THE THREAT OF MANAGEMENT OPPORTUNISM AS A MOTIVATOR FOR AUDITOR CHANGES IN NORWEIGAN PRIVATE FIRMS – An empirical study of earnings management & auditor changes

Master thesis, regnskap og revisjon

by

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Abstract

The reasons for audit changes are typically poorly documented and at times speculated to be due to management’s desire to engage in opportunistic earnings management. This study examines the occurrence of earnings management around audit changes in small Norwegian limited firms (AS). Our dataset of firm characteristics and financial records is gathered from the SNF Database. Discretionary accruals are estimated for firms in our sample and are used as a proxy for earnings management. We present evidence that suggests there is no significant occurrence of income increasing earnings management surrounding audit changes, but we do find evidence for audit changes that may be initiated due to the incumbent auditor’s conservatism. We also find evidence that firms with small auditors that later switch to conservative big auditors are subject to larger negative discretionary accruals. Finally, we find evidence that audit changes in which the firm received a modified audit opinion in the year prior to the change are also subjected to larger negative discretionary accruals when compared to audit change firms that received an unmodified audit opinion. Our findings suggest that for private Norwegian firms the motivation for audit changes is not management’s desire to find a more lenient auditor in order to manipulate earnings.

I identified essential papers by searching Oria (NHH’s library search interface for all available literature) for academic papers containing the following keywords in both Norwegian and English: auditor changes, audit change, auditor switching, auditor rotation, earnings management, discretionary accruals, total accruals, audit quality, opinion shopping, audit shopping, audit-qualifications, earnings management and private firms, Norwegian earnings management, total accruals.
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1. Introduction

Since the passage of the Sarbanes-Oxley Act of 2002 (SOX), a reactionary regulation enacted as a consequence of one of the largest financial scandals in the U.S., roughly half of the U.S. public firms registered with the Securities Exchange Commission (SEC) changed auditors without providing a reason for the changes (Grothe & Weirich, 2007). SOX was passed to improve the reliability and accuracy of financial statements, while at the same time increasing the penalties for misconduct. One of the primary roles of auditors is to ensure accuracy in financial statements, and therefore ensure compliance with standards and regulations such as SOX. Grothe and Weirich (2007) reported that a significant amount of these firms changed from a Big Four to non-Big Four auditor, and the motivation behind some of these changes is speculated to be the managements’ desire to manipulate earnings. The topic of auditor change and earnings manipulation is of great importance to regulatory bodies (i.e. the SEC) who are concerned that these changes can be driven by management opportunism to distort reliable earnings reporting.

Given the recent case of PricewaterhouseCoopers (PwC) vs. Troms Kraft the subject of auditor change and earnings management has current relevance in Norway. The financial scandal surrounding Troms Kraft’s Swedish subsidiary, Kraft and Kultur AB (K&K), is related to the reporting of fictitious revenues over a period of ten years amounting to approximately 1.7 billion NOK. Shortly after Kraft and Kultur had received remarks from their auditor PwC with regards to their accounting practices, the firm fired PwC and replaced them with a non-Big Four firm. It is speculated that PwC was fired due to management’s desire to engage in opportunistic behavior (e.g. illegal earnings management) (Endersen, 2013).

Over the years a growing body of research has focused on examining the underlying motives for audit changes and its impacts on audit quality (Brandon, Carver, Hollingsworth, & Stanley, 2012; W. N. Davidson, Jiraporn, & Dadalt, 2006; DeFond & Subramanyam, 1998; Francis & Wilson, 1988; Grothe & Weirich, 2007; Menon &
Williams, 1994; A. J. Richardson, 2006; Schwartz & Menon, 1985; Williams, 1988). Although significant interest in the topic remains, most academic research has found little or weak evidence that auditor changes are opportunistically driven (Chow & Rice, 1982; W. N. Davidson et al., 2006; M. Defond, 1992; DeFond & Subramanyam, 1998; Francis & Wilson, 1988; Smith, 1986).

With a focus on the opportunistic reasons behind audit changes, studies have examined the topic of *earnings management as a motivator for auditor changes* in U.S. based firms (W. N. Davidson et al., 2006; DeFond & Subramanyam, 1998). These studies examine the extent of earnings management, as measured through discretionary accruals, before and after auditor changes. Findings largely support that there is minimal evidence of systematic earnings management following auditor changes (W. N. Davidson et al., 2006; DeFond & Subramanyam, 1998). Davidson et al. (2006) extended the work of DeFond and Subramanyam (1998) by additionally examining the relationship that auditor firm size and audit opinion (a proxy for audit quality) has on earnings management. In this analysis they identified certain conditions where auditor changes were in fact indicative of opportunistic behavior when firms changed auditors following a modified audit opinion.

The aim of this study is two-fold. First we examine the types of audit changes observed in Norwegian firms within our study period. We categorize the types of audit changes and describe some of the characteristics of audit change firms. The goal is to survey the types of audit changes (i.e. big to small, small to small, small to big) observed in small Norwegian limited firms for the years 2011 to 2012 and the distribution of big vs. small audit firms in the data set.

Motivated by the Troms Kraft scandal, we extend the work of Davidson et al. (2006) and DeFond and Subramanyam (1998) to small Norwegian limited firms, and examine the earnings management–auditor change question. We examine the occurrence of earnings management, as measured by discretionary accruals, around audit changes. Our goal is to identify the scope of earnings management before and after audit changes, and if earnings
management may be a motivation for audit changes. Additionally, the analysis includes a control for the type of prior audit opinion as an attempt to detect audit shopping in our data set. Based on prior research we make a number of hypotheses. First, if firms engage in audit shopping with the intent of distorting earnings we expect earnings management to be income increasing in the year of the change and increasing from the year prior to the change. Second, when firms change from a big audit firm to a non-big audit firm we argue that firms may be shopping for a lower quality audit and are more likely to engage in income increasing earnings management. Finally, when firms change auditor after having received a modified audit opinion we argue that these firms are more likely to engage in earnings management.

In our sample we do not find pervasive evidence for earnings management around audit changes, but we do observe some significant variations in discretionary accruals around the event. Estimates of discretionary accruals before and after audit changes suggest that the prior auditor’s conservatism may be a possible cause for the audit change. We also find evidence to support the notion that clients of big auditors, whose predecessor auditor was a small auditor, may face more conservative accounting practices. Results also support the conclusions of DeFond and Subramanyam (1998) suggesting that firms receiving a modified audit opinion prior to the audit change pose a greater litigation risk and therefore the new auditor uses conservative accounting choices to mitigate this risk. Finally, we find evidence to support that firms that change from a small to big auditor following a modified audit opinion experience larger negative discretionary accruals that those firms that switch to another small auditor. This suggests that although all firms that receive a modified audit opinion experience income decreasing discretionary accruals prior to the audit change, if the switch is to a big auditor this results in a larger magnitude of income decreasing discretionary accruals. Again, this implies that the big auditor is more conservative with their new client.

Our paper contributes to the earnings management literature by providing an analysis of audit change and earnings management for private firms in Norway. We identify that earnings management is limited around audit changes and that the external auditor has an
important effect on the direction of reported earnings after the change. Any opportunity the management may be seeking is likely limited by the conservative nature of the new auditor. This is especially true for firms that switch auditor following a modified opinion. Results indicate that auditors are conservative with new clients that pose a litigation risk, and that this conservatism seems more pronounced in big auditors. Generally we provide supporting evidence for the results in Defond and Subramanyam (1998), and extend this analysis to private companies. This is useful information for standards setters that seek to find the appropriate accounting standards to ensure quality in accounting reports and investors that seek out quality accounting information in order to make sound decisions. The results indicate that audit changes are not necessarily a red flag, although cases like Troms Kraft suggests that some caution is still warranted.

2. Background and Previous Research

2.1. Earnings Management

2.1.1 Earnings management – a definition

Earnings management is not a technical term in accounting or finance, and it is somewhat challenging to frame a suitable definition for such a broad subject. Healy and Wahlen (1999) define earnings management to capture all information in financial reporting that has the potential to mislead stakeholders. They define earnings management as follows:

“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 economic performance of the firm, or to influence contractual outcomes that depend on reported accounting numbers” (Healy and Wahlen, 1999, p. 368)

There are two forms of earnings management: ‘real activities manipulation’ and ‘accruals
manipulation’. Real activities manipulation occurs when management knowingly alters financial statement earnings and engages in activities that have suboptimal business consequences with real cash flow consequences. These manipulations can be achieved by a number of methods such as changing the timing or structuring of an operation or investment (e.g., the foregoing of a profitable investment opportunity to meet the year’s earnings target). Accruals based earnings management occurs when management changes how it applies accounting standards (e.g., depreciation or estimation method) with the sole objective to steer the reported earnings in a particular direction with no direct cash flow consequences (Zang, 2012).

We focus of our study on the latter type of earnings management because the main objective is to examine evidence of accruals-based earnings management (i.e. those that have no cash flow consequences) under audit changes.

### 2.1.2 Evidence of earnings management

An extensive body of literature examines the issue regarding the occurrence of earnings management, and the vast majority of these studies suggest that there is evidence that managers do manipulate earnings for a variety of reasons. Collins et al. (2012) analyzed 32 previous studies that all show some evidence of earnings management around different events. These studies report evidence of earnings management around corporate events such as initial public offerings, stock acquisitions, stock repurchases, and dividend payments. However, nearly all of these studies are focused on public firms outside of Norway, with a large majority being based in the United States (Kothari, Leone, & Wasley, 2005; McNichols, 2000).

Although most firms in Europe are privately held the literature regarding the occurrence of earnings management in private firms is limited, even more so for studies focused on Norwegian private firms (Coppens & Peek, 2005). The reason for the scarcity of research on private firms is likely to be the result of the difficulty in obtaining data for these firms. To our knowledge, only a small number of studies address the issue of earnings
management within private firms and results indicate that there is evidence of earnings management (Abdolmohammadi, Kvaal, & Langli, 2010; Arnedo, Lizarraga, & Sánchez, 2007; Ball, 2005; Beatty & Harris, 1999; D. C. Burgstahler, Hail, & Leuz, 2006; Coppens & Peek, 2005; DeGeorge, Patel, & Zeckhauser, 1999; Moltu & Husa, 2012; Petroni, Ryan, & Wahlen, 2000; Reksten & Kristiansen, 2011; Van Tendeloo & Vanstraelen, 2008). Coppens and Peek (2005) study private firms in eight countries in Europe and found evidence of earnings management in six of those. Other studies have shown that the occurrence of earnings management in private non-US firms is particularly prevalent for highly leveraged firms (Abdolmohammadi et al., 2010). Moltu & Husa (2012) conducted a thesis study on the level of earnings management in thirteen European countries and concluded that earnings management is present among Norwegian private firms, with Norway having the fifth highest occurrence of earnings management when compared to the other countries. Norway ranked higher for earnings management than Sweden and Denmark. Reksten and Kristiansen (2011) authored a dissertation that investigated the level of earnings management in private Norwegian companies, and provided evidence that these firms use earnings management to overcome small losses.

Although studies on Norwegian private firms are limited, the number of examples of accounting scandals in Norway (i.e. Kraft and Kultur scandal, Finance Credit scandal, and the Sponsor Service scandal) would suggest that earnings management is occurring even up to very high levels with important investment and legal consequences. While all earnings management is not necessarily related to fraudulent activity, earnings are assumed to be managed to achieve some financial reporting goal. The availability of financial statements for non-publicly traded firms in Norway allows us the unique opportunity to further examine earnings management surrounding particular events for these firms.

### 2.1.3 Earnings management and fraud

There is a fine line between earnings management and fraudulent financial reporting. The Association of Certified Fraud Examiners (ACFE) defines fraud as “the intentional, deliberate misstatement or omission of material facts, or accounting data which is
misleading, and, when considered with all the information made available, would cause the reader to change or alter his or her judgment or decision".

Management is able to exercise judgment over financial reporting and this is a key factor in earnings management. There are many ways in which discretion is applied but its end purpose is dependent on what incentives are present. While both earnings management and fraud contains some form of deliberate adjustments, fraud is clearly outside the boundary of the law while earnings management can be either legal or illegal. Figure 1 illustrates the distinction that is made between fraud and earnings management (P. M. Dechow & Skinner, 2000). Dechow and Skinner (2000) offers a view on how managerial choices can be categorized and the ways in which management uses discretion to alter accounts. On one end of the spectrum are accounting choices that can be categorized as fraud. On the other end are accounting choices that can be categorized as conservative. On the borderline between the two are aggressive accounting practices. However, the main point of this illustration is that there is a clear-cut conceptual distinction that can be made between fraudulent accounting and legal discretionary accounting choices, because fraudulent financial reporting clearly violates acceptable accounting standards such as the Norwegian Generally Accepted Accounting Principles (NGAAP) or the International Financial Reporting Standards (IFRS).

**Figure 1 - The distinction between fraud and earnings management (P. M. Dechow & Skinner, 2000).**

<table>
<thead>
<tr>
<th>Accounting Choices</th>
<th>&quot;Real&quot; Cash Flow Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Within GAAP</strong></td>
<td></td>
</tr>
<tr>
<td>Overly aggressive recognition of provisions or reserves</td>
<td>Delaying sales</td>
</tr>
<tr>
<td>Overvaluation of acquired in-process R&amp;D in purchase acquisitions</td>
<td>Accelerating R&amp;D or advertising expenditures</td>
</tr>
<tr>
<td>Overstatement of restructuring charges and asset write-offs</td>
<td></td>
</tr>
<tr>
<td><strong>&quot;Conservative&quot; Accounting</strong></td>
<td></td>
</tr>
<tr>
<td>Earnings that result from a neutral operation of the process</td>
<td></td>
</tr>
<tr>
<td><strong>&quot;Neutral&quot; Earnings</strong></td>
<td></td>
</tr>
<tr>
<td>Understatement of the provision for bad debts</td>
<td>Postponing R&amp;D or advertising expenditures</td>
</tr>
<tr>
<td>Drawing down provisions or reserves in an overly aggressive manner</td>
<td>Accelerating sales</td>
</tr>
<tr>
<td><strong>&quot;Aggressive&quot; Accounting</strong></td>
<td></td>
</tr>
<tr>
<td>Recording sales before they are &quot;realizable&quot;</td>
<td></td>
</tr>
<tr>
<td>Recording fictitious sales</td>
<td></td>
</tr>
<tr>
<td>Backdating sales invoices</td>
<td></td>
</tr>
<tr>
<td>Overstating inventory by recording fictitious inventory</td>
<td></td>
</tr>
<tr>
<td><strong>&quot;Fraudulent&quot; Accounting</strong></td>
<td></td>
</tr>
</tbody>
</table>
Different methods are available to firms to use discretionary accounting practices in order to manipulate financial statements. One method is that firms may recognize revenue prematurely, or as in the extreme case of Troms Kraft, book fictitious revenues. The firm can also move costs to earlier or later periods, which should (according to accounting standards) be recognized in the current period. However, these are just a few of many available methods to manipulate financial statements (Schilit, 2002).

