar resource allocation decisions (Christian & Lüdenbach, 2013). Therefore, it is an important aspect for firms to produce high-quality financial reporting.

2.3.1 Characteristics of Financial Reporting

A key issue that impacts directly the nature of research in financial reporting quality is the measurement of the quality of financial reports. A useful categorization of measurement tools is provided by van Beest et al. (2009) who identify four broad and not restrictive categories: accrual models, value relevance models, specific elements of financial reports, and methods that operationalize the qualitative characteristics. The accrual and value relevance model focus on earnings quality measurement. Accrual models are used to measure the extent of earnings management under current rules and legislation. These models assume that managers use discretionary accruals, which are accruals over which the

manager can exert some control, to manage earnings (Dechow et al., 1995; Healy & Wahlen, 1999). Earnings management is, therefore, assumed to negatively influence the quality of financial reporting by reducing its decision usefulness (Brown, 1999; van Tendeloo & Vanstraelen, 2005).

2.3.2 Financial Statement Manipulation

Financial statement manipulation is the practice of altering a company's financial records to present a false or inaccurate picture of its financial condition.

Accounting tricks are often used to make a company's financial statements reflect what the company wants its performance to look like rather than its actual performance (Stolowy & Breton, 2001). Vander Bauwhede et al. (2015) found that there is an important economic benefit of rightful and high-quality financial reporting of SMEs, as this will reduce information asymmetry between the companies and their creditors.

A well-known phenomenon for financial statement manipulation is a systematic understatement of results, also known as “big bath”, which is a kind of manipulative accounting (Stolowy & Breton, 2001). One of the first authors to talk about the phenomenon was Moore (1973). An explanation of the phenomenon is a company, or a CEO is manipulating the income in a poor year by degrading the income further, and thereby reporting even more loss than it actually is, is “taking a bath”. Hence, the upcoming period or year will look better, and this makes future results look attractive. The top-level executives of a firm can contribute to this. If they feel that the target cannot be achieved in a current year, they can shift the little profit which they are expecting to earn in several ways, like making write-offs, prepaying expenses, or writing receivables. Thus, in the next year, they show an inflated number of the profit stating that they have done exceptionally well and achieve a bonus to a greater magnitude.

2.4 Firm Characteristics and Financial Reporting

The focus on the quality of the information in the annual financial reports of a company has increased during the last decades. Hence, the relationship between the quality of the information in the reports and the characteristics of the companies has been thoroughly studied (Aljifri et al., 2014).

2.4.1 Measure on Financial Reporting Quality

The financial reporting quality can be measured from accruals models which examine the level of earnings management as a proxy for earnings quality. In terms of this, earnings quality has two major components, cash flow and accounting elements (Belot & Serve, 2015). According to previous literature on financial reporting, companies can smooth earnings or manage earnings as a tool to avoid reporting a loss (Shuli, 2011). The main advantage of using accruals models to measure earnings management is that it can be calculated based on the information in the annual report, which is the reason that we will focus on this aspect to measure financial reporting quality.

Accruals

From the accounting elements, we can calculate accruals that distinguish a firm's operating cash flow from its reported earnings. Accruals quality is an earnings quality metric and indicates the extent to which accruals, which is the part of earnings that is not cash but stems from accrual accounting (Vander Bauwhede et al., 2015). By including accruals in the calculation of earnings, there is an implicit notion that a dollar of accruals will convert into a dollar of cash flows (Bloomfield et al., 2015). However, in the context of working capital accruals, this can vary, and a dollar of accruals can be worth more in some firms than in others. This may occur due to the firm's accounting policies, the composition of accruals, estimation errors, or manipulation. If a firm systematically overestimates or underestimates the allowance for doubtful accounts, then a dollar of accounts receivable will convert into more or less than a dollar of future cash flows. Hence, when the expected cash value of a dollar of accruals varies across firms, the addition of accruals and cash flows reduces the comparability of earnings. Total accruals equal the difference between net income and cash flow from operations. Total accruals may not stem from voluntary earnings manipulations, hence instead we can use discretionary accruals that can be calculated by the Jones model to be able to calculate the accruals.

