Radboud Universiteit Nijmegen

Audit firm rotation and audit firm tenure, improvement or deterioration of the financial reporting quality for Dutch listed firms?

Khang Duc Tran
s3025136

Abstract

The effects of audit firm rotation and audit firm tenure on financial reporting quality is analysed by using data of Dutch public firms listed on the AEX, AMX or ASCX from 2002 to 2015. Two measures of financial reporting quality are applied: Accrual based earnings management and real earnings management. Results suggest that audit firm rotation does not have an immediate effect on financial reporting quality but short audit firm tenure (three years or less) does have a positive effect on financial reporting quality relatively to medium audit firm tenure (between four and eight years) which suggests audit firm rotation eventually leads to a higher financial reporting quality. Firms with audit firm rotation do not show more use of earnings management and there is no evidence that a longer audit firm tenure from 9 years or longer affects the financial reporting quality. However, changing the cut off to 10 years does show an indication of increased real earnings management. This thesis supports the argument for mandatory audit firm rotation.

Table of Contents

Radboud Universiteit Nijmegen

Preface

This thesis is completed as part of the requirements for obtaining a Master's degree of the Accounting and Control track in Economics.

Writing this thesis was a long journey with ups and downs but also one with good memories. With the support of my family, friends and girlfriend, I managed to complete the thesis and learn a lot during the process.

I would like to take a moment to thank several people who helped me in the process of writing this Master thesis and show my gratitude.

First of all, I would like to thank Siraj Zubair for his guidance as my thesis supervisor, for providing feedback and encouragements during the whole thesis process.

Also, I would like to thank Thijs Funken, my supervisor at PwC, for providing me feedback and guidance at PwC during my internship.

And lastly, I would to thank my fellow students at the university and my new colleagues at PwC for giving me feedback and helping me with useful comments and opinions. But also, for their company and fellowship that made the time fly at the office.

With kind regards,

Khang Tran

S3025136

1.   Introduction

Since January 1st 2016, the implementation of the mandatory audit firm rotation law took place in The Netherlands to increase the independency of external auditors (NBA, 2016). With the implementation of this rule, public interest entities (PIEs) are obligated to switch audit firms after ten years. After ten years of auditing the same entity, the audit firm must have a cooling down period of 4 years in which it cannot audit the same entity. The Dutch government considered a tenure of eight years before a mandatory audit firm rotation with a two year cooling down period but decided to follow the European regulations regarding the mandatory firm rotation (NBA, 2016).

The Enron fraud case in The US early 2000 is a well-known example that assessed the governance, incentive and independency problems regarding public entities and external audit firms (Healy and Palepu, 2003). The Enron Fraud case increased the negative perception around audited financial reports which were to a lesser extent seen as reliable. Healy and Palepu (2003) suggested that within the audit firms, professionals should be encouraged to decline clients that do not meet certain criteria. According to Eilifsen et al. (2015), these criteria include determining and assess the communications level of the client with the previous audit firm, determining the independency between the audit firm and the client, determining whether the audit firm has sufficient specific knowledge of the industry to successfully complete the engagement and determining if client acceptance would conflict with regulations or ethical requirements. The issue of mandatory auditor rotation gained more attention because of different cases in which financial scandals by other firms outside the US occurred (Raiborn et al., 2006). An example is the case of Royal Ahold NV (Eilifsen et al., 2015). Royal Ahold NV is a one of largest food retailers in the world and in 2002, it became involved in an accounting scandal in which the financial results were falsely overstated (Eilifsen et al., 2015). These financial reporting failures and the global financial crisis increased a call for focus on the work of external auditors (Nagy, 2005; Ewelt-Knauer, 2013; Chen et al., 2008). Capital markets are depending on auditing for its functioning (Healy and Palepu, 2003). Especially the independency of audit firms was under scrutiny. The independency of an audit firm is associated with the enhancing