### 2.1.4 Earnings management – motives and incentives

**Why does earnings management occur?**

The principal-agent theory is commonly used to describe the occurrence of earnings management behavior. The principal-agent relationship can be described as “…a contract relationship where one or more persons (the principal) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent” (Jensen & Meckling, 1976). Because the principal and the agent have different interests, and both wish to maximize their own utility, the agent will not always act in the best interest of the principal. This problem arises due to information asymmetry because the agent (i.e. the management) ultimately has more information than the principal (i.e. shareholders). Research shows that there is a positive correlation between information asymmetry and earnings management (V. Richardson, 2000). Because the agency theory establishes the incentives for management to manipulate results, it also provides a framework for understanding earnings management.

Another way to examine earnings management is through the use of the fraud triangle. Earnings management typically occurs because it is relatively easy to perform, it involves some kind of reward, and the risk of getting caught/litigated against is low (Schilit, 2002). Earnings management is more likely to occur if the management has an incentive or faces some sort of pressure from inside or outside forces (Stuart, 2011). In addition to incentives and pressure, the illustrative fraud triangle introduces an additional two variables, rationalization/attitude and opportunity. These variables are influences on the frequency and magnitude of earnings management.
2.1.4.1 The fraud triangle - incentives

**Incentives**
Incentive is defined as a firms motivation to engage in earnings management or to commit fraud. Top management can for example be under great pressure to meet earnings forecasts, either due to financial pressure or social pressure (Murphy & Dacin, 2011). This can occur if management is experiencing personal financial losses or is facing external pressure by stockholders to achieve a designated earnings level. Additional pressures apply to publicly traded firms when management attempts to meet analysts’ forecasts. Incentives also exist if the firm is under financial distress or approaching its debt agreements, and hence there is a bigger chance to engage in earnings management or fraudulent financial reporting (P. Healy & Wahlen, 1999).

**Tax incentives**
Income decreasing earnings management is a common practice of aiming to reduce tax expenses. When there is a strong connection between accounting and taxation there tends to exist a higher risk of income decreasing earnings management (D. Burgstahler & Dichev, 1997). This is especially true for private firms as they do not have the same pressure from the capital market with regards to scrutiny of financial statements.

Up until the Norwegian tax reform of 1992, there was a close link between financial accounting and income taxation. However, when the tax reform was enacted that link was removed (Eilifsen, 1996). This implies that for Norwegian firms there is little incentive to engage in earnings management from a tax perspective because the tax benefits are marginalized, although tax evasion as represented in the media presents an alternative view. For example in 2009 Norwegian firms under-reported 29 billion in taxable income (Ukeavisen, 2012).

**Bonus schemes**
Bonus schemes that reward individuals are also found to be an incentive to engage in earnings management (P. M. Healy, 1985). Accruals that defer income are more likely to be reported when firms have caps on bonus awards (and the cap is reached) then if they are without caps (P. M. Healy, 1985; Holthausen & Leftwich, 1983). This is not as large
an issue in Norway as compared to firms in other countries because bonus schemes are relatively non-existent, although performance based bonus schemes have increased in recent times (Barth, 2005).

Debt
A large number of studies have shown that the debt/equity hypothesis is valid; stating that as the firms debt/equity ratio increases it becomes more likely that managers will use accounting methods that increase reported income (Daley & Vigeland, 1983; P. M. Dechow, Hutton, Kim, & Sloan, 2012; Guay, Kothari, & Watts, 1996; Zmijewski & Hagerman, 1981). Firms may have an incentive to engage in income increasing earnings management in order to get loans at a low cost or to avoid violating covenants (Watts & Zimmerman, 1990). Although other studies have found relatively little evidence of this issue (DeAngelo, DeAngelo, & Skinner, 1994). Norwegian firms are primarily funded with debt so we might expect that the management has incentives to engage in income increasing discretionary accruals.

Financial distress
Financial distress provides a strong incentive for managers to manipulate the reported earnings for a number of reasons. Here a firm may use a particular choice of accounting method to achieve their objective (Sweeney, 1994). DeFond and Jiambalvo (1994) show that firms use income increasing earnings management to avoid debt covenant violations, while DeAngelo et al. (1994) identify the use of income decreasing earnings management so that management can obtain better terms when renegotiating contracts. Burgstahler and Dichev (1997) report that managers use positive discretionary accruals in an attempt to avoid losses and meet market expectations.

Based on this evidence, we can conclude that firms experiencing weak financial performance are more likely to engage in income increasing earnings management. Although Norway is known for its strong economy, the recent downturn in the oil market has slowly been affecting the growth in the economy (Crouch, 2015). Because our study focuses on earnings management from 2011-2012 we assume that the impacts of the oil downturn are not significantly represented.
2.1.4.2 The fraud triangle - opportunity
The extent of earnings management and fraud is also dependent on whether there is an opportunity to perform it with little in the way of negative consequences. Opportunities arise from lack of, or weak, internal controls and no separation of duties, but perhaps the most relevant to earnings management is the management’s opportunity to exercise discretion in the financial statements, which is often accompanied by complex accounting rules. Financial accounting during the 1940s and 1950s was largely based on historical cost, and with this came a relatively small opportunity to use discretion in the accounting (Christensen, Glover, & Wood, 2012). Today there exist more complex accounting standards that are mainly based on fair value discretionary estimates, and hence the opportunity to engage in earnings management has increased tremendously.

2.1.4.3 The fraud triangle - rationalization
Rationalization or attitude refers to how one can justify engaging in earnings management or fraud. The mindset and culture that is present in the firm is considered to be the foremost driver of this justification (Rockness & Rockness, 2005). A management without ethical behavior fosters an environment that is highly susceptible to fraudulent financial reporting. Perhaps surprisingly, Norwegian businesses have reported significant exposure to fraudulent reporting ("Norway next to Nigeria in fraud report," 2014). Furthermore, the Global Fraud Survey showed that 26 percent of firms reported serious instances of fraud within the last two years, which was higher than Russia (16 percent) and highest in Europe alongside Germany. This may be the result of the generally more transparent environment in Norway that acknowledges and reports cases of fraud.

2.1.5 Accounting standards – impact on earnings management
Norwegian firms follow the Norwegian Accounting Act from 1998. The mandatory adoption of IFRS for publicly traded firms was implemented in 2005. Non-publicly traded firms are free to choose the accounting standard they utilize. In comparison to the traditional historical cost accounting, IFRS is considered to be rule based while NGAAP is more principle based.
After the implementation of IFRS, many studies have examined the effect of the change on audit quality and earnings management (Ahmed, Neel, & Wang, 2013; Bryce, Ali, & Mather, 2014; Elias, 2012; Liu, Yao, Hu, & Liu, 2011). There has not been a significant body of research focused on the Norwegian market, and where studies do include Norway they also include other European countries in their analysis (Aussenegg, Inwinkl, & Schneider, 2008; Cameran, Campa, & Pettinicchio, 2014; Zeghal, Chtourou, & Fourati, 2012). Aussenegg et al. (2008) found that the level of earnings management before and after the mandatory adoption of IFRS was unchanged for the publicly listed Scandinavian firms in their study. Zeghal et al. (2012) observed lower levels of earnings management for publicly listed Scandinavian firms (e.g. Finland, Sweden, Denmark), while Cameran et al. (2014) observed higher levels of earnings management after the accounting change among private companies in Italy. Results of these studies are mixed, but both IFRS and NGAAP provide a larger opportunity for the use of discretion or accruals in accounting that are based on the subjectivity of management.

2.1.6 Firm characteristics and earnings management

Firm size
Research has shown that larger firms (especially public firms) that are under greater political and regulatory scrutiny tend to engage in income decreasing earnings management (Watts & Zimmerman, 1990). Researchers have also investigated the correlation between company size and earnings management and have found that the accruals quality is positively correlated with company size, with small companies tending to engage in more earnings management than large companies (Choi & Lee, 2002; P. M. Dechow & Dichev, 2002). One can think of accruals quality in terms of accounting quality, and hence low accrual quality is associated with low accounting quality, or greater earnings management (Hope, Thomas, & Vyas, 2013).

Public versus private firms
Earnings management proxies are widely accepted in research as a measure of accounting quality, with the two variables being negatively correlated (D. C. Burgstahler et al., 2006;
Lang, Raedy, & Wilson, 2005; Lang, Raedy, & Yetman, 2003), and hence these terms are at times used interchangeably. The accounting quality differences between private and public firms vary and institutional differences are crucial to explaining the cause of this (D. C. Burgstahler et al., 2006). Due to the separation of ownership and control that is prevalent in public firms, the principal is heavily dependent on good accounting quality reported by the agent. If the information quality is poor (i.e. large information asymmetry), investors will be reluctant to provide the agent with funds and the cost of capital will increase. This will motivate management to provide the principal with high quality accounting information (D. Burgstahler & Dichev, 1997; D. C. Burgstahler et al., 2006).

This incentive to provide higher quality accounting information is less prevalent in privately held firms because the ownership structure is often more concentrated. It is not uncommon for owners/shareholders of a private firm to be a member of management or a member of the board of directors. As a result, the cost of acquiring information declines, as well as the demand to value the firm on a continuous basis. In these situations the cost of capital may not be directly impacted by accounting quality. Because of this critical difference, lower accounting quality (i.e. higher levels of earnings management) tends to be associated with private firms (Petroni et al., 2000). Without the need to provide information to external shareholders the environment for earnings management exists to achieve other incentives. Therefore, we expect that this will also apply to private Norwegian firms as opposed to publicly traded Norwegian firms.

### 2.1.7 Measuring earnings management

Proxies are required to measure the amount of earnings management. Eiman & Saad (2008) review the main methods for measuring earnings management: the discretionary accruals method, the single accrual method, the total accruals method, the accounting changes method, and the distribution method. All of these methods have their upsides and downsides, and the ultimate selection of proxy depends on the focus of the study and data availability.
This study will use discretionary accruals modeling as this method is a well-established and proven research method for estimating earnings management compared to other methods. In order to estimate discretionary accruals one must begin with a calculation of total accruals or current accruals. The main difference between the two accruals models is the input into the calculation. Total accruals are calculated using inputs of total assets and total liabilities, whereas current accruals are calculated with current assets and current liabilities. The rationale behind using current accruals models is that management has more discretion over current accruals than over long-term total accruals (Eiman & Saad, 2008). Others have advocated the use of current accruals because the measures tend to be of substantially higher quality (Ecker, Francis, Olsson, & Schipper, 2013; S. A. Richardson, Sloan, Soliman, & Tuna, 2005). A limitation of utilizing total accruals is that one needs to have a sufficiently long time series of data to capture the period when total accruals reverse indicating potential earnings management.

This study will be conducted with data taken from three years (2010-2012), and therefore we use the current accruals method in our discretionary accruals estimation. Similar to other research we refer to total accruals in our discretionary accruals calculations when in fact these are current accruals calculated from current assets and current liabilities.

Earnings reported in the income statement consist of cash flow from operations plus total accruals:

\[
\text{Net Income} = \text{Total Accruals} + \text{Cash flow from Operations}
\]

Accruals are a reflection of business transactions that affect the future cash flows of the business even though there is no immediate change in cash transactions (S. Teoh, Welch, & Wong, 1998). This is where management has an opportunity to use flexibility and discretion in accounting practices and hence engage in earnings management, either income increasing or decreasing.
Current accruals are the sum of discretionary and non-discretionary accruals, and it is the discretionary portion that is of interest in this study. Discretionary accruals are accruals of abnormal character and are where management exercises discretion to manipulate earnings as they are more subjective and prone to biases, assumptions, and interpretation of accounting standards (P. M. Dechow, 1994). The low degree of detectability of earnings management in discretionary accruals by users of financial statements also makes it a suitable instrument for implementing the management’s accounting objectives (P. M. Dechow, 1994).

Healy (1985) introduced the first method for estimating earnings management by measuring the deviations in the normal levels of accruals, known as the discretionary accruals. He begins with a calculation for total working capital accruals and then uses the levels of working capital accruals as a direct proxy for discretionary accruals. The Healy (1985) model assumes that the nondiscretionary portion of accruals remain constant in the examined period, although subsequent research has shown that this is unlikely because non-discretionary accruals are expected to change due to normal business activities (McNichols, 2000). Furthering this work researchers, such as Jones (1991) and Dechow and Dichev (2002), developed models to directly estimate discretionary accruals, which enabled total accruals to be separated into the discretionary and nondiscretionary portions (P. M. Dechow et al., 2012).

An underlying assumption and weakness to accrual models of Healey (1985) and DeAngelo (1986) is that during the estimation period there exists no systematic earnings management (P. M. Dechow et al., 2012; Jones, 1991). This is not always the case, and is an inherent limitation to these models. With the development of the Jones model, this assumption has been relaxed. With a basis in the original Jones model that are a number models available today for estimating discretionary accruals directly and some of the most popular ones will be presented in the ‘Research Design and Methodology’ chapter of our study.
2.2. Auditor Change and Earnings Management

2.2.1 Motivation for auditor changes

There are many underlying reasons and motivators for auditor changes, but in most cases firms and their auditors provide no reason behind the changes (Norris, 2006). Sometimes, as in the case of Kraft & Kultur, the management provides a reason for the change but speculation still exists that the audit change is driven by opportunistic behavior. When Troms Kraft’s subsidiary received remarks from PwC auditors with regards to their accounting practices they fired PwC and replaced them with a non-Big Four firm. It is speculated that the audit firm was fired due to opportunistic behavior (e.g. the subsidiary firm was engaging in fraudulent earnings management) (Endersen, 2013).

The motivation behind audit changes can be broadly classified into two groups encompassing opportunistic reasons (e.g. audit shopping and opinion shopping) or business related reasons (e.g. desire for a more effective auditor or reduction of audit fees) (Stefaniak, Robertson, & Houston, 2009; Williams, 1988). Stefaniak et al. (2009) identified the following variables as client-disclosed reasons for auditor changes; opinion shopping, audit fees, firm-characteristics, shareholder preferences, auditor solicitation, client satisfaction with the auditor, disputes over accounting practice, and client-characteristics. The study did not identify any client-initiated reasons that fall under the category ‘audit shopping’. Therefore the literature leads us back to studies that separate motivational variables in terms of their benefits to shareholders (Williams, 1988). Williams (1998) suggests that audit changes related to business reasons provide positive benefits to the shareholders, and are therefore consistent with shareholder wealth maximization. Changes that are considered beneficial to shareholders are managements desire to improve the firm image with a higher quality audit or to reduce audit fees.