Cash Conversion Rate

From the cash flow, it is possible to calculate a cash conversion rate, which one could consider to be an alternative measure of accrual quality (Bloomfield et al., 2015). (Dechow et al., 1995) typically assume that the average conversion rate of

a dollar of accruals to cash is one. However, there are many reasons why there could be variation in the average conversion rate. The different scenarios could be financial reporting choices, inventory, and accounting estimation errors (Bloomfield et al., 2015).

2.4.2 Control Variables

Following Ashbaugh-Skaife et al. (2008) and Hope et al. (2013), it is possible to define several control variables to find the effect on the dependent variable. Belot & Serve (2015) defines some control variables used to study if females engage less in earnings management than men. They claim that rapidly growing firms are likely to report noisier accruals because they invest to anticipate future sales. Differences in firms' asset structures can be measured as the proportion of tangible and intangible assets and are also likely to induce differences in accruals adjustments. The volatility of the firm's operating revenues can also be taken into account because it can cause estimation errors in accruals. Hence, it is possible to use some proxies for size, sales growth, asset structure, and the volatility of operations which gives a proxy on the logarithm of total assets. Growth can be measured by the average value of one-year sales growth computed over a selected-year period, and PPE is the ratio of property, plants, and equipment to total assets. ROA can be measured as the standard deviation of return on assets computed over a selected-year period. It is also beneficial to include several variables to capture firms' default risk and financial distress situations because prior research suggests that firms facing financial difficulties report larger discretionary accruals. The leverage can be computed as the ratio of financial debts to total assets, and losses can be calculated as the cumulative percentage of a selected year-period in which a firm reports loss.

2.5 Managerial Characteristics and Financial Reporting

The relation of CEO characteristics and financial reporting is expected because financial statements are prepared and published by the interaction of the external auditors and managers. The upper management is not only going to certify its company's financial reports but also to take responsibility for any wrongful or misleading statements within them. Skala, (2008) indicates that CEO gender can play an important role when it comes to overconfidence in corporate policy

decisions such as financing, dividends, and corporate governance. Modaresi & Nazaripour (2013) claims that every company needs to consider the personality characteristics of their executive directors to be able to maximize the stakeholders of the company's wealth.

2.5.1 CEO Gender on Financial Reporting

A related but much more visible characteristic of CEOs' effect to influence managerial reporting behavior is CEO gender. Ethical differences between the genders have been widely examined in the business ethics literature. The stream of the literature suggests that the genders have distinctly different values and interests and vary in their inclination to engage in unethical business behavior (Betz et al., 1989; Croson & Gneezy, 2009; Zalata et al., 2019).

Some findings suggest that female executive directors will indicate a company with higher accounting quality (Barua et al., 2010), more conservative financial reporting (Ho et al., 2015), and a lower amount of fraudulent misrepresentation of the financial reports (Sun et al., 2019). Further Croson & Gneezy (2009) found that female directors often are more risk-averse and ethical than their male counterparts. Therefore, they are less likely to engage in things like aggressive earnings management. Based on this, CEO gender provides an interesting basis for examining if there are any differences in the financial reporting quality between genders.

2.5.2 CEO Age on Financial Reporting

Huang et al. (2012) and Khuong & Vy (2017) have contributed to the literature of CEO age having an impact on the quality and timeliness of financial reporting. Older CEOs are more likely to be conservative when recognizing gains, and it has also been shown that they are less likely to take part in earnings management (Huang et al., 2012). Further, older CEOs are more ethical and less likely to have financial restatements. Khuong & Vy (2017) found that all this results in auditors spending less time when conducting the audit process, and by that, the timeliness of the financial statements increased with older CEOs.

2.5.3 CEO Turnover on Financial Reporting

Gilson (1999) found that “reductions in managers’ wealth and utility due to financial distress are proxied by the turnover of senior managers” (p.314). Further,

Desai et al., (2006) found that 60 percent of firms that had restated their financial reports experienced a turnover of one or more top managers within 24 months of the restatement. Habib & Hossain (2013) discuss these results further and claims that if the efficient labor market for managers makes it difficult for managers to find comparable employment, then this would discourage them from engaging in the manipulation of the financial reports. This can imply that the CEO turnover ratio in a company can say something about the quality of the company's financial reports.