of financial reporting quality. This is reflected in the likelihood of detecting material misstatements and the audit firm's behavior following the detection of misstatements (Johnson et al., 2002). This means that a higher independency of audit firms is more likely to increase the financial reporting quality. Several other countries have also implemented the mandatory audit firm rotation rule to increase the independency of audit firms. An example is Italy where mandatory audit firm rotation is implemented since 1975. Italy is one of the first and one of the few countries that implemented this firm rotation law (Corbella et al., 2015). At first in 1975, an audit firm in Italy could have a tenure of 3 three years with a possible renewing of the contract for two additional three year periods. After this, there was a mandatory cooling-off period of five years (Corbella et al., 2015). Italy changed the legislation several times regarding mandatory audit firm rotation after 1975 and the last change was in 2010 which meant that companies could maintain the same audit firm for nine years. This tenure could not be renewed and there was a three years cooling-off period (Corbella et al., 2015). Other countries that applied the mandatory audit firm rotation law were Brazil (since 1999) and Singapore (since 2002). Beside these countries, there were also countries who adopted this law but revoked it due to high audit costs (Corbella et al., 2015). 'These countries include Austria, Canada, Greece, Spain, Slovakia and Turkey' (Corbella et al., 2015, p.50). Although the accounting standards across EU members is harmonized and rather similar within Europe, there are institutional differences across Europe (Burgstahler et al., 2004). Burgstahler et al. (2004) state that The UK can be viewed as an outsider economy while countries as Germany and Italy are viewed as insider economies. The difference between insider and outsider economies is their character of raising capital. In an outsider economy, firms raise their capital by public debt or equity markets while firms in an insider economy rely more on financial intermediaries and internal financing (Burgstahler et al., 2004). The Dutch and Scandinavian governance systems are characterized as examples of the Continental European system and are viewed as countries that are somewhere between and insider or outsider economy (Burgstahler et al., 2004; Hooghiemstra, 2012). For this thesis, public firms from The Netherlands will be used to investigate the effects of audit firm rotation and audit firm tenure on financial reporting quality. This country is chosen for the following reasons. First, The Netherlands has recently implemented the

mandatory audit firm rotation law. Second, The Dutch law for mandatory audit firm rotation is the same as European law that requires public firms tender for a new external audit contracts after 10 years and this increases the generalizability of the research. Using accrual based earnings management and real earnings management as proxies for financial reporting quality, this thesis suggests that short tenure is associated with an increase of financial reporting quality relatively to medium and long tenure. Audit firm rotation did not show any results of any direct effects on the financial reporting quality. However the association between short tenure and audit firm rotation indicates that the rotation will lead to increase of financial reporting quality once the audit firm is more familiar with the client.

1.1. *Research problem and research question*

Mandatory audit firm rotation has been an ongoing discussion. This regulation should increase the independency of external audit firms. This is necessary to increase the quality of financial reporting and rebuild a positive perception of audit firms for the actors in the capital markets. Although there are researches that assess the effects of audit firm rotation on audit quality, there is little about the effects on financial reporting quality. Related studies are for example, Johnson et al. (2002), who studied the relation between audit firm tenure and the quality of financial reports. However, their sample is from between 1986 and 1995 which does not include all the new regulations after the accounting scandals. Another example is the study of Nagy (2005), who investigated the relation of mandatory audit firm rotation with financial reporting quality. The audit firm rotation in their research was the consequence of the Enron fraud scandal that also brought accounting firm Arthur Andersen down. Their clients were forced to search for a new audit firm. Jackson et al. (2008) also investigated audit firm rotation, however they investigated the relation with audit quality and there is an explicit difference between audit quality and financial reporting quality. Biddle et al. (2009) define 'Financial reporting quality' as "the precision with which financial reporting conveys information about the firm's operations, in particular its expected cash flows that inform equity investors" (Biddle et al., 2009, p.113). A definition of 'audit quality' given by Jackson et al. (2008) is that audit quality is 'the

degree to which the risk of reporting a material error in the financial accounts is reduced' (Jackson et al. 2008, p.422). These previous related studies all used samples that were before the period of scandals and do not take both audit firm rotations and audit tenure together into account and only use discretionary accrual as their measure. The research problem leads to the following research question: *What are the effects of audit firm rotation and audit firm tenure on the financial reporting quality of Dutch listed firms?*

1.2. Scientific and practical relevance

Due to recent implementation of the mandatory audit firm rotation regulation in The Netherlands, little research is done about the effects of those new regulations. This thesis will contribute to the current literature by providing new insights on the effects of audit firm rotation and audit firm tenure on financial reporting quality. Also using the combination of audit firm switch and audit firm tenure alongside with both accrual and real earnings management is something which is a new contribution to the current literature. Most literature only consider discretionary accruals for these kind of studies. The results of this thesis can be useful for European and Dutch legislators who have implemented mandatory audit firm rotation or countries that are considering to implement it to improve financial reporting quality. The thesis will provide evidence whether audit firm rotation and audit firm tenure improves financial reporting quality as it makes clear whether audit firm rotation and audit firm tenure will have the desired effect. The findings of this thesis are also relevant for capital providers, investors and other stakeholders because it contains insights into the financial reporting quality after applications of the mandatory audit firm regulations.

1.3. Thesis structure:

In the next section, the theoretical framework will be developed in which the importance of a financial report, mandatory audit firm rotation, audit firm tenure and financial reporting quality will be discussed. Subsequently, the methodological framework will be presented which contains the research

design, data collection, data analysis and the research quality indicators will also be described. After that, the results will be presented and the thesis ends with a conclusion and discussion.