With regards to opportunistic reasons for audit changes Davidson et al. (2006) suggests that changes falling under the term ‘audit shopping’ are generally not expected to benefit shareholders, and audit shopping may be motivated by the desire for a lower quality audit
to benefit management or facilitate earnings management. Audit shopping can be divided into two categories (W. N. Davidson et al., 2006). In the first category the management wishes to increase information asymmetry for purely self-beneficial reasons. One example is when the management wishes employ a low quality audit in order report inflated earnings which in turn could increase earnings based compensation. In these cases the management would manipulate earnings upwards and hence engage in income increasing earnings management. Management could also skew performance upward in order to mitigate the risk of getting fired for delivering poor financial performance (Weisbach, 1988). In both cases the management is assumed to desire hiring a more lenient auditor and it is expected that this will result in income increasing earnings management. In these cases we assume that management is operating under the principal-agency theory and income increasing earnings management around audit changes is an indication of audit shopping.

A second category of audit shopping occurs when the client disagrees with the auditor’s conservative accounting choices and hence genuinely believes that a less conservative accounting method reflects the firm’s true economic performance. Although this category falls under the heading of audit shopping, the underlying motivation is not to distort earnings for self-beneficial reasons.

2.2.2 Audit shopping and earnings management

An extensive body of research exists to suggest that the vast majority managers do engage in some form of earnings management. Collins et al. (2012) analyzed 32 previous studies that all show evidence of earnings management. If a firm selects a new auditor for reason(s) consistent with shareholder wealth maximization, we would not expect there to be a significant increase in earnings management. An audit shopping firm (one hoping to hire a more lenient auditor), however, may be more likely to engage in greater earnings management after the auditor change. Davidson et al. (2006) as well as DeFond and Subramanyam (1998) have studied this issue by analyzing the relationship between
earnings management following audit changes and whether there is a systematic increase in earnings management following the change.

Defond and Subramanyam (1998) study the topic by examining earnings management (using discretionary accruals as a proxy) for a sample of 503 audit change firms for years 1990 to 1993. They measure discretionary accruals using a cross-sectional variation of the Jones (1991) model as described in Defond and Jiambalvo (1994), using cash flow calculated total accruals. Their results find no evidence of systematic income increasing earnings management the year following the audit change for their sample.

Davidson et al. (2006) extend the work of DeFond and Subramanyam (1998) by examining the causes and consequences of auditor changes with relation to audit quality and earnings management, while additionally controlling for prior audit opinion. Departing from the same methods used in Defond and Subramanyam (1998) they measure the extent of earnings management by using discretionary accruals estimated by a cross-sectional modified Jones Model using balance sheet calculated total accruals (P. Dechow, R. Sloan, & A. Sweeney, 1995). Based on a sample size of 1,132 firm years of auditor changes from 1993 to 1997 they determine that there is no significant increase in earnings management following audit changes. However, they do find evidence for increased earnings management for firms that following receipt of a modified audit opinion switched auditor from a big audit firm to a small audit firm (i.e. lower audit quality).

In general, these studies have not found pervasive evidence of opportunistic earnings management as a reason for changing auditor.

Based on these findings, we reexamine this issue as it applies to private Norwegian firms. Thus, our first hypothesis is:

\[(H_1): \text{Earnings management will increase following auditor changes.}\]
It is important to note that we assume audit changes are motivated by a desire for income increasing earnings management, and hence the underlying assumptions of the hypothesis are: when discretionary accruals are positive (income increasing) in the event year, and increased from the year before, there is evidence of opportunistic earnings management. It is also importance to note that if we find significant income increasing earnings management there is always a possibility that the result is understated because it has been offset by cases of income decreasing earnings management in the sample.

2.2.3 Audit quality and earnings management

Definition of audit quality
While there is no universal definition of audit quality, DeAngelo (1981) introduces a definition that has been widely used among scholars. They define audit quality as a function of (1) the auditor’s ability to detect material misstatements (technical capabilities) and (2) the auditor’s ability to report the errors (auditor independence). In other terms, audit quality is high when the probability that the auditor will both detect and report material misstatements in the financial statements is high. Regardless of the definition one chooses to use, common to all is that these characteristics (e.g., technical capabilities or auditor independence) are largely unobservable, so it is crucial to have a proxy measure for audit quality.

Auditor size as a proxy for audit quality
DeAngelo (1981) examined the relationship between audit quality and auditor size, and argued that larger audit firms are more independent (higher probability to report discovered misstatements), and therefore tend to provide a higher audit quality. Her research supports the notion that large auditors have more incentives to be accurate because they have larger numbers of clients and therefore have “more to lose” if their reports are not accurate. Based on this it is plausible that large auditor firms have greater incentive to report earnings management and a larger auditor results in higher audit quality. Research has shown evidence that large audit firms are more accurate because they have greater wealth that is exposed to litigation risk, therefore this risk increases the
quality of their audit (Dye, 1993). It has also been reported that the rates of auditor litigation among big auditors are lower than that of small auditors (Palmrose, 1988). This may be the result of auditor conservatism, and therefore big audit firms are likely to limit the existence of income increasing discretionary accruals (DeFond & Subramanyam, 1998).

In audit quality and audit change research the size or brand name of audit firms has generally been agreed upon by researches as appropriate proxies for audit quality (R. A. Davidson & Neu, 1993; Mark L. Defond & Jiambalvo, 1993; Lennox, 1999; S. H. Teoh & Wong, 1993).

Becker et al. (1998) provide evidence that audit quality (measured by Big Six versus non-Big Six) is related to the occurrence of earnings management. Their study they reveal that discretionary accruals are higher for clients of non-Big Six audit firms (Becker, Defond, Jiambalvo, & Subramanyam, 1998). Due to a series of mergers and business failings the Big Six group has now been reduced to the “Big Four” and consists of PwC, Deloitte, Ernst & Young (EY), and KPMG. In our analysis we will include BDO along with the traditional Big Four firms, as BDO is considered to be one of the largest audit firms in Norway with a market share comparable to the Big-Four1. We will refer to these as the Big Auditor firms from hereinafter. This leads to our second hypothesis:

\[(H_2): \text{Firms that switch auditors are more likely to engage in earnings management after the auditor change if the firm’s new auditor is a non-Big Auditor.}\]

**Audit quality, prior audit opinion, and earnings management**

Davidson et al. (2006) extended the work by DeFond and Subramanyam (1998) by controlling for both the type of prior audit opinion (e.g. modified vs. unmodified audit opinion) and auditor type (e.g. switch from Big Six to a small auditor) and found evidence of larger levels of discretionary accruals (EM proxy) for firms that received a

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1 See Table 4
qualified audit opinion and switched auditor from a Big Six to a smaller auditor. Their results suggest that firms may be engaging in audit shopping when receiving modified audit opinions (Davidson et al. 2006).

Because of their findings we will reexamine this issue for Norwegian firms and hence our third hypothesis is:

(H₃): When firms choose a non-Big Auditor earnings management will be greater when the firm has received a modified audit opinion from its prior auditor.

We believe that the impact will be greater when switching from a Big Auditor to a non-Big Auditor because the audit quality reduces when this type of change takes place.

3. Research Design and Methodology

In this section I will introduce measures of earnings management, summarize the most relevant and common tests for earnings management and give a brief summary of the different models for estimating discretionary accruals. I will summarize the limitations of these models as well as explain the choice of the model used to perform the discretionary accruals estimates.

3.1 Discretionary Accruals Models

There are a number of models commonly used in research to define an earnings management proxy (i.e. discretionary accruals). Some of the most popular and extensively used models are those based on aggregate accruals (>45% of earnings management studies) (McNichols, 2000). Commonly used models for estimating discretionary accruals are the Healy Model (P. M. Healy, 1985), the DeAngelo Model (DeAngelo, 1986), the Jones Model (Jones, 1991), and the modified Jones Model (P. M. Dechow, R. G. Sloan, & A. P. Sweeney, 1995). The main objective of these models is to
separate total accruals into a measure of accrual-based earnings that are associated with the firm’s earnings process from abnormal accruals (i.e. discretionary accruals) (P. Dechow, Ge, & Schrand, 2010). Ultimately the selection of the discretionary accruals model in the research design should be based on the predicted form of earnings management. A more rigorous approach is to select a combination of models to identify earnings management when the form is unpredictable (Peasnell, Pope, & Young, 2000).

Models for estimating earnings management have started from rather simple proxies and have evolved into more advanced estimation models. Healy (1985) first examined earnings management using total accruals as a proxy for discretionary accruals. Jones (1991) developed one of the first methods for directly estimating discretionary accruals using the residual from the regression of total accruals on the change in firm specific parameters.

More recently models have been adjusted to improve the power and specification with regards to identifying earnings management. These models commonly have their base in the modified Jones Model developed by Dechow et al. (1995) and add additional variables to the regression to improve the estimation. Concerns that these models fail to capture all nondiscretionary accruals have also led researchers to supplement the models with a variety of performance matching techniques (Kothari et al., 2005). Kothari et al. (2005) proposed a matching procedure that involved subtracting estimates of discretionary accruals from Jones-type models using control firms matched by industry and return on assets (ROA) in either the current or the previous period in the estimation. Kothari et al. (2005) also compare results in their study with the modified Jones Model and directly including ROA in the regression. They find that performance matching resulted in the most improved model specification, but including ROA directly into the regression was also a useful measure over the modified Jones Model.

Some of the most popular models found in literature for estimating discretionary accruals are described below:
1) The Jones model
Jones (1991) built upon the work of Healy (1985) by relaxing the assumption that non-discretionary accruals are constant. The model allows for controlling for a firm’s specific economic circumstances and is described as:

\[ TA_{it} = \alpha_1 \left( \frac{1}{A_{it-1}} \right) + \alpha_2 (\Delta REV^2_{it}) + \alpha_3 (PPE_{it}) + e_{it} \]

where:
- \( TA_{it} \) = total accruals in year \( t \) for firm \( i \);
- \( \Delta REV_{it} \) = revenues in year \( t \) less revenues in year \( t-1 \), scaled by total assets at \( t-1 \);
- \( PPE_t \) = property, plant, and equipment in year \( t \), scaled by total assets at \( t-1 \);
- \( A_{t-1} \) = total assets in year \( t-1 \);
- \( \alpha_1, \alpha_2, \alpha_3 \) = firm-specific parameters
- \( e_{it} \) = residual in year \( t \) representing discretionary portion of total accruals

2) The Modified Jones model
Dechow et al. (1995) modify the original Jones Model to subtract change in receivables from change in revenues. In the modified model, nondiscretionary accruals are estimated during the event year as:

\[ TA_{it} = \alpha_1 \left( \frac{1}{A_{it-1}} \right) + \alpha_2 (\Delta REV_{it} - \Delta REC_{it}) + \alpha_3 (PPE_{it}) + e_{it} \]

where:
- \( \Delta REC_{it} \) = net receivables in year \( t \) less net receivables in year \( t-1 \), scaled by total assets at \( t-1 \)

Other variables are the same as in the Jones Model (Jones, 1991).

3) The Kothari et al. model (2005)
Kothari et al. (2005) develop a model similar to the modified Jones Model (Jones, 1991) that includes ROA in the regression as a performance control. Their model is:

\[ TA_{it} = \alpha_1 \left( \frac{1}{A_{it-1}} \right) + \alpha_2 (\Delta REV_{it} - \Delta REC_{it}) + \alpha_3 (PPE_{it}) + e_{it} \]

Kothari uses “sales”, which is Compustat data item number 12. Compustat data items make no distinction between “sales revenue” and “total revenue” (as does the SNF-database), therefore we assume that “sales” is total revenue in the SNF-database.
where:

\( ROA_{it} \) = is return on assets for firm \( i \) in year \( t \).

\( a_0 \) = constant term.

other variables are the same as in the Jones Model (Jones, 1991).

### 3.2 Calculation of Total Accruals

In the discretionary accruals models detailed above the researcher begins by estimating the total accruals parameter. Estimation of total accruals is typically performed using two different approaches, the cash flow statement and balance sheet approaches. The selected method introduces an additional limitation to earnings management studies as there can be an embedded error in the calculated total accruals from which discretionary accruals are estimated. The difference between the two methods arises when the firm’s estimates of cash flows is not articulated in the balance sheet and the income statement (Kinnunen & Koskela, 1999). Although the specific variables used in the calculations vary from study to study, most research on earnings management use the balance sheet approach when calculating total accruals (DeAngelo, 1986; P. M. Dechow, 1994; P. M. Dechow et al., 1995; P. M. Healy, 1985; Jones, 1991). A summary of some popular methods for calculating total accruals in common research follows:

DeAngelo (1986) uses the balance sheet method to calculate total accruals where total accruals equals net income minus operating cash flow, which is derived by adjusting working capital from operations for changes in all current operating accounts.

Jones (1991) defines total accruals as the change in non-cash working capital before income taxes payable less total depreciation expense: \( TA = [(\Delta \text{Current Assets} - \Delta \text{Cash}) - (\Delta \text{Current Liabilities} - \Delta \text{Current maturities of Long-Term Debt} - \text{Income Tax Payable}) - \text{Depreciation and Amortization}] \).
Dechow et al. (1995) uses the balance sheet approach to calculate total current accruals as: \[ TA = (\Delta \text{Current Assets} - \Delta \text{Cash} - \Delta \text{Current Liabilities} + \Delta \text{Debt in Current Liabilities} - \Delta \text{Depreciation}) \].

Davidson et al. (2006) define total accruals as the change in non-cash current assets less the change in operating current liabilities:

\[ TA = [\Delta \text{Account Receivables} + \Delta \text{Inventories} + \Delta \text{Current Assets}] - [\Delta \text{Accounts Payable} + \Delta \text{Income Tax Payable} + \Delta \text{Current Liabilities}] \].

Hribar and Collins (2002) advocate for the calculation of total accruals using the cash flow statement, where total accruals are defined as:

\[ TA = (- (\Delta \text{Accounts receivables} + \Delta \text{Inventories} + \Delta \text{Accounts Payable} + \Delta \text{Tax Payable} + \Delta \text{Other Current Assets} + \Delta \text{Depreciation Expense}) \) (Hribar & Collins, 2002). This method has been used by other studies that utilize total accruals calculations in their analysis (Cheng & Thomas, 2006; Core, Guay, Richardson, & Verdi, 2006).