3.0 Research Question and Hypotheses

This section contains a description of our research question and developed hypotheses. The section will cover what we want to examine, and how we break this up into hypotheses to determine its validity.

3.1 Research Question

From the reviewed literature, our thesis aims to explain if some CEO characteristics can affect the companies reporting quality, by controlling for some characteristics like gender, age, and turnover. It aims to investigate if these characteristics contribute to earnings management and affect the earnings quality which again affects the reporting quality. Our research question is, therefore: *How do CEOs' characteristics affect the reporting quality of Norwegian SMEs.*

3.2 Possible Hypothesis

From previous literature by Brown (1999); van Tendeloo & Vanstraelen (2005) we know that earnings management is assumed to negatively influence the quality of financial reporting. We also know that earnings can be measured into two major components, cash flow and accounting elements (Belot & Serve, 2015). Hence, accruals are a measure of accounting elements and the cash conversion rate is a measure related to the cash flow. In addition to this, when using regression models, it is possible to examine the effect of company characteristics on the extent of earnings management (Dechow et al., 1995; Healy & Wahlen, 1999). Grounded in this information, and the findings from the literature review,

we propose two following possible hypotheses to look at some CEO characteristics on financial reporting quality:

Hypothesis one

Based on the findings from Na & Hong (2017), which found that male CEOs are likely to use aggressive discretionary accruals and real activities operations in order to report small positive earnings or small earnings increases, whereas female CEOs are not likely to engage in aggressive earnings management, we define our first hypothesis as:

***H1:** Firms with female CEOs use less aggressive discretionary accruals than firms with male CEOs*

Hypothesis two

Based on that Bloomfield et al. (2015) explored the association under the intuition that a low conversion rate is indicative of poor financial reporting which can include earnings management, we define our second hypothesis as:

***H2:** Firms with female CEOs will have a higher cash conversion rate than firms with male CEOs*

We assume that these parameters will reflect the financial reporting quality but may alter it to some degree if that is necessary for the purpose of this study.

3.3 Our Contribution

Our thesis will contribute to the existing literature in multiple ways. The area of financial reporting is highly researched, trying to find various facts surrounding the quality of it. A major part of the earliest research is focusing on external factors like accounting standards, convergence, economic crisis, and growth in disclosure requirements (Herath & Albarqi, 2017). However, more recent research has shifted the focus over to internal factors, because now more companies follow the same accounting standards. Some studies have, therefore, tried to find out if some managerial characteristics can affect financial reporting quality. In terms of this, our study aims to investigate the managerial characteristics of financial reporting, which is highly relevant in the field of accounting and business control.

Next, the research for this topic on Norwegian companies is very limited. Most of the available research on the quality of financial reporting is based on studies of listed companies based in Asia or the U.S. The available data for SMEs is more limited since the smaller companies does not have the same reporting requirements as a listed firm. We, therefore, believe that it is more relevant and interesting to look at the SME market in Norway, as there is usually a greater difference in the reporting quality.

Lastly, our thesis will enlighten the effect of gender, age, and turnover on earnings management, hence on earnings quality for Norwegian SMEs. Norway is seen as one of the most gender-equal countries in the world and has high requirements for a CEO. Previous studies have concluded that female CEOs tend to report firm performance more conservatively, which implies that they are more cautious in recognizing gains compared to losses than male CEOs (Francis et al., 2009). We, therefore, want to examine if this is the same case for Norwegian companies.

4.0 Research Methodology

This section contains a description of the chosen research methodology for our thesis. The section will cover our topics research strategy and the chosen data collection method.

4.1 Research Strategy

In the research strategy, one can either use quantitative data or qualitative data. Quantitative data are expressed in numbers, and the research strategy consists of collecting and analyzing the numerical data. The qualitative research method consists of collecting and analyzing data that are expressed in words, non-numerical data.

The objective of this thesis is to provide evidence that some CEO characteristics can affect financial reporting quality. In terms of this, we will rely on collecting numerical data in order to use statistical regression models to investigate the validity of our chosen hypotheses. Our research methodology will, therefore, consist of a quantitative approach.