2. *Literature and hypotheses*

2.1. *Introduction*

In this chapter, the theoretical framework will be developed regarding the effects of mandatory audit firm rotation on the financial reporting quality. The theoretical framework describes the importance of a financial report, the agency theory, mandatory audit firm rotation, audit firm tenure and financial reporting quality.

2.2. *Agency theory*

The agency theory is the core of the contractual view of a firm (Schleifer and Vishney, 1997). It displays the problem of separation of management and ownership. In the agency problem, the central role of information asymmetry between management and shareholders explains the need for external auditors. The principal-agent theory, in which the best interest of the principals and agents can conflict, displays the possibility that the agent (management) does not act in the best interest of the principals (shareholder) (Eisenhardt, 1989). The information asymmetry becomes problematic when managers use this asymmetry to their own advantage and take actions that are at the expense of the shareholders (Ndfor et al., 2013). For example, Managers do this to ensure their compensation (Imhoff, 2003). As mentioned in the introduction, Enron is the example that displays this problem. Management of Enron were rewarded with stock option which aligned their interest with the shareholders but it also created incentives for managers to think in short-term which made the company fail over the long-term (Healy and Palepu,2003). Financial reports of companies are means for management to provide the users of those reports the right information of the company (Healy and Wahlen, 1999). Because of the conflict in interest between managers and shareholders, it is necessary

that financial reports are independently audited by an external auditor. Audits should provide assurance on the financial reports that companies produce. There is an important role for accounting and auditing in the principal –agent relationship (Eilifsen et al., 2015). Healy and Palepu (2003) suggest that auditing is critical to the functioning of the capital markets. From the shareholder perspective, it is important that management of firms are being held accountable because evidence suggests that managers would rather protect their own interests rather than to protect the interest of shareholders (Schleifer and Vishny, 1997). Verification of the financial reports by the auditor results in credibility and reduction of information risk. Information risk is the risk that reported information by a company's management is misleading or false (Eilifsen et al., 2015). However, financial scandals and financial reporting failures have led to the questioning of the effectiveness of audits and the independency of external auditors. Mandatory audit firm rotation should contribute in recovering the perception of auditors and the usefulness of financial reports.

2.3.   *Auditor Independence*

In 1977, the International federation of Accountants (IFAC) was founded to serve the public interest by developing high quality standards (Eilifsen et al., 2015). One of the goals of IFAC is to promote high quality international professional standards. An important development is the International Ethics Standards board for Accountants (IESBA). This board developed The IESBA Code of Ethics for professional accountants. This code consists of three parts, this paragraph will elaborate further on the first part as it contains the fundamental principles of the professional ethics. Part of 2 and 3 of the code contain guidance on the codes and are not relevant for this study. Eilifsen et al. (2015) listed the five fundamental principles all professional accountant are required to comply with. These are *integrity, objectivity, professional competence and due care, confidentiality and professional behavior*. In short, integrity means that a professional accountant is expected to be straightforward and honest in all professional and business relationships. Objectivity means that the accountant will not be biased, have conflict of interest or be under influence of others to override professional or business judgements. Professional competence and due care requires the professional accountant to maintain

professional knowledge and skills at the required level to ensure that the services delivered are at sufficient level. Confidentiality requires the professional accountant to act respectfully with information acquired from professional and business relationships and to not disclose any information without proper and specific authority. Professional behavior requires the professional accountant to comply with relevant laws and regulation and avoid actions that would damage the reputation of the profession (Eilifsen et al., 2015).

Beside the principles, there are also threats which are circumstances that can affect the accountant's ability to be consistent with the fundamental principles (Eilifsen et al., 2015). There are several categories of threats: The *self-interest threat* is that financial or other interests can negatively influence the professional judgement or behavior. The *self-review threat* is the risk that evaluation of previous work is not done properly because it was done by the auditor themselves. Another threat is the *advocacy threat* which relates to the objectivity of a professional accountant due to promoting a client or employer's position. The *familiarity threat* can occur when the relationship with a client or employer is long or close. The category of threats is the *intimidation threat* which prevents the accountant from acting objectively because of inappropriate pressures from the client or employer (Eilifsen et al., 2015). The next paragraphs will elaborate how these principles and threats apply or relate to audit firm rotation and audit firm tenure.

2.4.   *Mandatory audit firm rotation*

Mandatory audit firm rotation is requiring companies to rotate their independent audit firm periodically (Jackson et al., 2008). There are several advantages and disadvantages to this requirement. Audit firm rotation is believed to prevent auditors from becoming too aligned with managers which can influence their independence (Jackson et al. 2008).