### 3.3 Methodological Issues and Limitations

#### 3.3.1 Detection of earnings management

Even though it is commonly accepted by researchers that earnings management exists, the studies addressing these issues are not without flaws. There are mainly two critical research design issues that arise for these studies. The first is the difficult task of identifying the underlying incentives for earnings management (e.g., tax incentives and financial distress). Second, one has to measure the use of accounting discretion in discretionary accruals, which inevitably contain some degree of measurement error. A common way to estimate unexpected accruals is to begin with total accruals, measured as the difference between net income and operating cash flow. Total accruals are then regressed on variables that serve as proxies for normal accruals, and hence unexpected accruals are the unexplained (i.e., the residual) components of total accruals (P. Healy & Wahlen, 1999). Many studies have questioned the reliability and power of this approach (Beneish, 1997; Guay et al., 1996). Results from Jones (1991) suggest that the model is
successful at explaining around one quarter of the variation in total accruals. One assumption that is implicit in the Jones Model is that revenues are non-discretionary. When earnings are managed through revenues the Jones Model will fail to detect the managed earnings in the discretionary accrual proxy. This assumption results in the model having reduced detection power under certain circumstances. Although Jones (1991) recognizes this limitation, research suggests that revenues are subject to discretion by management, especially for growth firms since potential benefits are greater since each dollar of discretionary revenue has a greater impact on earnings (Ertimur, Livnat, & Martikainen, 2003). Dechow et al. (1995) attempts to eliminate the tendency of the Jones model to estimate discretionary accruals with error when earnings management occurs in revenues by subtracting the change in receivables from the revenues term.

3.3.2 Limitations of discretionary accruals models

A major limitation of the above models is the potential for measurement error in the discretionary accrual proxy to introduce bias in the studies’ results. In order to interpret the results within the context of the study it is important to have confidence in the estimate of discretionary accruals to capture the actual discretion applied by the management. An important source of error is introduced because the workflow begins with modeling nondiscretionary accruals and later estimates discretionary accruals based on firm specific parameters. Inherent to this approach is the need to understand which factors are causing accruals to fluctuate. The most popular approach in the literature specifies linear models of aggregate accrual behavior, but generally do not present evidence for the behavior of accruals when no earnings management has occurred (McNichols, 2000). The alternative approach is to directly model discretionary accruals based on management’s incentives for discretion, which allows for separation of the estimation error introduced through the estimate of nondiscretionary accruals (Petroni et al., 2000).

The validity of the selected model in any particular research study is dependent on the power (i.e., the probability of a Type II error) and specification (i.e., the probability of a
Type I error) of that model. Model precision also depends heavily on the input variables (e.g. total accrual calculation). Models for estimating discretionary accruals assume that earnings management occurs in the test period but not in the estimation period. In reality, the estimation period in most studies includes both the effects of hypothesized earnings management and the effects of a normal level of earnings management in the estimate of nondiscretionary accruals (McNichols, 2000). This assumption in the research design tends to result in lowering the power of the test.

Estimation issues also result from the selected modeling approach (time series vs cross sectional). In studies such as Jones (1991), a firm-specific model is used to estimate the correlation between total accruals and the firm-specific parameters. This model requires a time series that is sufficiently long in order to make reasonable estimations. Studies have imposed requirements of 7-10 years of data for any one specific firm which results in having to exclude firms lacking sufficiently long data series that leads to a significantly smaller data set (P. M. Dechow et al., 1995; Thomas & Zhang, 2000). This requirement might lead to several problems, such as survivorship bias and non-stationary regression coefficients (Peasnell et al., 2000).

A second issue with time series data is that it implies the variables remain stationary over time, which is not necessarily true in the estimation period. Time series data may also introduce error in that over sufficiently long data sets there is a greater probability for structural change within a firm that could result in estimation errors (Bartov, Gul, & Tsui, 2000; Hansen, 2002). The alternative approach is to use a cross-sectional estimation model. While this addresses some limitations of the time series approach, it introduces errors due to benchmarking each firm’s accruals based on the behavior of other firms in the sample, typically grouped by industry type (Bagnoli & Watts, 2000).

To understand the relative effectiveness of these models in measuring earnings management prior studies rely primarily on the extent to which a model’s estimates of abnormal accruals detects earnings management (P. M. Dechow et al., 1995; M. L. Defond & Park, 2001; Guay et al., 1996; Kothari et al., 2005; Peasnell et al., 2000).
Dechow et al. (1995) evaluated the relative performance of the Healy Model, the DeAngelo Model, the Jones Model, the modified Jones Model, and the Industry Model in detecting earnings management. They compared the specification and power of commonly used tests across discretionary accruals generated by the models. Their results show the models have low power (type II error) when applied to samples with extreme financial performance and are well specified (type I error) for random samples. In the Dechow et al. (1995) study all model estimations are performed using time-series data and the balance sheet approach for calculating total accruals.

Dechow et al. (1995) and Guay et al. (1996) examine time series versions of the Jones and the modified Jones Model models and suggest that they estimate discretionary accruals with considerable imprecision. Contrary to these results, Peasnell et al. (2000) evaluated the model specification and power of three cross sectional models (the Jones Model, the modified Jones Model, and an alternative model called the Margin Model) for estimating discretionary accruals. Their findings reveal that all three models are reasonably powerful in detecting earnings management, but the power of detection varies for different types of earnings management. The Jones Model and the modified Jones Model are significantly better at detecting revenue and bad debt manipulations, whereas the Margin Model is better at detecting non-bad debt expense manipulation. The results suggest that if a researcher expects the manager to engage in revenue manipulation (which tends to be the most common type of manipulation) one should choose the modified Jones Model. However, it is important to note that Peasnell et al. (2000) uses the balance sheet method for calculating total accruals which may introduce measurement error into the analysis (Hribar & Collins, 2002).

Inherent to popularly utilized discretionary accruals models is the misspecification that occurs when the models are applied to firms with extreme financial performance because of the mechanical relation between performance and estimated discretionary accruals (P. Dechow et al., 1995; Guay et al., 1996; Kothari et al., 2005). In order to mitigate for this misspecification and reduce the probability of incorrect interpretations in earnings management studies develop a model for estimating discretionary accruals that controls
for performance by including ROA into the linear regression equation (i.e. modified Jones model) as well as adjusting the discretionary accruals by performance matching (Kothari et al., 2005). Kothari et al. (2005) show that discretionary accruals estimated using their model and adjusting for the performance-matched firm’s discretionary accrual is the best specified estimation of discretionary accruals across a wide variety of event conditions they tested.

When considering whether to perform the discretionary accruals estimate using the matched-firm approach or simply by including a performance variable (i.e. ROA) in the regression model it is important to understand the limitations inherent to the two approaches. Including the performance variable in the linear regression sets up a linearity in the relation between the relative magnitude of performance and the accruals estimation, which in reality is not always the case for a number of economic reasons (Kothari et al., 2005). Although an advantage of simply including ROA as an additional variable is that it imposes one less restriction on data availability because it does not require available data for a control firm. In the many tests Kothari et al. (2005) performed they found that although performance matching based on ROA using the modified Jones model produced the best results in their study, the next best performing accrual measure was the modified Jones model that includes ROA. Giving consideration to the limitations on data availability, the minor differences in rejection rates between performance matching versus including ROA in the regression model, and the scope of this study we will estimate discretionary accruals using the modified Jones model with the addition of ROA as an independent variable in the regression.

In most research regarding earnings management utilizing Jones type models for estimating discretionary accruals a constant term is not typically included in the regression model. The inclusion of a constant term provides a control for heteroskedasticity that remains after deflating all the terms by total assets. Results from Kothari et al. (2005) also show that estimations of discretionary accruals that fail to include a constant in the regression increases the misspecification of the modified Jones model. They report increases in rejection rates by more than 20% when excluding the
constant term. Following Kothari et al. (2005) we also include a constant term in the regressions.

The selection of the measure for total accruals is important with regards to the final estimation of discretionary accruals. The balance sheet approach has the advantage of allowing a larger sample size and longer time series than studies that require the cash flow statement (McNichols, 2000). Research specifically into the pitfalls of the balance sheet approach suggest that it is suboptimal because it introduces a measurement error (Hribar & Collins, 2002). Hribar and Collins (2002) indicate that the error in the balance sheet approach is correlated with the firm’s specific economic characteristics. This error reduces the model’s power to detect earnings management and interferes with drawing statistically valid conclusions based on earnings management proxies. Ultimately one wants to choose a measure that is sensitive to the earnings management that is hypothesized, although this is admittedly difficult to assume beforehand.

When total accruals are estimated using the balance sheet approach it may be subject to significant measurement bias when the firm years studied include non-operating activities such as mergers and acquisitions, discontinued operations, and foreign currency translations because these events impact current asset and liability accounts but have no earnings impact (Revsine, 2005). The measurement bias is especially true for merger and acquisition firms and discontinued operation firms. This approach results in firm years with mergers and acquisitions showing evidence of income increasing earnings management, while firms with discontinued operations show evidence of income decreasing earnings management. Studies that hypothesize the existence of earnings management could falsely conclude that that earnings management has occurred, and the results may fail to reject a false null hypothesis (type II error) when firm-years contain mergers and acquisitions. The opposite situation exists for firm-years with discontinued operations. Here the researcher might conclude that there is no earnings management, when in fact there is, and hence incorrectly reject the true null hypothesis (type I error). An indirect way of controlling for this bias is to control for firm growth and financial distress. The reasoning for this is that growing firms are more likely to engage in mergers
and acquisitions while financially distressed firms are more likely to result in discontinued operations (Hribar & Collins, 2002).

These shortcomings are important considerations for studies examining financially distressed firms that might contain a higher proportion of firm years with discontinued operations (than the population in general), or studies that examine rapidly growing firms that might contain a higher number of firm years with mergers and acquisitions. In addition to the above mentioned non-articulation events, Shi and Zhang (2011) identified non-articulation in changes in working capital accounts and depreciation expenses, as well as another four accrual items (deferred income tax benefit/expense, equity in net earnings/losses, gains/losses from sales of PPE and investments, as well as other funds from operations) as responsible for the differences between the two methods. One method to control for possible errors introduced via the balance sheet approach would be to check sensitivity of results for a sub-sample of firms that are known to be absent of these non-articulation events. Acknowledging the potential shortcomings of the balance sheet approach procedure, Richardson et al. (2005) confirms the robustness of the method by comparing their results from balance sheet estimated accruals to cash flow estimated accruals from 1988 to 2001 in their data set. They find that the results from both methods are qualitatively similar to each other.

### 3.3.3 Limitations to audit change studies

Research limitations regarding audit change studies primarily stem from the reliability of the survey responses when investigating reasons for audit changes on an interview basis. This implies the extent of open-mindedness needed when investigating reasons for audit changes on an interview basis because it is unlikely that a firm will report management opportunism as a reason for an auditor change (Fontaine, Letaifa, & Herda, 2013). Due to

\[ \text{PPE represents losses and gains resulting from the sale, disposal, or retirement of assets (Shi & Zhang, 2011). We define PPE as fixed assets from SNF-database.} \]
this potential flaw in interview based studies other research has examined the reasons for audit changes using alternative methods (Stefaniak et al., 2009). Stefaniak et al. (2009) performed an extensive literature review and investigated 57 previous studies that focused on audit changes from a client’s perspective that were not interview based and recognized management opportunism as an alternative reason for some of these changes.

Even though previous studies that investigate both earnings management and auditor changes are very limited and extend to Davidson et al. (2006) and DeFond and Subramanyam (1998), these studies are limited by the available methods for determining discretionary accruals and relating this measure of earnings management to the reason for the audit change. As discussed previously, a number of models for estimating discretionary accruals exist, and depending on many characteristics of the firms being studied, the actual method of earnings management, and the size of the sample the models may be severely misspecified. Assuming the models correctly detect earnings management, the other challenge is correctly identifying the management incentives that tie earnings management to the audit changes. DeFond and Subramanyam (1998) perform an extensive study and suggest that the negative discretionary accruals they observe in audit change firms can be explained by the conservative nature of the incumbent auditor. They conclude that although their results are robust to a number of tests, it is not possible to rule out financial distress as a partial explanation of the results. Davidson et al. (2006) present results that are consistent with those of DeFond and Subramanyam (1998). This embodies the difficult nature of identifying the connection between the magnitude and direction of the change in discretionary accruals and the audit change. Another limitation of these studies is that they are event based and examine a number of firms that are generally grouped together because of the event – the audit change. During the event year some firms may report positive discretionary accruals while others may report negative discretionary accruals that have an offset effect; therefore, the results from these studies may be muted or misrepresented by the varying motivations amongst firms that change auditors (Davidson et al., 2006).
4. Data, Sample Selection and Analysis

In the first part of this chapter, the data selection and descriptive results from Part 1 of the thesis will be presented, mostly focused on the type of auditor changes we observe in Norwegian firms. We also analyze the distribution of auditor size with firm size and industry. Part 2 presents descriptive statistics and testing of our three hypotheses.


4.1.1 Data source and sample selection

We begin by creating a data set of samples extracted from the SNF database for years 2010 to 2012. As our purpose is to describe the types of auditor changes we observe for Norwegian AS firms in 2011-2012 we apply the following exclusion criteria (Table 1):

- All non-AS firms.
- Firms that have an inactive status.
- Firms that did not change auditor.
- Firms that meet the requirements for not having a compulsory audit as fewer firms faced compulsory audits from 2011 and onwards. This condition will be met by removing firms that have less than 5MNOK total revenues, less than 20MNOK in total assets, and average numbers of employees do not exceed 10 FTE’s4.
- Firms that are missing auditor info.
- Very small firms are removed. These are defined as having total revenues less than 1MNOK or total assets less than 5MNOK.
- Firms with missing industry code.

4 An FTE is the hours worked by one employee on a full-time basis.
Our final sample consists of 14343 observations of audit change firms in 2011-2012.

4.1.2 Firm size, auditor size, and auditor changes

Table 2 presents the distributions of auditor size after grouping firms by size into three different classifications. We begin by classifying firms as small, mid, and big sized firms based on quartiles of sales revenue. We define the small sized firms as those in the two smallest quartiles, mid-sized firms as those in the 50-75% quartile, and large firms as those in the 75-100% quartile. As we might expect larger firms in the data set are characterized by having a big audit firm (70.5%). This is perhaps due to larger firms having a reputation to uphold a certain standard or quality that may be reflected in the selection of a big audit firm. The rest of the results are also as expected with mid-sized firms having the next largest selection of Big Auditors, followed by small firms. We run an additional analysis on the data by removing BDO from the classification of ‘big audit’ firm and the numbers show generally similar results, with small, mid, and large companies having 23%, 20%, and 35% of the traditional Big Four firms respectively.

Table 3 illustrates that firms in the petroleum, energy, and research & development industry groups have the largest percentage of Big Auditors at 90%, 76%, and 88% respectively. When we examine the firm size distribution between these industry groups we see that these three industries tend to consist of a greater number of larger sized firms. Firms in the construction, real estate, finance, and general services have the lowest percentages of Big Auditors, but these industries also tend to consist of a greater percentage of small to mid-sized firms.