4.2 Omitted Variable Bias

When studying some characteristics like gender, age, and turnover this can often lead to endogeneity, which then can cause an omitted variable bias because the error-term is correlated with at least one of the explanatory variables (Singer & Caves, 2017). This problem can often lead to biased and inconsistent parameter estimates because of omitted variables, measurement errors, selection bias, or simultaneity. Endogeneity and omitted variable bias is not something we want, however, this could potentially occur in our study if we self-select or omit some variables that might impact the CEOs. There are two main methods for mitigating the omitted variable problem. The first method is to make an instrumental variable or a dummy-variable regression. However, the instrument variable has to satisfy both the relevance and exogeneity assumption, and that could bring some difficulties. The second method is to use panel data regression with either fixed effects or random effects. Due to the difficulties with an instrument variable, we think that the most appropriate method is by using panel data.

4.3 Data Collection

We want to study if different characteristics of a CEO can affect the quality of the financial reporting of a company. We are therefore in need of both cross-sectional data and time-series data. Cross-sectional data is defined by Levin (2006) as data collected at one period in time or over a short period. The studies of cross-sectional data can be seen as “snapshots” of what you are trying to study. To look at the effect over time we also need time-series data, which is defined by Velicer & Fava (2003) as single units or individuals that are repeatedly observed over time. As opposed to cross-sectional data, time-series data and studies can be seen as longitudinal (Velicer & Fava, 2003).

The data will be gathered from the CCGR database, and will, therefore, be secondary data. Hence, as stated above it will be appropriate for this study to use a panel data regression model. Arellano (2003) defines panel data as economic data with both time series and cross-sectional data and explained panel data as “any data set with repeated observations over time for the same individuals” (p.1). We are going to limit the data to some chosen years and expect to do some data

cleaning before using the dataset.

4.4 Model Estimation

The objective of this study is, as we have stated above, the different characteristics of a CEO that can affect the quality of the financial reporting of a company. We will base our model on Schoar & Bertrand (2003) model for panel data and adjust the model to fit our study. We purpose to estimate the following regression model:

$$Y_{it} = \alpha_t + \gamma_i + \beta_1 FEMALE_{it} + \beta_2 X_{it} + \varepsilon_{it}$$

In this model, i represents the firm index, and t represents time. Further, Y_{it} represents the dependent variable, which is one of the measures of financial reporting quality. As stated above, earnings management can give a proxy on financial reporting quality. Hence, ways to measure earnings quality is by using (1) *accruals* or (2) *cash conversion rate*. Moreover, α_t are time fixed effects and γ_i are the firm fixed effects. The variable $\beta_1 FEMALE_{it}$ is the main CEO characteristic and the managerial trait of interest in this study. FEMALE will be a dummy taking the value of 1 if the CEO is a female, and 0 otherwise. The $\beta_2 X_{it}$ represents the vector of firm control variables. These could be leverage, PPE, growth, loss percent, ROA, and the logarithm of total assets. Lastly, ε_{it} is the error term.

This is a proposed model estimation, hence, we may alter this model to some degree, to achieve a better-suited model for our study purpose. We are also going to run several statistical regression models to investigate the validity of our hypotheses.

5.0 Plan for Progression

The table under shows our plan for thesis progression. In between these activities, we will also schedule a meeting with our supervisor. We are trying to have three scheduled meetings with the supervisor. The first meeting will be scheduled after the first activity, mostly to be prepared for the data collection and processing part.

The second meeting will be scheduled after the data analysis, and the third meeting will be scheduled after the first draft is finished.

Table 1: Plan for Thesis Progression

Activity	Description	Deadline
Establish the theoretical framework	We will define the relevant theoretical framework based on our literature review	January 2021
Collect data	Find and collect the data from CCGR	January - February 2021
Data processing	Process the data from CCGR	January - February 2021
Data analyzing	Begin with the descriptive statistics and run the regression	February - April 2021
The first draft finished	Finishing the first draft	April - May 2021
Review and proofreading	Finalizing and making any changes proposed by the supervisor. Proofreading	May - June 2021
Hand in the final version	Trying to deliver it during June month. The final hand-in date is 1st of July	1. July 2021

6.0 References

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