Nagy (2005) suggests that proponents of mandatory audit firm rotation argue that a new auditor would have more skepticism and a new perspective that might have been missing because of a long-term auditor-client relationship. Jackson et al. (2008) suggested that mandatory audit firm

rotation can bring more objectivity as the audit firm is not familiar with the new client. It also reduces the familiarity threat in which the audit firm is too long engaged with the client. This is supported by Daugherty et al. (2013), who suggested that mandatory partner rotation or audit firm rotation creates the possibility to have a new look at the client, its risk and engagement issues. Daugherty et al. (2013) developed a model of the direct and indirect effects of mandatory audit firm and partner rotation on audit quality that expresses a direct and positive effect on audit quality and the independency of the auditor but it also expresses negative effects concerning the client specific knowledge. Proponents of audit firm rotation suggest that the rotation helps restoring the confidence in the regulatory system (Jackson et al., 2008). Jackson et al. (2008) also emphasize that the rotation could stimulate competition between auditors which leads to differentiation of services and improvement of financial reporting quality.

Another positive effect of mandatory audit firm rotation is that it can prevent low-balling practice of audit firms (Imhoff, 2003). Low-balling practice can occur when audit firms bid below the total auditing costs even if there are higher start-up costs at the beginning of an audit engagement with a new client (Chan, 1999). The way I interpreted this, is that audit firm now have a limited time to earn back the auditing costs which means that low-balling should decrease. Also knowing that other firms have to rotate, they have less concerns about keeping the client for a longer period than the maximum tenure.

Mandatory audit firm rotation increases oversight because it should reduce auditor's tendency to keep things from written work (Imhoff, 2003). It would become embarrassing and costly if another audit firm discovers certain weaknesses that have been overlooked by the previous audit firm. Mandatory audit firm rotation can also positively affect professional judgment as it provides more incentives for audit firms to go against managers when there are disagreements. Auditors may be hesitant because of the fear of losing the complete engagement (Imhoff, 2003). This indicates the potential risk of self-interest in which the fear of losing the engagement and its financial advantages could reduce the independency of auditors. Mandatory audit firm rotation could prevent this.

Beside the advantages, there are several disadvantages concerning the adoption of mandatory audit firm rotation. Opponents argue that a change of auditor would mean a lack of familiarity with the client and its firm-specific risks which is likely to increase the chance of audit failure (Nagy, 2005; Meyers et al., 2003; Ewelt-Knauer, 2013). Another argument by Ewelt-Knauer (2013) is that mandatory audit firm rotation can lead to higher market concentration because the switch of audit firms tend to be around the Big 4 auditors which means that small audit firms will suffer from mandatory audit firm rotation. One of the concerns of the Big 4 firms is also that it restricts the choices of companies which means that companies are forced to select audit firms that might not have the equivalent industry expertise as their previous or current audit firm. (Ewelt-Knauer, 2013). Another argument against mandatory audit firm rotation is that it could lead to loss of client knowledge when the auditor has to mandatorily resign (Jackson et al., 2008). In the first years of the auditor-client relationship, it is more likely that audit failures occur (Jackson et al., 2008). This means that there is a high potential that the quality of the financial reports could be lower at the beginning of the auditor-client relationship.

Loss of client knowledge should not be an argument to reject mandatory audit firm rotation (Imhoff, 2003). Imhoff (2003) emphasizes that loss of client knowledge could result in higher costs of the audit fees because it would require an increase of audit work and quality of auditors hired to perform the audit. The costs of the audit would however be addressed to the shareholders and this should not become a problem as the investors would pay to confirm that the financial reports are of high quality and actually audited independently.

An important issue raised by Jackson et al. (2008) is that firms can switch audit firms because managers dislike or disagree with the qualified reports from the audit firm. A switch could be used to avoid a qualified report if a new auditor is less likely to give a qualified report. This suggests that firms in financial distress have more incentives to change auditors than healthy clients.

Furthermore, first year audits costs relatively twice much time as normal. If all public interest entities are forced to switch audit firms, it will create loads of extra work while the resources or available accountants are limited. This creates potentially understaffed audit teams and increases the

risk for loss of audit quality and thus financial reporting quality.

In summary, although there are several arguments that raise the negative effects of audit firm rotation, it is still expected to have a positive effect on auditor independence which should also positively affect the financial reporting quality. The advantages and disadvantages of mandatory firm rotation are tabulated in table 1 in the Appendix.

The first hypothesis addresses the audit firm rotation variable in relation with the financial reporting quality of a company. The following hypothesis displays a positive expectation of audit firm rotation on financial reporting quality of a company because I expect that audit firm rotation should increase the independency of audit firms which in turn should lead to higher financial reporting quality.

H1a Change in Audit firm has a significant negative relation with the financial reporting quality of a company
H1b Change in Audit firm has a significant positive related affects the financial reporting quality of a company.