When we examine the data set for the market share of the individual big audit firms we see that for private Norwegian firms BDO has the largest market share (37%) (Table 4). As BDO is the largest audit firm in Norway it is perhaps not surprising that the majority of firms in our data set have selected BDO (when selecting a large audit firm) as these are private Norwegian firms that tend to operate in the Norwegian market. Small and medium sized firms also dominate our data set, and therefore we might expect fewer
occurrences of the traditional Big Four firms. This is in fact more clearly observed when analyze the distribution of audit firms disaggregated by firm size. We see that of the big audit firms considered in our study, BDO makes up a large share (35-42%) across all firm sizes but the traditional Big Four audit firms are better represented in large sized firms (Table 5).

We continue the analysis by looking into the type of auditor changes observed in the data set (Table 6). We find that the majority of firms that change auditors go from a small-to-big auditor (34%), and the least number of changes occur from big-to-small (11%). In general our data set is characterized by a nearly equal distribution of small-to-small, small-to-big, and big-to-big auditor changes. Because our data set largely consists of small to medium sized firms we might expect that there are less changes from big to small auditors as these firms may have been less likely to select a Big Auditor from the start.

Analyzing the distribution of auditor changes by firm size we that in general there are few differences in the types of auditor changes between different sized firms (Table 7). A notable deviation is that we see a smaller percentage of small-to-small changes in large sized firms (19%) as compared to the small and mid-sized firms. Big-to-small auditor changes reflect the least amount of changes we see in our data set, and are also the smallest percentage of changes made by all firm sizes (10-11.5%).

We also incorporate the prior audit opinion on the types of auditor changes seen in the data set (Table 8). We generate an audit opinion variable using the database variable for auditor remarks as a starting point. We combine all remarks that are not representing an ‘unmodified’ audit opinion and label these modified opinions. The majority of audit change firms have received an unmodified audit opinion in the year prior to the audit change, but for firms that received a modified audit opinion we observe that the largest percentage switch from big to small auditors (19.4%) followed by firms that switch from small to small auditors (18.7%).
In order to examine the effect that audit fees might have on the type of auditor change we observe we characterize audit fees into a low and high fee category. The classification is established as follows:

\[
\text{Audit Fee Size} = \frac{\text{Audit Fee}}{\text{Total Revenues}}
\]

We consider any audit fee that is greater than 1% of total revenues to be considered a high audit fee. Table 9 shows that the percentages of firms that have high audit fees in the year prior to the audit change have made a change from a big to small auditor. This is reasonable as we might expect that smaller auditors will have a lower fee for their services than their larger counterparts. This information is supported by studies that show firms may initiate an audit change in order to lower costs associated with the service and hence audit fee may at times be related to an audit change (Kikhia, 2014).

### 4.2 Part 2 – Earnings Management and Auditor Changes

#### 4.2.1 Data source and sample selection

In Part 2 of our analysis we have a more restrictive sample selection due to the statistical analyses that will be performed. We begin by extracting data from the SNF database for all firm years 2010 to 2012 (Berner, Mjøs, & Olving, 2014). We use years 2010 and 2011 to create lagged variables and append these to the 2012 dataset so that our dataset for estimating discretionary accruals consists of only firm years from 2012, but includes relevant variables to estimate the discretionary accruals of the prior year.

Sample selection criteria for the tests of our hypotheses are summarized in Table 10. Our exclusion criteria are as follows:

- Non-AS firms, as large firms (e.g., ASA) are more likely to engage in income decreasing earnings management (Watts & Zimmerman, 1990).
• Financial and insurance firms because their financial reporting environment differ from those of industrial firms, and they have fundamentally different accrual processes that are not likely to be captured well by the expectations models of normal accrual activity (Peasnell et al., 2000).
• Firms that fall under voluntary audit regulations.
• All firms with a missing industry code as this does value is require for cross sectional estimation of discretionary accruals.
• Very small firms based on a threshold for sales revenue or total assets as these may introduce outliers and noise into our discretionary accruals estimations. This exclusion criteria also controls for the bias that can be present with small firms, because there is a higher chance they will engage in earnings management (Choi & Lee, 2002).
• Firms that are marked as inactive, as well as firms that report no auditor.
• All non-audit change firms.
• In order to prevent overlapping periods of analysis, we remove firms in which the previous auditor was not employed for the 2 previous years. This restriction is consistent with DeFond and Subramanyam (1998).
• Firm years that do not have sufficient data to calculate accruals (missing any of our required variables in the total accruals calculation or discretionary accruals model) or perform our analyses.
• Firms with less than 10 observations for each industry in order to prevent estimating discretionary accruals with too few observations.

Our final sample consists of 5605 firms from year 2012, and including lagged data for 2010 and 2011.

4.2.2 Estimation of earnings management proxy

4.2.2.1 Calculation of total accruals

Despite the various limitations discussed in detail in Section 3.3.3, the balance sheet method is still a popular and widely used approach for calculating total accruals (Hribar
& Collins, 2002). An explanation for this could be that the balance sheet method, at a research level, is less problematic based on the reduced restrictions it places on data availability. Although research supports that the cash flow statement approach is better specified, due to the limitations of variables available in the SNF-database we are required to estimate total accruals using the balance sheet approach. Using the available data we calculate total accruals using the same method described in Davidson et al. (2006). Total (i.e. current) accruals are defined as the change in non-cash current assets less the change in operating current liabilities:

$$TA = [\Delta \text{Account Receivables} + \Delta \text{Inventories} + \Delta \text{Current Assets}] - [\Delta \text{Accounts Payable} + \Delta \text{Income Tax Payable} + \Delta \text{Current Liabilities}]^5$$

### 4.2.2.2 Discretionary accruals modeling

We limit our estimation of discretionary accruals to the period of 2011-2012 in order to mitigate possible business events or economic influences that could potentially affect our measurements. For example, several studies show that management has a tendency to “dress” financial statements prior to mergers and acquisitions, and it can be assumed over longer time periods that one might sample a greater number of these events (Baik, Kang, & Morton, 2007; Erickson & Wang, 1999; Lee, Kim, Nam, & Han, 2008). Larger macroeconomic events, such as the economic downturn in 2008, can possibly affect our results as financially distressed firms have greater incentives to engage in earnings management (Sweeney, 1994). Although Norway was only moderately affected by the global recession there was a muted impact across certain sectors of the economy (Guo, 2010). While our final sample only includes the firm years from 2012, we have appended the lagged variables for 2011 and 2010 to each firm observation so that we are able to calculate the discretionary accruals for 2011 and perform all subsequent analyses.

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^5 See Appendix A1 for reference to SNF database variable names.
We estimate discretionary accruals using the Kothari et al. (2005) modification of the Jones (1991) model. We regress the variables that are expected to contribute to the non-discretionary accruals portion of total accruals and use the residual of the regression as an estimation of the firm’s discretionary accruals. We scale our inputs by lagged total assets and include a constant term to address issues related to heteroskedasticity (Kothari et al., 2005).

The details of the model have been discussed in Section 3.1 and are briefly summarized here:

\[ TA_{it} = a_0 + a_1 \left( \frac{1}{A_{it-1}} \right) + a_2(\Delta REV_{it}) + a_3(PPE_{it}) + a_4(ROA_{it}) + e \]

where:
- \( ROA_{it} \) = is return on assets for firm \( i \) in year \( t \)
- \( a_0 \) = constant term.
- the remaining variables are the same as in the Jones Model (Jones, 1991). TA, REV, and PPE, and ROA are scaled by \( A_{it-1} \).

4.2.3 Control variables

In our subsequent analyses we control for a number of firm characteristics that have previously been shown to have a material effect on earnings management estimates.

4.2.3.1 Firm growth and size

Previous research has provided evidence that small firms are more likely to engage in earnings management and that small and young firms will tend to have larger discretionary accruals than larger more mature firms (Choi & Lee, 2002; P. M. Dechow & Dichev, 2002). We control for these effects through the inclusion of the natural logarithm of total assets (Chtourou & Bedard, 2001).
We control for firm growth because growing firms are more likely to engage in mergers and acquisitions, and firms with greater growth are more likely to have greater accruals (Collins, Pungaliya, & Vijh, 2012). Following the same method as in Collins et al. (2012) we will control for firm growth by using a rolling window annual measure of sales growth calculated from sales revenue as:

\[ \text{Sales Growth} = \frac{\text{Sales}_t - \text{Sales}_{t-1}}{\text{Sales}_{t-1}} \]

**4.2.3.2 Financial distress (Altman Z-score)**

We control for financial distress because financially distressed firms are more likely to engage in discontinued operations, which can result in a negative bias when estimating accruals (Hribar & Collins, 2002). Financially distressed firms also have greater incentives to manipulate earnings because the management may be motivated to take action to improve the appearance of the firm’s financial position (Sweeney, 1994).

To capture the impact of financial distress on earnings management we include the Altman Z-score in our analyses (Edward I. Altman, 1968, 1982; Edward. I Altman, 2002). The Altman Z-score has been found to be a relatively good measure of financial distress (Foster, 1986).

The adjusted Z-score for private firms is calculated as a linear combination of five common financial ratios, which are given different weights:

\[ Z = 0.717R_1 + 0.847R_2 + 3.107R_3 + 0.420R_4 + 0.998R_5 \]

where,

\[ R_1: \text{Working Capital} / \text{Total Assets}, \ R_2: \text{Retained Earnings} / \text{Total Assets}, \ R_3: \text{(Earnings Before Interests and Taxes (EBIT))} / \text{Total Assets}, \ R_4: \text{Book Value of Equity} / \text{Total Liabilities}, \ R_5: \text{Sales} / \text{Total Assets}. \] Note that Altman revised the Z-score formula for private firms in 2002 (Edward. I Altman, 2002).

The Z-score can be interpreted in the following way:
- Z-Score above 2.90 – firm is considered to be in good health
- Z-Score between 2.90 and 1.23 – warning sign
- Z-Score below 1.23 – firm could be headed toward bankruptcy

5. Results – Earnings Management and Auditor Changes

5.1 Descriptive Statistics

When we compare the values of different variables that characterize firms that have selected a Big Auditor or a non-Big Auditor we see some noticeable differences (Table 11 and Table 12). In general all of the variables from the firms’ balance sheet show larger mean values for firms selecting big audit firms. This is as expected because we see that larger firms (based on total revenue) make up a greater percentage of those that select Big Auditors.

When comparing our control variables across the two groups of firms we see that sales growth is smaller for firms with Big Auditors, while the Altman Z-score are roughly similar between the two groups. We might conclude that on average firms that have selected a non-Big Auditor are experiencing larger year-on-year sales growth as compared to the average for the Big Auditor group. In terms of financial health as measured through the Z-score we see on average that firms with a Big Auditor and those with a non-Big Auditor are in roughly similar financial health. The natural log of total assets also indicates that larger firms make up a greater percentage of the sample that selects a Big Auditor in 2012.

The summary of dependent variables indicates that average discretionary accruals for small audit firms is slightly negative (-0.0760) as compared to big audit firms that have positive mean discretionary accruals (0.0231). The change in discretionary accruals is
also negative for small audit firms (-0.0322), whereas big audit firms show a positive change (0.0476).

5.2 Discretionary Accruals around Audit Changes

5.2.1 Univariate analysis of discretionary accruals

H$_1$ predicts that firms engage in audit shopping to find a more lenient auditor that is willing to accept management’s desire to opportunistically manage earnings. If this hypothesis holds true for the population of audit change firms, we expect discretionary accruals to be positive in the year of the audit change (Year 0) and increased from the year before (Year -1).

The results for testing H$_1$ are provided in Table 13. Mean and median values for discretionary accruals in the year prior to the audit change and the year following the audit change are presented along with the values for the change in discretionary accruals. The $p$-values for the two-tailed significance tests are also presented. In the year prior to the audit change both the mean and median values of discretionary accruals are significantly negative at -0.026 and -0.020, respectively at $p < 0.01$. The mean and median change in discretionary accruals from year 2011 to 2012 is positive although insignificant. In the first year with the new auditor the values are still slightly negative although only the median is significantly negative (-0.020 at $p<0.01$). Although not significant at traditional levels, the general trend of discretionary accruals is becoming less negative. Based on the assumptions of our hypothesis we cannot conclude that audit shopping is the main motivation for auditor changes because our first condition is not fulfilled (i.e. positive discretionary accruals in the event year).

These results suggest that our hypothesis is not valid because we do not observe positive discretionary accruals in Year 0, and although the change in discretionary accruals is positive the value is insignificant. Our results are similar to those of DeFond and Subramanyam (1998) who argue that auditor conservatism could be the main reason for
auditor changes if discretionary accruals are significantly less negative in the event year, as compared to the year before. DeFond and Subramanyam (1998) suggest that negative discretionary accruals in audit change firms may be due to firms undergoing operational changes that include restructuring charges to income. They perform a control for these variables and determine that the results remain unchanged with audit change firms reporting income decreasing discretionary accruals during the last year with the auditor. While we do not perform this control on our data set, it is plausible that we may be observing the same phenomena with regards to the direction of discretionary accruals in the event year.

5.2.2 Discretionary accruals and audit change type

H2 states that when firms are engaged in audit shopping (i.e. searching for a more lenient auditor) the firms are more likely to engage in earnings management after the audit change if the firm’s new auditor is a non-Big Auditor (particularly true if the previous auditor was a Big Auditor). If our hypothesis holds true we expect that discretionary accruals in the year of the audit change to be positive and increasing from the year before when a firm changes auditor to a non-Big Auditor. We might expect the opposite if the firm’s predecessor auditor is a non-Big Auditor and changes to Big Auditor as the new auditor may be more conservative with the new client. Table 14 presents this expectation by examining discretionary accruals for each type of audit change in the year prior to the audit change (2011) and the first year with the new auditor (2012).

Firms that have a Big Auditor and switch to another Big Auditor have negative mean and median discretionary accruals (-0.007 and -0.022) in the year prior to the audit change although only the median is significant at $p < 0.01$. They experience a significant increase in both the mean and median discretionary accruals of 0.189 and 0.039 at $p < 0.01$, respectively. In the first year with the successor Big Auditor these firms have significantly positive mean discretionary accruals of 0.115 at $p < 0.01$, while the median is positive but insignificant. Although the results tend to be somewhat inconclusive, we observe a slightly different change in discretionary accruals than we might expect if the successor Big Auditor should continue to be as conservative as the predecessor Big
Auditor (Defond and Subramanyam, 1998). We might interpret this as the firm has undergone some structural change that has resulted in selection of a new auditor as well as an increase in discretionary accruals due to restructuring charges to income (DeFond & Subramanyam, 1998; Johnson & Lys, 1990).

Firms with non-Big Auditors who switch to a Big Auditor have mean and median discretionary accruals that are negative and significant at -0.030 and -0.021 at \( p<0.01 \), respectively, in the year prior to the change. They experience a negative change in mean and median values, although only the mean value is significant at \( p<0.1 \). In the first year with the Big Auditor successor they have significantly negative mean and median discretionary accruals of -0.072 and -0.026 \( p<0.01 \), respectively. The direction of the differences in discretionary accruals for the group of small-to-big audit change firms seems to support the notion that clients of Big Auditors that had a non-Big Auditor successor are subjected to more conservative accounting practices that result in income decreasing discretionary accruals (Defond and Subramanyam, 1998). In these cases the audit change does not seem to be motivated by the attempt to find a more lenient auditor.

For firms that change from a non-Big Auditor to another non-Big Auditor we see that in the year prior to the audit change mean and median discretionary accruals are negative and significant at -0.069 and -0.029 at \( p<0.01 \). They experience a negative change in discretionary accruals, although insignificant. During the first year with the new non-Big Auditor they report increasingly negative mean and median discretionary accruals equal to -0.112 and -0.041 at \( p<0.01 \). These results seem to suggest that either the change to a new non-Big Auditor also results in the new auditor treating the client with conservative accounting choices, or these firms may be looking to engage in larger amounts of income decreasing earnings management.

Firms in the big-to-small audit change group have in the year prior to the audit change positive but insignificant mean and median discretionary accruals of 0.029 and 0.003 at \( p=0.16 \) and \( p=0.23 \), respectively. The change in mean discretionary accruals is -0.035 at \( p=0.33 \), while the median is marginally positive but insignificant at \( p=0.58 \). In the first
year with the non-Big Auditor predecessor the mean discretionary accruals are positive but insignificant, while the median discretionary accruals are negative and significant (-0.016 at p<0.1). These results are somewhat inconclusive and not statistically significant. There is no support for H2 as we do not see significant income increasing earnings management under this type of audit change.

5.2.3 Discretionary accruals following type of audit opinion

H3 suggests that firms who change auditors for opportunistic reasons will have greater levels of earnings management when the firm changes auditor after having received a modified audit opinion and this will be more prevalent in firms that switch to a non-Big Auditor.

Table 15 reports the mean and median discretionary accruals segregated by audit opinion type. We take the audit opinion classification from the SNF database and mark all non-remarks or general remarks as unmodified. A modified opinion consists of conditional remarks, negative remarks, the auditor refraining from commenting on annual reports, indications of a loan to shareholders without sufficient security, misplaced tax deductions from the payroll, missing documentation or control, and loss of equity capital comments.

For firms receiving an unmodified opinion prior to the audit change we see that both the mean and median discretionary accruals are negative (-0.031 and -0.020 respectively) at p<0.01. In the first year with the predecessor auditor mean discretionary accruals are marginally positive but insignificant, while median discretionary accruals are slightly less negative (-0.19) and significant at p<0.01. The mean and median value of the change in discretionary accruals is positive (0.040 and 0.006), although only the mean is significant at p<0.1 while the median is marginally insignificant at p=0.12. There is weak evidence that firms that change auditor after having received a modified audit opinion experience an increase in discretionary accruals, although the results are not significant at traditional levels.
Firms that received a modified audit opinion have insignificant levels of mean and median discretionary accruals in the year prior to the audit change, but experience a negative change in discretionary accruals after the change. The mean and median change in discretionary accruals is -0.126 and -0.011, respectively, while only the mean is significant at \( p=0.1 \). In the first year with the new auditor both the mean and median discretionary accruals are negative and significant (-0.127 and -0.043) at \( p=0.05 \) and \( p=0.04 \), respectively. The results of an independent means t-test comparing the discretionary accruals between the group of firms with a modified opinion vs. those with an unmodified opinion suggests that these values are significantly different at \( p=0.1^6 \).

We observe that firms who switch auditor after receiving a modified audit opinion experience larger negative discretionary accruals, therefore our hypothesis is not valid. We do not observe income increasing earnings management following audit changes for firms that received a modified audit opinion in the prior year. These observations are in agreement with those of Defond and Subramanyam (1998). Our results provide supporting evidence that clients receiving a modified audit opinion pose a greater litigation risk, and thus conservative accounting choices by the new auditor are used to mitigate this risk. This is in line with research that has found that auditor litigation is significantly associated with the presence of modified audit opinions (Lys & Watts, 1994). Other explanations of our results could be that the majority of the firms that received a modified opinion contained issue about the going concern status and the new auditor takes on a more conservative approach (Ajona, Dallo, & Alegría, 2008; Butler, Leone, & Willenborg, 2003). Butler et al. (2003) provide an alternative explanation showing evidence that modified opinions that are primarily due to going concern uncertainty could result in firms engaging in liquidity survival tactics (e.g., delaying payments to suppliers) that is often associated with larger negative accruals.

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6 \( p \)-value result from two-tailed t-test. Because the variances are not equal we run the test with Stata’s unequal option which causes Stata to run a Satterthwaite approximation on data (calculating the t-statistic without equal variances).
5.2.4 Effect of audit change on earnings management

We further explore the audit change and earnings management question by examining the potential effects different types of audit changes have on discretionary accruals. We run a series of OLS regressions to identify effects of audit change and audit opinion on discretionary accruals and the change in discretionary accruals (Table 16). Discretionary accruals are the dependent variable in regressions 1 and 3, while the change in discretionary accruals is the dependent variable in regression 2 and 4. We test variance inflation factors (VIFs) for all variables in each regression and observe values <2 suggesting there exists no problems related to collinearity. A minor level of heteroskedasticity still exists in our data and therefore we run the regressions to output robust standard errors in Stata. This also deals with minor concerns of normality in the control variables.

In regressions 1 and 2 we test our predictions of H2 that firms that change auditor are looking to engage in income increasing earnings management, and that this is more likely when the change is to a non-Big Auditor from a Big Auditor predecessor. The regression model includes dummy variables for audit change types (i.e. small-to-small, small-to-big, etc.) where the variable is equal to 1 if that type of change is true. Prior audit opinion is included in the regression as an additional independent variable. We include control variables for firm size and growth and financial distress. The results of the regressions indicate that there is no significance of audit change type to discretionary accruals or change in discretionary accruals. Again we do not observe direct evidence for H2. Log of total assets is however positive and significant in both regressions suggesting that in our sample larger firms are likely to have larger discretionary accruals. This is unlike other research that tends to show larger firms as having better accounting quality and therefore lower discretionary accruals. An explanation for this could be that our sample by definition includes smaller firms that are privately held vs. large publicly traded firms. In this case firm size may not be related to better accounting quality, and larger firms may have larger discretionary accruals due to larger variations in balance sheet items. The
Altman Z-score indicates that financial distress is significant and negatively correlated to both discretionary accruals (-0.069) and the change in discretionary accruals (-0.033). This is in agreement with research that shows firms in poor financial health (i.e. lower Altman Z-score) have incentives to engage in income increasing earnings management in order to meet earnings targets, to avoid debt covenant violations, or to avoid reporting significant losses (D. Burgstahler & Dichev, 1997; DeAngelo et al., 1994; DeFond & Jiambalvo, 1994). As the Altman Z-score increases, and therefore financial health is increasing, we observe lower discretionary accruals. Sales growth is significant and positively correlated to discretionary accruals (0.146), which is expected because growing firms are more likely to have larger discretionary accruals that may be attributed to mergers and acquisitions or the need of growing their asset side to meet future demand (Collins et al., 2012). Both sales growth and the log of total assets have a significant positive correlation to discretionary accruals, which is believable if we assume that companies with the largest size are also experiencing significant sales growth compared to their smaller peers.

We further test H3 in regressions 3 and 4. H3 predicts that earnings management will increase following an auditor change when they have received a modified audit opinion in the year prior to the change. We create an audit change-audit opinion interaction term similar to that of Davidson et al. (2006). We define this term by multiplying the audit change type dummy variable (D=1 if the type of change is true) with the prior audit opinion dummy variable (D=1 if receiving a modified audit opinion). The result of this is a dummy variable that equals 1 if the specific type of audit change occurs following a modified audit opinion. Results of the two regressions are similar to regressions 1 and 2 with regards to the audit change variables and the control variables. None of the interaction terms are significantly correlated to the change in discretionary accruals. There is however some significance between discretionary accruals and the interaction term. The coefficient of the interaction term for small-to-small audit changes following a modified audit opinion is negative (-0.261) and significantly correlated to discretionary accruals at p<0.1. The small-to-big interaction term which is slightly more negative (-0.283) and significantly correlated at p<0.05. These results are similar to Table 14 in that
we observe negative discretionary accruals for audit change firms following a modified audit opinion. The coefficient is more negative and significant for firms changing from small-to-big, which may be evidence of the successor Big Auditor being more conservative with their new client than a successor non-Big Auditor might be. This provides supporting evidence for our results in the previous section, and also indicates that Big Auditors are more litigation averse and prefer conservative accounting practices when presented with a risky client. The coefficient of the big-to-small interaction term is positive (0.23), but not significant. Although insignificant at conventional levels (t = 1.36), the positive value does potentially provide weak evidence for firms changing auditors from big-to-small to find a more lenient auditor after having received a modified audit opinion.

5.6 Robustness Tests

In all our analyses it is important to understand how various changes to the sample selection and inputs may alter the interpretation of the results.

We removed very small firms from our sample in order to reduce the noise these may imprint on the discretionary accruals estimation. Many of these firms have zero sales revenue and zero values for other variables in the balance sheet. Upon closer inspection we find that many of these small “firms” are actually property/real estate AS firms that are perhaps engaged in managing the assets of a particular building or property. We re-run our discretionary accruals estimation while including these firms. While the materiality of or findings do not change in value or significance we do observe an increase in outlier discretionary accruals calculations, as well as additional problems that are introduced into the calculations of sales growth and ROA. We believe removing these firms from the sample of firms in our study produces a cleaner more specified data set for the topic of earnings management and audit changes.

In our total accruals calculation all variables are scaled by lagged total assets to reduce heteroskedasticity following Kothari et al. (2005). Some studies have chosen to scale
variables by average total assets (P. Dechow, Richardson, & Tuna, 2003). We test the robustness of our results by scaling relevant variables with average total assets and observe no significant changes in our findings.

While we select the Kothari et al. (2005) model with ROA included as an independent variable in the regression, other discretionary accruals models may produce different results. We selected one of the most popular discretionary accruals models, the modified Jones model as specified in Dechow et al. (1995), and compared the resulting discretionary accruals estimates. We observe that the two models generally produce similar central tendencies in the discretionary accruals value although the modified Jones model produces a slightly positive mean value (.020), whereas the Kothari model produces a slightly negative mean value (-0.008). The results of Kothari et al. (2005) suggest that misspecification is worsened in larger samples for all discretionary accruals measures, and suggests this tends to be worse for the modified Jones model, as compared to a model that includes a measure for performance. Because we have a relatively large sample size as compared to most studies utilizing discretionary accruals, we use the Kothari et al. (2005) model. We also believe that including a performance measure in the discretionary accruals estimate is valid in the case of our sample.

6. Value Relevance of this Study

Investors

This study contributes to the body of knowledge that is useful for investors by identifying firm behavior that may signal a red flag. Management has the primary responsibility for publishing external accounting information. In order for this information to be of value to investors, it has to be both relevant and reliable in terms of quality. If a firm engages in earnings management it attempts to present data that may not be the true image of the economic reality and performance. In these cases the information value to the investor is
limited by the poor accounting quality, or in the cases of illegal forms of earnings management could result in large investment losses. We find that in general the sample of private Norwegian firms that engage in audit changes do not engage in earnings management, or at least do not change auditors to engage in earnings management. Information asymmetry is therefore minimized and investors are provided with more reliable information. Although the specific case of Troms Kraft stands out as a notable occurrence of illegal earnings management surrounding an audit change, we do not find significant abnormal accruals surrounding the audit changes in our sample.

**Standards setters**

The topic of audit change and earnings management has value to standard setters, such as the Norwegian Accounting Standards Board (NASB) for Norwegian firms, and the International Financial Reporting Standards (IFRS) that is mandatory for public firms. The primary role of standard setters is to define the accounting language that is used by management to communicate with external stakeholders (P. Healy & Wahlen, 1999). Standards allow managers to exercise judgment within legal bounds when preparing the financial statements. By exercising this judgment there arises opportunities for earnings management. A critical task for standard setters is to determine how much judgment should be allowed for in the written accounting standards. It is important for them to be aware if pervasive evidence of earnings management exists in firms that may warrant modifying existing standards around audit changes. These standards should be written to mitigate the potential for investors to be misled by earnings management. It is also important to know the forms with which management abuses judgment, and which specific accruals practices are used. These results indicate that audit changes are not necessarily red flags that standard setters should focus attention on. Rather, results show that in general an audit change following a modified opinion results in lower

7 In Financial Accounting Concepts Statement 5 (Recognition and Measurement in Financial Statements of Business Enterprises, paragraph 5), the Financial Accounting Standards Board states, “Financial statements are a central feature of financial reporting – a principal means of communicating financial information to those outside an entity.”
discretionary accruals that might are likely the result of the new auditor being conservative with its new client.

7. Limitations and Future Research

This study’s main objective is to investigate whether or not management changes auditors in order to engage in opportunistic earnings management. Therefore, we implicitly assume a causal relationship between the two parameters. There are some inherent difficulties in interpreting fluctuations in discretionary accruals as changes can come from a number of factors. These changes can for example be explained by changes in accounting standard. The IFRS came into force in 2005, and although previous research provides mixed evidence on the effects of the standards change on earnings management, there is a possibility that it would affect discretionary accruals (Capkun, Collins, & Jeanjean, 2013). An example of the differences in the accounting standards is the depreciation item on the balance sheet statement. Pursuant to IFRS, the value of depreciations in the balance sheet is more likely to be lower than firms reporting the same item pursuant to Norwegian rules (NGAAP). Although we have excluded public firms (obligated to adopt IFRS standards from 2005) our remaining sample includes firms that follow NGAAP and IFRS accounting practices. Future research might extend this study by controlling for the type of accounting standard used by the firm, whether IFRS or NGAAP, as well as separating these two groups of firms and analyzing the differences in discretionary accruals between the two.

Other factors that could explain fluctuations in discretionary accruals are mergers, acquisitions, and/or changes in-group structure (Hribar & Collins, 2002). We attempt to indirectly control for these events by limiting the analysis to a smaller period of time (2 years) which mitigates the number of occurrences of these events that may be present in longer time series analyses. In a more detailed study, attempting to further control for
these events within the data set by examining firm years for mergers and acquisitions
evidence could yield a more powerful analysis of discretionary accruals.