2.5. *Audit firm tenure*

Audit firm tenure is the length that an audit firm is engaged to a firm for performing audits (Eilifsen et al., 2015; Johnson et al., 2002). There are several studies that discussed the effects of audit firm tenures. Meyer et al. (2003) discussed the relation between earnings quality and audit firm tenure. After controlling for 'firm age, size, industry growth, cash flows, auditor type, industry and year', Meyers et al. (2003) found that both discretionary and current accruals decrease when longer audit firm tenure exists for a sample consisting of US firms between 1988 and 2000. These accruals were estimated with the cross-sectional Jones model (1991). Meyers et al. (2003) suggested that earnings management is likely to decrease with longer audit firm tenure as their results show less income-increasing and less income-decreasing accruals. They show no decline of earnings quality with longer audit firm tenure (Meyers et al., 2003). Chen et al. (2008) mentioned that regulators have concerns regarding the audit firm tenure because auditors could become less skeptical on their client's

accounting because of high familiarity. However, Chen et al. (2008) did not find adverse effects on earnings quality with longer audit firm tenure which is consistent with the results by Meyers et al. (2003). Their sample consisted of Taiwanese data between 1990 and 2001. Although the accounting and auditing standards in Taiwan are similar to the US standards, Chen et al. (2008) mentioned that the legal environment is different and weaker regarding enforcement and legal liabilities. This means that the result may not be generalizable to other countries. An important issue raised by Chen et al. (2008) is that the additional costs regarding the audit firm rotation cannot be justified if the financial reporting quality does not decrease with longer audit firm tenure. Bruynseels and Cardinaels (2014) concluded in their study regarding social ties that firms whose audit committees have friendships with the CEO use earnings management more often. They also found that auditors are also influenced by friendship ties and are less likely to report internal control weaknesses or give going-concern opinions in their audits to firms that are in financial distress (Bruynseels and Cardinaels, 2014).

Johnson et al. (2002) make a distinction between short, medium and long audit-firm tenure. A short tenure is between two and three years, a medium tenure is four to eight years and a long tenure is nine years or longer (Johnson et al., 2002; Carcello and Nagy, 2004). Johnson et al. (2002) suggested that tenure of 9 years or longer did not have a negative effect on financial reporting quality. Carcello and Nagy (2004) found that financial reporting fraud is more likely to take place within the first three years of the auditor-client relationship. Their results support opponents of mandatory audit firm rotation who address the adverse effects on audit and financial reporting quality. Comparing these studies suggests that the financial reporting quality starts low and rises in the beginning of the audit firm tenure and reaches in its peak in the medium tenure period and slowly decreases again in the long tenure period. This theory leads to following hypotheses that displays the expectation that longer audit firm tenure results in lower financial reporting quality and that a short tenure results in higher financial reporting quality.

H2a Financial reporting quality issued by a company is higher when the audit firm tenure is longer than a medium tenure

H2b Financial reporting quality issued by a company is lower when the audit firm tenure is longer than a medium tenure

H3a Financial reporting quality issued by a company is lower when the audit firm tenure is shorter than a medium tenure

H2b Financial reporting quality issued by a company is higher when the audit firm tenure is shorter than a medium tenure

2.6.   Audit firm partner change and tenure

Auditor change can vary between firm or partner level (Chen et al., 2008). During an audit engagement, the audit team usually consist of associates, seniors, managers and partners in general (Eilifsen et al., 2015). The leading engagement partner is the key person who is responsible for reaching an agreement on the scope and services during the audit. The partner is also responsible for making decisions regarding auditing issues and the one with the authority to sign the audit report. When audits are performed for public interest entities (PIE), the key audit partner must be rotated after seven years or before that period. After these 7 years, there is a cooling off period of 2 years before the same person can be involved in the audit for the same firm (Eilifsen et al., 2015). The reason for the limited partner tenure is due to the familiarity threat that can affect the objectivity of the engagements (Eilifsen et al., 2015). The difference with audit firm rotation is that audit partner rotation, not all specific firm knowledge is lost because the rest of the team can remain in the audit (Eilifsen et al., 2015). Chen et al. (2008) found that discretionary accruals decrease significantly with audit firm tenure. Their results show arguments that are inconsistent with the arguments that audit partner rotation, or audit firm rotation would improve financial reporting quality. Chen et al. (2008) also stated that data on partner tenure are not always publicly available so this variable is difficult to measure. Chen et al. (2008) mentioned that in places where audit partner rotation is mandatory, there can be no case of long partner tenure which makes it impossible to investigate whether or not earnings/audit quality decreases with long partner tenure. Carey and Simnet (2006) examined audit

partner tenure for Australia for a dataset of 1995, a period before audit partner rotation became a requirement in Australia, and they found evidence of reduced audit quality with longer audit partner tenure. However, for this study, audit firm partner change and tenure is left out due to lack of consistent data which makes it impossible to measure this and beyond the scope of this study. However, it is worthwhile to mention the potential influence of audit firm partner change and tenure.