We experienced a few limitations due to the source of our data. The study was originally
constructed to perform the analysis on data from years 2012-2013, but evaluation of the
audit change variable in 2013 demonstrated a number of incorrectly specified auditor
changes. Due to this data becoming available in November and the time frame for this
study we had to limit data selection to 2011-2012. We were unable to utilize the cash
flow method (SNF-database does not provide the cash flow statement) of calculating
current accruals, and with this follows the limitations that have previously been discussed
with regards to accruals calculations from the balance sheet method. Using the cash flow
method may result in slightly different results as the estimation of discretionary accruals
would be better specified.

We did not control for wording in the modified audit opinions. In general the majority of
our sample received no remarks from the auditor, whereas the next largest group is
general remarks, followed by going-concern issues. We grouped all audit opinions that
may be construed as negative into modified audit opinion. Future studies may examine
the specific relationship between unqualified vs. negative vs. going-concern audit
opinions and discretionary accruals around audit changes. Davidson et al. (2006)
controlled for wording and did not find that the addition of this control altered their
conclusions.

Our cross sectional data provides us with a snapshot of earnings management in the
limited study period we selected, while it might provide different results if another time
frame had been chosen. Future studies may extend this to other two year periods (i.e.
avoiding periods of strong recessions like 2008-2009), or extend the analysis to many
years to see how the interpretations may differ. One must keep in mind the
misspecification that arises in discretionary accruals models when increasing the size of
the sample and that larger time series analyses can include events such as mergers and
acquisitions or economic downturns that could have an effect on the earnings management estimation.

We did not take into consideration other variables that may have an effect on audit changes, such as audit fee. While we did include audit fee in initial exploratory regressions we did not find strong evidence to include it in the final analysis. Research has provided evidence that a lower audit fee relates to a measure of audit quality, and therefore a low audit fee may be related to earnings management (Gupta, Krishnan, & Yu, 2012). Future research could extend our study by examining the effect of audit fee, audit changes, and earnings management in more detail.

As discussed earlier, our results depend on the accuracy of the accruals measure and the inputs used in the model. Future research could apply different accruals calculations models to examine their effects on discretionary accruals estimation. One would possibly get different results by using total accruals instead of current accruals, by using different formulas for calculating accruals, or by using the cash flow statement instead of the balance sheet method.

8. Summary and Conclusion

We examine the occurrence of earnings management surrounding audit changes for Norwegian AS firms and whether audit changes are driven by management’s desire to opportunistically manipulate earnings.

The analysis shows that for the study period there is not a significant level of income increasing earnings management after audit changes. Results suggest that there is evidence that auditor conservatism may be a motivation for firms to change auditor, when the previous auditor prefers conservative practices that the firm’s management believes does not represent the true financial picture of the firm. Evidence also suggests that
clients of Big Auditors that had a non-Big Auditor predecessor may be subjected to more conservative accounting and therefore experience larger negative discretionary accruals. Audit changes where the firm received a modified audit opinion in the year prior to the change results in significantly larger negative discretionary accruals, again indicating the successor auditor likely being more conservative with its new client. Finally, results suggest that firms that receive a modified audit opinion prior to the audit change experience larger negative discretionary accruals when switching from a non-Big Auditor to a Big Auditor when compared to these same firms that switch from a non-Big Auditor to another non-Big Auditor. These results are similar to those of DeFond and Subramanyam (1998), although differ slightly from Davidson et al. (2006) who finds slight evidence to support the notion that an audit change to a non-Big Auditor following a modified opinion results in more positive discretionary accruals. We find weak evidence to support the results of Davidson et al. (2006), although our results are not significant at traditional levels. It is plausible that for Norwegian AS firms there are fewer incentives to engage in earnings management and therefore the prevalence of income increasing earnings management is muted.
References


Gupta, P. P., Krishnan, G. V., & Yu, W. (2012). Do auditors allow earnings management when audit fees are low?


Moltu, C. F., & Husa, J. A. (2012). *Earnings management i norske private foretak*


### Tables


#### Table 1 – Sample selection criteria for auditor changes, 2011-2012

<table>
<thead>
<tr>
<th>Sample Selection Criteria</th>
<th>Firm years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm years 2012</td>
<td>263 675</td>
</tr>
<tr>
<td>Exclusion criteria:</td>
<td></td>
</tr>
<tr>
<td>Remove non-private limited liability (AS) firms</td>
<td>-39 779</td>
</tr>
<tr>
<td>Firm inactive in 2012</td>
<td>-8 480</td>
</tr>
<tr>
<td>Non-audit change firms</td>
<td>-127 890</td>
</tr>
<tr>
<td>Meet the requirements for not having compulsory audit &amp; small firms</td>
<td>-72 738</td>
</tr>
<tr>
<td>Missing auditor info</td>
<td>-418</td>
</tr>
<tr>
<td>Very small firms (income &lt;1MNOK or total assets &lt;5MNOK)</td>
<td>-6</td>
</tr>
<tr>
<td>Missing industry code</td>
<td>-21</td>
</tr>
<tr>
<td># of observations in final sample</td>
<td>14 343</td>
</tr>
</tbody>
</table>

#### Table 2 – Comparison of firm size and audit firm size, 2011-2012

<table>
<thead>
<tr>
<th>Firm Size</th>
<th>non-Big Auditor</th>
<th>Big Auditor</th>
<th>% with Big Auditor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>3022</td>
<td>4150</td>
<td>57.9%</td>
</tr>
<tr>
<td>Mid</td>
<td>1416</td>
<td>2170</td>
<td>60.5%</td>
</tr>
<tr>
<td>Large</td>
<td>1057</td>
<td>2528</td>
<td>70.5%</td>
</tr>
<tr>
<td>Total</td>
<td>5495</td>
<td>8848</td>
<td>61.7%</td>
</tr>
</tbody>
</table>
Table 3 – Industries and audit firm size, 2011-2012

<table>
<thead>
<tr>
<th>Industry</th>
<th>non-Big Auditor</th>
<th>Big Auditor</th>
<th>Total Firms</th>
<th>% with Big Auditor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Industry</td>
<td>81</td>
<td>170</td>
<td>251</td>
<td>68%</td>
</tr>
<tr>
<td>Petroleum</td>
<td>16</td>
<td>139</td>
<td>155</td>
<td>90%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>389</td>
<td>745</td>
<td>1134</td>
<td>66%</td>
</tr>
<tr>
<td>Energy</td>
<td>30</td>
<td>95</td>
<td>125</td>
<td>76%</td>
</tr>
<tr>
<td>Construction</td>
<td>943</td>
<td>1344</td>
<td>2287</td>
<td>59%</td>
</tr>
<tr>
<td>Trade</td>
<td>1362</td>
<td>2249</td>
<td>3611</td>
<td>62%</td>
</tr>
<tr>
<td>Shipping</td>
<td>74</td>
<td>130</td>
<td>204</td>
<td>64%</td>
</tr>
<tr>
<td>Transport</td>
<td>396</td>
<td>635</td>
<td>1031</td>
<td>62%</td>
</tr>
<tr>
<td>IT</td>
<td>199</td>
<td>351</td>
<td>550</td>
<td>64%</td>
</tr>
<tr>
<td>Finance</td>
<td>149</td>
<td>161</td>
<td>310</td>
<td>52%</td>
</tr>
<tr>
<td>Real Estate</td>
<td>896</td>
<td>1503</td>
<td>2399</td>
<td>63%</td>
</tr>
<tr>
<td>General Services</td>
<td>642</td>
<td>844</td>
<td>1486</td>
<td>57%</td>
</tr>
<tr>
<td>Research &amp; Development</td>
<td>2</td>
<td>15</td>
<td>17</td>
<td>88%</td>
</tr>
<tr>
<td>Public Sector</td>
<td>316</td>
<td>467</td>
<td>783</td>
<td>60%</td>
</tr>
<tr>
<td>Total</td>
<td>5495</td>
<td>8848</td>
<td>14343</td>
<td>62%</td>
</tr>
</tbody>
</table>

Table 4 – Audit firm market share

<table>
<thead>
<tr>
<th>Auditor</th>
<th>Firms with Auditor</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>non-Big Auditor</td>
<td>5495</td>
<td>38%</td>
</tr>
<tr>
<td>E&amp;Y</td>
<td>979</td>
<td>7%</td>
</tr>
<tr>
<td>Deloitte</td>
<td>698</td>
<td>5%</td>
</tr>
<tr>
<td>KPMG</td>
<td>716</td>
<td>5%</td>
</tr>
<tr>
<td>PWC</td>
<td>1206</td>
<td>8%</td>
</tr>
<tr>
<td>BDO</td>
<td>5249</td>
<td>37%</td>
</tr>
<tr>
<td>Total</td>
<td>14343</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 5 – Distribution of auditor and firm size

<table>
<thead>
<tr>
<th>Auditor Firm</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
</tr>
</thead>
<tbody>
<tr>
<td>non-Big Auditor</td>
<td>42 %</td>
<td>39 %</td>
<td>29 %</td>
</tr>
<tr>
<td>E&amp;Y</td>
<td>6 %</td>
<td>5 %</td>
<td>9 %</td>
</tr>
<tr>
<td>Deloitte</td>
<td>5 %</td>
<td>4 %</td>
<td>6 %</td>
</tr>
<tr>
<td>KPMG</td>
<td>5 %</td>
<td>3 %</td>
<td>7 %</td>
</tr>
<tr>
<td>PWC</td>
<td>7 %</td>
<td>7 %</td>
<td>13 %</td>
</tr>
<tr>
<td>BDO</td>
<td>35 %</td>
<td>41 %</td>
<td>36 %</td>
</tr>
<tr>
<td>Total # Firms</td>
<td>7172</td>
<td>3586</td>
<td>3585</td>
</tr>
</tbody>
</table>
Table 6 - Description of types of auditor changes, 2011-2012

<table>
<thead>
<tr>
<th>Type of Audit Change</th>
<th># of Firms</th>
<th>Percentage of Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small-to-small</td>
<td>3899</td>
<td>27.2%</td>
</tr>
<tr>
<td>Small-to-big</td>
<td>4856</td>
<td>33.9%</td>
</tr>
<tr>
<td>Big-to-big</td>
<td>3992</td>
<td>27.8%</td>
</tr>
<tr>
<td>Big-to-small</td>
<td>1596</td>
<td>11.1%</td>
</tr>
<tr>
<td>Total</td>
<td>14343</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 7 – Distribution of types of auditor changes by firm size, 2011-2012

<table>
<thead>
<tr>
<th>Type of Audit Change</th>
<th>Firm Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small</td>
</tr>
<tr>
<td>Small-to-small</td>
<td>2196</td>
</tr>
<tr>
<td></td>
<td>30.6%</td>
</tr>
<tr>
<td>Small-to-big</td>
<td>2258</td>
</tr>
<tr>
<td></td>
<td>31.5%</td>
</tr>
<tr>
<td>Big-to-big</td>
<td>1892</td>
</tr>
<tr>
<td></td>
<td>26.4%</td>
</tr>
<tr>
<td>Big-to-small</td>
<td>826</td>
</tr>
<tr>
<td></td>
<td>11.5%</td>
</tr>
</tbody>
</table>

1Percentages displayed are column percentages.

Table 8 – Distribution of auditor change categorized by prior audit opinion

<table>
<thead>
<tr>
<th>Type of Audit Change</th>
<th>Prior Audit Opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unmodified</td>
</tr>
<tr>
<td>Big to Big</td>
<td>3567</td>
</tr>
<tr>
<td>Big to Small</td>
<td>1286</td>
</tr>
<tr>
<td>Small to Small</td>
<td>3169</td>
</tr>
<tr>
<td>Small to Big</td>
<td>4272</td>
</tr>
<tr>
<td>Total</td>
<td>12,294</td>
</tr>
</tbody>
</table>
Table 9- Distribution of audit change types categorized by audit fee\(^1\)

<table>
<thead>
<tr>
<th>Type of Audit Change</th>
<th>Low</th>
<th>High</th>
<th>% of changes with high fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big to Big</td>
<td>3044</td>
<td>285</td>
<td>8.6%</td>
</tr>
<tr>
<td>Big to Small</td>
<td>1239</td>
<td>150</td>
<td>10.8%</td>
</tr>
<tr>
<td>Small to Small</td>
<td>2801</td>
<td>209</td>
<td>6.9%</td>
</tr>
<tr>
<td>Small to Big</td>
<td>4012</td>
<td>246</td>
<td>5.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11096</td>
<td>890</td>
<td>7.4%</td>
</tr>
</tbody>
</table>

\(^1\)Prior year audit fee
### Part 2 – Earnings Management and Auditor Changes

Table 10 – Sample selection criteria for earnings management analysis, 2011-2012

<table>
<thead>
<tr>
<th>Sample Selection Criteria</th>
<th>Firm Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>All firm years - 2012</td>
<td>263675</td>
</tr>
<tr>
<td>Exclude:</td>
<td>223896</td>
</tr>
<tr>
<td>Remove non-AS firms</td>
<td></td>
</tr>
<tr>
<td>Removed finance and insurance firms</td>
<td>149711</td>
</tr>
<tr>
<td>Firms that meet the requirements for not having compulsory audit as of 2011</td>
<td>55103</td>
</tr>
<tr>
<td>Firms that do not have an industry code</td>
<td>54966</td>
</tr>
<tr>
<td>Very small firms (&lt;1MNOK in revenue or 5MNOK in asset)</td>
<td>32214</td>
</tr>
<tr>
<td>Inactive firms and firms without an auditor</td>
<td>31338</td>
</tr>
<tr>
<td>Non-audit change firms</td>
<td>6552</td>
</tr>
<tr>
<td>Firms which previous auditor not employed for previous 2 years</td>
<td>5975</td>
</tr>
<tr>
<td>Missing variables required to estimate DCA</td>
<td>5695</td>
</tr>
<tr>
<td>Less than 10 observations for each industry code</td>
<td>5605</td>
</tr>
</tbody>
</table>

# of observations in final sample: 5605
<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std.Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees</td>
<td>3,837</td>
<td>34.98</td>
<td>164.8</td>
<td>0</td>
<td>6598</td>
</tr>
<tr>
<td>Total Revenue</td>
<td>3,837</td>
<td>204225</td>
<td>4.170e+06</td>
<td>1000</td>
<td>2.520e+08</td>
</tr>
<tr>
<td>Total Assets</td>
<td>3,837</td>
<td>259821</td>
<td>6.998e+06</td>
<td>5000</td>
<td>4.300e+08</td>
</tr>
<tr>
<td>PPE</td>
<td>3,837</td>
<td>111766</td>
<td>3.926e+06</td>
<td>0</td>
<td>2.410e+08</td>
</tr>
<tr>
<td>Accounts Receivable</td>
<td>3,837</td>
<td>46195</td>
<td>638199</td>
<td>-5054</td>
<td>3.540e+07</td>
</tr>
<tr>
<td>Inventories</td>
<td>3,837</td>
<td>10300</td>
<td>79636</td>
<td>-68</td>
<td>3.322e+06</td>
</tr>
<tr>
<td>Current Assets</td>
<td>3,837</td>
<td>66957</td>
<td>663259</td>
<td>-4901</td>
<td>3.540e+07</td>
</tr>
<tr>
<td>Accounts Payable</td>
<td>3,837</td>
<td>11762</td>
<td>248554</td>
<td>-286</td>
<td>1.520e+07</td>
</tr>
<tr>
<td>ROA</td>
<td>3,837</td>
<td>0.0704</td>
<td>0.141</td>
<td>-0.503</td>
<td>0.508</td>
</tr>
</tbody>
</table>