2.7.   *Financial Reporting Quality*

Financial reporting quality is defined as "the precision with which financial reporting conveys information about the firm's operations, in particular its expected cash flows that inform equity investors" (Biddle et al., 2009, p.113). There are several metrics for financial reporting quality. The three proxies that could be used for financial reporting quality are: earnings management, timely loss recognition and value relevance (Barth et al., 2008; Ahmed et al., 2013). Earnings management will be elaborated in the next section of this paragraph. Timely loss recognition is the timing of reported losses. Value relevance is reflected in the association between stock prices and earnings. This study will use earnings management as a variable that indicates financial reporting quality because it is mostly used as a metric for financial reporting quality. This makes it better to compare with other studies. Earnings management will measured as the accrual-based and real earnings management form because several prior studies have found the substitution effect from accrual-based earnings management to real earnings management after changes in regulation. Accrual based earnings management will be measured by the modified jones model (1991) that uses the discretionary accruals as indicator. Real earnings management will be measured by the abnormal levels of cash flows from operations, discretionary expenses and production costs following Cohen et al. (2008). This paragraph will elaborate both earnings management measures and explain how they will be used for this thesis.

2.7.1.   *Earnings management*
Earnings management will be used a variable that indicates financial reporting quality. There are several definitions for earnings management. Ronen and Yaari (2008) define earnings management as

follows: "Earnings management is a collection of the managerial decisions that results in not reporting the true short-term, value maximizing earnings as known to management. Earnings management can be beneficial (it signals long-term value), pernicious (it conceals short or long term value) and neutral (it reveals the short term true performance). The managed earnings result from taking production/investment actions before earnings are realized, or making accounting choices that affect the earnings numbers and their interpretation after the true earnings are realized." (Yaari and Ronen, 2008, p.27). An example of accrual based earnings management as mentioned by Ronen and Yaari (2008) are the judgement calls when standards require estimations, such as depreciation. Other examples are classification of items on the balance sheet, structuring transactions to reach particular outcomes, timing of recognizing revenues and expenses and controlling the transparency of the presentation (Ronen and Yaari, 2008, p.32)

Following Barth et al. (2008) I assume that firms that exhibit less earnings management have higher financial reporting quality. Barth et al. (2008) used the 'variance of the change in net income, the ratio of the variance of the change in net income to the variance of the change in cash flows, the correlation between accruals and cash flows, and the frequency of small positive net income.' as earnings management measurements (Barth et al., 2008, p.469). Because of the shift from accrual based earnings management to real earnings management, another measure of earnings management that should measure real earnings management is added. Zang (2007) studied the trade-off between accrual and real based earnings management (EM). She emphasized the importance of studying both types of earnings management because they can be used as substitutes. Zang (2007) used abnormal levels of production costs and abnormal level of discretionary expenditures as measures for real earnings management. The former refers to firms increasing earnings by reducing cost of goods sold by overproducing inventory and the latter refers to increasing earnings by cutting discretionary expenditures such as 'research and development' and 'advertising' (Zang, (2007). Cohen et al. (2007) also concluded a decline of accrual-based earnings management after the Sarbanes-Oxley (SOX) period and also found a shift from accrual-based earnings management to real earnings management. Both of these studies used the modified jones model to measure the accrual form of earnings

management. Dechow et al. (1995) tested several methods to measure accrual-based earnings management and concluded that the modified version of the jones model (1991) showed the most power in detecting earnings management. The modified part of the jones model lies in the use of the change in revenues that is adjusted for the change in receivables in the event period (Dechow et al., 1995). The reason behind this is that it is easier to manage earnings over the revenue of credit sales than on cash sales (Dechow et al., 1995).

Dechow et al. (2012) proposed a new and improved approach to measure accrual-based earnings management. This method improves the test power and specification. According to Dechow et al. (2012), this method recognizes that the accrual-based earnings management in one period must be reversed in another period. Dechow et al. (2012) state that earnings management studies using former techniques lack power and ability to isolate discretionary accruals. The problem with former methods is that firm size is an important correlating variable that has been excluded from earnings management tests (Dechow et al., 2012). A research might come to incorrect conclusions because a big firm tends to have lower nondiscretionary accruals due to lower growth expectations which means that lower accruals does not necessarily comes from earnings management (Dechow et al., 2012). These problems are also known as Type I errors which is the rejection of a true null hypothesis and Type II errors which is failing to reject a false null hypothesis (Gerakos, 2012). To mitigate these problems, Dechow et al. (2012) suggested to add reversals to see if the accruals are consistent because firm size is a 'persistent economic characteristic' (Dechow et al., 2012, p.277). Even though the use of the old method can be seen as a limitation, it is still valuable as it can be compared to related studies. This study will use the modified Jones (1991) model and will follow Zang (2007) and Cohen (2008) to measure real earnings management.

There is a distinction between accrual based and real earnings management (Zang, 2012). As earlier mentioned, regulations such as the SOX only decrease the amount of accrual based earnings management but cause a shift to real earnings management at the same time. Real earnings management can be defined as "manipulation of real activities that are different from normal operational practices, which are motivated by managers' desire to mislead at least some stakeholders

into believing certain financial goals have been met in the normal course of operations" (Roychowdhury, 2006, p.337). Graham et al. (2005) and Cohen et al. (2008) mentioned that fraud cases and its consequences in the past have caused managers to be hesitant to use accounting methods for earnings management. Cohen et al. (2008) lay out three possible methods that managers apply for real earnings management. These three methods by Cohen et al. (2008, p.765) are: "1. Acceleration of timing of sales through increased price discounts (This increases revenue on a short time period). 2. Reporting of lower cost of goods sold through increased production. 3. Decreases in discretionary expenses such as advertising expense, research and development."

3. *Methodological Framework*

3.1. *Research Design*

This research will measure components of mandatory audit firm rotation as the independent variable. This contains audit firm tenure and audit firm change. Using audit tenure, as an element for mandatory audit firm rotation is motivated by the assumption that mandatory audit firm rotation concerns the prevention that longer auditor tenure reduces earnings quality (Meyers et al., 2003). The use of audit firm change should display whether a change of audit firm has a positive effect on financial reporting quality. The combination of audit firm tenure and audit firm change and have not been used much (Gates, 2007). In summary, the elements related to mandatory audit firm rotation and audit firm tenure will be used as independent variables. Accrual based earnings management and real earnings management will be used as dependent variables to measure financial reporting quality.

To test the hypothesis concerning the association between audit firm rotation, audit firm tenure and financial reporting quality, this study will test both accrual based and real earnings management. Accrual based earnings management can be measured by calculating the discretionary accruals following Cohen et al. (2008) and Johnson et al. (2002).

Discretionary accruals can be calculated by decreasing the total accruals by the normal accruals part (Cohen et al., 2008). This will lead to the following model:

$$DA_{it} = \frac{TA_{it}}{Assets_{it-1}} - NA_{it}$$

To calculate the total accruals part of this model, the model of Jones (1991) provided the following regression model:

$$\frac{TA_{it}}{Assets_{i,t-1}} = k_{1t} \frac{1}{Assets_{i,t-1}} + k_2 \frac{\Delta REV_{it}}{Assets_{i,t-1}} + k_3 \frac{PPE_{it}}{Assets_{i,t-1}} + \epsilon_{it}$$

In the following regression model, the normal accruals part to calculate discretionary accruals of each firm can be calculated:

$$NA_{it} = \hat{k}_{1t} \frac{1}{Assets_{i,t-1}} + \hat{k}_2 \frac{(\Delta REV_{it} - \Delta AR_{it})}{Assets_{i,t-1}} + \hat{k}_3 \frac{PPE_{it}}{Assets_{i,t-1}} + \epsilon_{it}$$

Beside accrual-based earnings management, this study will also test for real earnings management. Following Cohen et al. (2008), this study will use cash flow from operations (R_CFO), discretionary expenses (R_DISX) and productions costs (R_PROD) to calculate real earnings management (REM). Cash flow from operations can be calculated according the following regression models of which the residuals should be estimated:

$$\frac{CFO_{it}}{Assets_{i,t-1}} = k_{1t} \frac{1}{Assets_{i,t-1}} + k_2 \frac{Sales_{it}}{Assets_{i,t-1}} + k_3 \frac{\Delta Sales_{it}}{Assets_{i,t-1}} + \epsilon_{it}$$

Discretionary expenses can be calculated by the following function:

$$\frac{DiscExp_{it}}{Assets_{i,t-1}} = k_{1t} \frac{1}{Assets_{i,t-1}} + k_2 \frac{Sales_{i,t-1}}{Assets_{i,t-1}} + \epsilon_{it}$$

Production costs can be calculated by the sum of the following functions: These functions reflect the accumulation of cost of goods sold and the changes in inventory (Cohen et al., 2008).

$$\frac{COGS_{it}}{Assets_{it-1}} = k_{1t}\frac{1}{Assets_{i,t-1}} + k_2\frac{Sales_{it}}{Assets_{i,t-1}} + \epsilon_{it}$$

$$\frac{\Delta INV_{it}}{Assets_{i,t-1}} = k_{1t}\frac{1}{Assets_{i,t-1}} + k_2\frac{\Delta Sales_{it}}{Assets_{i,t-1}} + k_3\frac{\Delta Sales_{i,t-1}}{Assets_{i,t-1}} + \epsilon_{it}$$

Cohen et al. (2008) stated that firms that manage earnings through real activities are likely to have one of these variables. This means that there is abnormal low cash flow from operations, abnormal low discretionary expenses and abnormal high production costs. Discretionary expenses (DiscEXP) from the first REM function can be calculated by the sum of advertising expenses (Advert), research and development(R&D) expenses and selling, general and administrative (SG&A) expenses (Cohen et al., 2008).