**Control Variables¹:**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std.Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Growth</td>
<td>3,608</td>
<td>0.168</td>
<td>0.668</td>
<td>-0.954</td>
<td>5.076</td>
</tr>
<tr>
<td>Altman Z-Score</td>
<td>3,837</td>
<td>2.572</td>
<td>1.620</td>
<td>-0.720</td>
<td>7.775</td>
</tr>
<tr>
<td>Log of Total Assets</td>
<td>3,837</td>
<td>10.04</td>
<td>1.373</td>
<td>8.517</td>
<td>19.88</td>
</tr>
</tbody>
</table>

**Dependent Variables²:**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std.Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCA</td>
<td>3,837</td>
<td>0.0231</td>
<td>1.610</td>
<td>-7.933</td>
<td>6.994</td>
</tr>
<tr>
<td>Change in DCA</td>
<td>3,837</td>
<td>0.0476</td>
<td>2.016</td>
<td>-9.191</td>
<td>9.303</td>
</tr>
</tbody>
</table>

¹Sales growth and Altman Z-scores are winsorized at the 1% level to remove the noise due to outliers that report very abnormal balance sheet items
²Discretionary accruals are winsorized at the 1% level.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std.Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees</td>
<td>1,768</td>
<td>17.01</td>
<td>27.31</td>
<td>0</td>
<td>303</td>
</tr>
<tr>
<td>Total Revenue</td>
<td>1,768</td>
<td>37132</td>
<td>84832</td>
<td>1006</td>
<td>2.803e+06</td>
</tr>
<tr>
<td>Total Assets</td>
<td>1,768</td>
<td>32003</td>
<td>144555</td>
<td>5002</td>
<td>5.012e+06</td>
</tr>
<tr>
<td>PPE</td>
<td>1,768</td>
<td>6951</td>
<td>36539</td>
<td>0</td>
<td>1.004e+06</td>
</tr>
<tr>
<td>Accounts Receivable</td>
<td>1,768</td>
<td>8226</td>
<td>24540</td>
<td>-67</td>
<td>673652</td>
</tr>
<tr>
<td>Inventories</td>
<td>1,768</td>
<td>3127</td>
<td>7578</td>
<td>0</td>
<td>124622</td>
</tr>
<tr>
<td>Current Assets</td>
<td>1,768</td>
<td>16308</td>
<td>42450</td>
<td>18</td>
<td>1.223e+06</td>
</tr>
<tr>
<td>Accounts Payable</td>
<td>1,768</td>
<td>3041</td>
<td>6976</td>
<td>-65</td>
<td>97185</td>
</tr>
<tr>
<td>ROA</td>
<td>1,768</td>
<td>0.0703</td>
<td>0.150</td>
<td>-0.503</td>
<td>0.508</td>
</tr>
<tr>
<td>Control Variables¹:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales Growth</td>
<td>1,685</td>
<td>0.199</td>
<td>0.728</td>
<td>-0.954</td>
<td>5.076</td>
</tr>
<tr>
<td>Altman Z-Score</td>
<td>1,768</td>
<td>2.590</td>
<td>1.528</td>
<td>-0.720</td>
<td>7.775</td>
</tr>
<tr>
<td>Log of Total Assets</td>
<td>1,768</td>
<td>9.610</td>
<td>0.935</td>
<td>8.518</td>
<td>15.43</td>
</tr>
<tr>
<td>Dependent Variables²:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DCA</td>
<td>1,768</td>
<td>-0.0760</td>
<td>1.616</td>
<td>-7.933</td>
<td>6.994</td>
</tr>
<tr>
<td>Change in DCA</td>
<td>1,768</td>
<td>-0.0322</td>
<td>1.979</td>
<td>-9.191</td>
<td>9.303</td>
</tr>
</tbody>
</table>

¹Sales growth and Altman Z-scores are winsorized at the 1% level to remove the noise due to outliers that report very abnormal balance sheet items
²Discretionary accruals are winsorized at the 1% level.
Table 13 – Discretionary accruals for audit change firms during the period 2011-2012astics

<table>
<thead>
<tr>
<th>Year Relative to Auditor Change</th>
<th>Discretionary Accruals</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Median</td>
<td></td>
</tr>
<tr>
<td>Year -1 (2011)</td>
<td>-0.026</td>
<td>-0.020</td>
<td></td>
</tr>
<tr>
<td>(p-value)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td></td>
</tr>
<tr>
<td>Change from -1 to Year 0</td>
<td>0.022</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>(p-value)</td>
<td>(0.20)</td>
<td>(0.17)</td>
<td></td>
</tr>
<tr>
<td>Year 0 (2012)</td>
<td>-0.008</td>
<td>-0.020</td>
<td></td>
</tr>
<tr>
<td>(p-value)</td>
<td>(0.35)</td>
<td>(0.00)</td>
<td></td>
</tr>
</tbody>
</table>

aDiscretionary accruals are computed using the Kothari et al. (2005) model.

1p-values for the means are from two-tailed t-tests of the null hypothesis that the mean equals 0 (i.e. no earnings management. p-values for the medians are from two-tailed Wilcoxon sign rank tests of the null hypothesis that the median (i.e. central tendency) equals 0.

Table 14 – Discretionary accruals around audit changes segregated by audit change type

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>Change DCA</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Big Auditor</td>
<td>non-Big Auditor</td>
<td>Big Auditor</td>
</tr>
<tr>
<td></td>
<td>Successor</td>
<td>Successor</td>
<td>Successor</td>
</tr>
<tr>
<td></td>
<td>Mean (p-value)</td>
<td></td>
<td>Mean (p-value)</td>
</tr>
<tr>
<td>Big Auditor</td>
<td>-0.007 (0.36)</td>
<td>0.029 (0.16)</td>
<td>0.189 (0.00)</td>
</tr>
<tr>
<td>Predecessor</td>
<td>Median (p-value)</td>
<td></td>
<td>Mean (p-value)</td>
</tr>
<tr>
<td></td>
<td>-0.022 (0.00)</td>
<td>0.003 (0.23)</td>
<td>0.039 (0.00)</td>
</tr>
<tr>
<td></td>
<td>n 1609 546</td>
<td></td>
<td>n 1609 546</td>
</tr>
<tr>
<td>non-Big Auditor</td>
<td>Mean (p-value)</td>
<td></td>
<td>Mean (p-value)</td>
</tr>
<tr>
<td>Predecessor</td>
<td>-0.030 (0.01)</td>
<td>-0.069 (0.00)</td>
<td>-0.055 (0.08)</td>
</tr>
<tr>
<td></td>
<td>Median (p-value)</td>
<td></td>
<td>Mean (p-value)</td>
</tr>
<tr>
<td></td>
<td>-0.021 (0.00)</td>
<td>-0.029 (0.00)</td>
<td>-0.003 (0.44)</td>
</tr>
<tr>
<td></td>
<td>n 2228 1222</td>
<td></td>
<td>n 2228 1222</td>
</tr>
</tbody>
</table>

1p-values for the means are from two-tailed t-tests of the null hypothesis that the mean equals 0 (i.e. no earnings management. p-values for the medians are from two-tailed Wilcoxon sign rank tests of the null hypothesis that the median (i.e. central tendency) equals 0.
Table 15 – Discretionary accruals around audit changes segregated by audit opinion type

<table>
<thead>
<tr>
<th>Year Relative to Auditor Change</th>
<th>Prior Audit Opinion</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Modified DCA</td>
<td>Mean</td>
<td>Median</td>
<td>Mean</td>
<td>Median</td>
<td>Mean</td>
<td>Median</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Median</td>
<td>Mean</td>
<td>Median</td>
<td>Mean</td>
<td>Median</td>
</tr>
<tr>
<td></td>
<td>Year -1 (2011)</td>
<td>0.015</td>
<td>-0.023</td>
<td>-0.031</td>
<td>-0.020</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p-value)</td>
<td>(0.34)</td>
<td>(0.16)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change from -1 to Year 0</td>
<td>-0.126</td>
<td>-0.011</td>
<td>0.040</td>
<td>0.006</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p-value)</td>
<td>(0.10)</td>
<td>(0.30)</td>
<td>(0.07)</td>
<td>(0.12)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Year 0 (2012)</td>
<td>-0.127</td>
<td>-0.043</td>
<td>0.006</td>
<td>-0.019</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p-value)</td>
<td>(0.05)</td>
<td>(0.04)</td>
<td>(0.39)</td>
<td>(0.00)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1p-values for the means are from two-tailed t-tests of the null hypothesis that the mean equals 0 (i.e. no earnings management. p-values for the medians are from two-tailed Wilcoxon sign rank tests of the null hypothesis that the median (i.e. central tendency) equals 0.
Table 16 – Ordinary Least Squares regression results

<table>
<thead>
<tr>
<th>Audit Change Dummy Variables&lt;sup&gt;1&lt;/sup&gt;</th>
<th>1: Discretionary Accruals (Year 0)</th>
<th>2: Change in Discretionary Accruals</th>
<th>3: Discretionary Accruals (Year 0)</th>
<th>4: Change in Discretionary Accruals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small-to-Small</td>
<td>0.001 (0.01)</td>
<td>0.049 (0.60)</td>
<td>0.031 (0.48)</td>
<td>0.074 (0.90)</td>
</tr>
<tr>
<td>Small-to-Big</td>
<td>0.017 (0.32)</td>
<td>-0.003 (0.04)</td>
<td>0.041 (0.74)</td>
<td>0.011 (0.15)</td>
</tr>
<tr>
<td>Big-to-Small</td>
<td>0.073 (0.95)</td>
<td>0.008 (0.08)</td>
<td>0.019 (0.24)</td>
<td>-0.028 (0.27)</td>
</tr>
</tbody>
</table>

| Prior Audit Opinion<sup>2</sup>       | -0.103 (1.27)                      | -0.106 (1.03)                      | --                                 | --                                 |

| Control Variables                     |                                    |                                    |                                    |                                    |
| Log of Total Assets                   | 0.253 (13.22)<sup>***</sup>       | 0.263 (10.89)<sup>***</sup>       | 0.252 (13.18)<sup>***</sup>       | 0.263 (10.85)<sup>***</sup>       |
| Altman Z-score                        | -0.069 (4.72)<sup>***</sup>       | -0.033 (1.72)<sup>*</sup>         | -0.069 (4.76)<sup>***</sup>       | -0.033 (1.69)<sup>*</sup>         |
| Sales Growth                          | 0.146 (2.42)<sup>**</sup>         | 0.094 (1.11)                      | 0.147 (2.43)<sup>**</sup>         | 0.094 (1.11)                      |

| Audit Change - Audit Opinion Interaction Term<sup>3</sup> |                                    |                                    |                                    |                                    |
| Small-to-Small                          | --                                | --                                 | -0.261 (1.75)<sup>*</sup>         | -0.219 (1.14)                     |
| Small-to-Big                          | --                                | --                                 | -0.283 (2.13)<sup>**</sup>       | -0.17 (1.00)                      |
| Big-to-Small                          | --                                | --                                 | 0.23 (1.36)                       | 0.137 (0.66)                      |

| Constant                               | -2.361 (11.01)<sup>***</sup>   | -2.512 (9.11)<sup>***</sup>   | -2.356 (11.00)<sup>***</sup>   | -2.521 (9.10)<sup>***</sup>   |
|<sup>4</sup>                           | 0.06                             | 0.03                             | 0.06                             | 0.03                             |
|<sup>5</sup>                           | 5,605                            | 5,605                            | 5,605                            | 5,605                            |

<sup>a</sup> Four regressions are run with discretionary accruals and change in discretionary accruals as the dependent variables. The Change in Discretionary Accruals is calculated as the difference between discretionary accruals in the audit change year and the year prior to the audit change. Variables are winsorized at the 1% level to remove outliers. Coefficients and t-statistics are reported from regression with robust standard errors. VIF tests show no problems related to collinearity.

<sup>1</sup>Audit change dummy variables equal 1 if change type is true.

<sup>2</sup>Prior audit opinion dummy variable equals 0 if unmodified and 1 if modified opinion.

<sup>3</sup>Audit interaction term is calculated by multiplying the prior audit opinion variable by the audit change type variable.
### Appendix A1 – Variables Used From SNF Database

<table>
<thead>
<tr>
<th>Name of Variable</th>
<th>SNF database variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounts receivable</td>
<td>(fordr)</td>
</tr>
<tr>
<td>Inventories</td>
<td>(varer)</td>
</tr>
<tr>
<td>Current assets</td>
<td>(oml)</td>
</tr>
<tr>
<td>Fixed assets (PPE)</td>
<td>(vardrmdl)</td>
</tr>
<tr>
<td>Accounts payable</td>
<td>(levgj)</td>
</tr>
<tr>
<td>Income tax payable</td>
<td>(betsk)</td>
</tr>
<tr>
<td>Current liabilities</td>
<td>(kgjeld)</td>
</tr>
<tr>
<td>Total Assets</td>
<td>(sumeiend)</td>
</tr>
<tr>
<td>Revenue</td>
<td>(totinn)</td>
</tr>
<tr>
<td>Working Capital (Curr Ass. – Curr Lia.)</td>
<td>(oml – kgjeld)</td>
</tr>
<tr>
<td>EBIT or (EBITDA - DA)</td>
<td>(ebitda - avskr)</td>
</tr>
<tr>
<td>Book value of equity</td>
<td>(ak)</td>
</tr>
<tr>
<td>Total liabilities</td>
<td>(gjeld)</td>
</tr>
<tr>
<td>Total revenues (REV)</td>
<td>(totinn)</td>
</tr>
<tr>
<td>Sales (sales revenues)</td>
<td>(salgsinn)</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>(opptjek)</td>
</tr>
<tr>
<td>Audit opinion</td>
<td>(revanm)</td>
</tr>
<tr>
<td>Auditor fee</td>
<td>(revhon)</td>
</tr>
<tr>
<td>Auditor change</td>
<td>(rev_skift)</td>
</tr>
<tr>
<td>Auditor organization number</td>
<td>(revorgnr)</td>
</tr>
<tr>
<td>Auditor name</td>
<td>(revnavn)</td>
</tr>
<tr>
<td>Firm status – Active/Inactive</td>
<td>(aktiv)</td>
</tr>
</tbody>
</table>