I will use the following multiple regression model to test the relationship between audit firm rotation, audit firm tenure and accrual based earnings management:

$$DA_{it} = \alpha + \beta_1 Rotation(0,1) + \beta_2 Longtenure(0,1) + \beta_3 Shorttenure(0,1) + \beta_4 Size + \beta_5 Leverage + \beta_6 CFO\_TA + \beta_7 growth + \beta_8 Auditor\ type(0,1) + \beta_9 Industry + \varepsilon$$

The following multivariate regression model will test the relationship between audit firm rotation, audit firm tenure and real earnings management.

$$Total_{REM} = \alpha + \beta_1 Rotation(0,1) + \beta_2 Longtenure(0,1) + \beta_3 Shorttenure(0,1) + \beta_4 Size + \beta_5 Leverage + \beta_6 CFO\_TA + \beta_7 growth + \beta_8 Auditor\ type(0,1) + \beta_9 Industry + \varepsilon$$

The audit firm rotation variable will be indicated by a dummy variable indicating 1 if there has been a case of audit firm rotation and 0 if there was no audit firm rotation in a certain year. Audit firm tenure

will be also indicated by dummy variables. Following Johnson et al. (2002), I will indicate short tenure by 1 if there has been a tenure of 3 years or less. The variable will indicate 0 if the tenure was medium or long. The long tenure variable gets a 1 if the tenure has been 9 years or longer and 0 if it was a medium or short tenure. By creating these dummy variables, it is not needed to separately add the medium variable as it is possible to derive it from the short and long tenures (Johnson et al., 2002). All variable definitions are tabulated in table 2 in the appendix.

3.2. Data Collection

The sample consists of 75 Dutch public firms listed on the AEX, AMX and ASCX. This study examines the audit firm tenure and audit firm switches between 2002 and 2015. The period starting from 2002 has been chosen because of the changes in regulation caused by the several accounting fraud cases. Financial reports of 2015 are taken as an ending period because this allows the thesis to take mandatory switches into account that result from the implementation of mandatory audit firm rotation law since January 1st 2016. The sample size for this study is 709 firm-year observations as shown in table 3. The sample size is justified by the rule of thumb by Field (2009) which indicates that a minimum of N= 50+ 8k where k is the amount of predictors. This study has 9 predictors so the minimum N becomes 122 and the N in this thesis is at least 599. To avoid institutional effects, I pick the period from 2002 which is after the many changes in regulation due to several fraud cases. To measure accrual-based earnings management and real earnings management, the study requires that each firm-year observation has available data that is needed to calculate discretionary accruals and real earnings management proxies (Cohen et al., 2008; Zang, 2007).

3.2.1. Control variables

Following prior empirical studies, several independent control variables are added to the current model. Firm SIZE effects will be added because prior studies found that small firms report a relatively higher level of discretionary accruals compared to larger firms because larger firms receiver greater attention from public than smaller firms (Dechow and Dichev, 2002; Johnson et al., 2002; Meyers et al., Dechow et al., 2012; Krauss et al., 2015).Following the prior studies, size (SIZE) will be defined as the natural logarithm of the book value of totals assets at year end. Following Krauss et al. (2015). This study also controls for debt and financial distress by using the variable leverage (LEV). It is expected that firms with high debt ratios have greater incentives to adjust earnings to meet certain debt agreements (Johnson et al., 2002; Krauss et al., 2015). Another variable that is included is cash flow (CFO_AVGTA), because it is assumed that accruals and cash flows are negatively correlated according to Meyers et al. (2003). The variable GROWTH will also be added because prior studies found that it is associated with earnings management and this will be expressed as the growth rate of net sales over the previous year following Chen et al. (2008). Another control variable is the Auditor type (AUD_TYPE). This control is added because prior research found that larger audit firms are more conservative and this affects the accruals and tends to prevent excessive accruals. The last control variable that will be included in this model is industry (INDUSTRY). Prior studies found that industry influences the type of accruals and it also influences the audit (Meyers et al., 2003; Johnson et al., 2002). This control is based on the two-digit SIC code. Another possible control variable is age of incorporation (AGE) that is expected to negatively relate to discretionary accruals because firms that exist for a longer time are expected to have more improved business processes and financial reporting systems which means the firm life cycle can also influence accruals (Johnson et al., 2002; Meyers et al., 2003; Krauss et al., 2015). This variable will not be included because of the limited observations for this thesis.

3.3. Data Analysis and research quality indicators

This thesis will use a multiple regression analysis to test the association between audit firm rotation, audit firm tenure and financial reporting quality. Multiple regression analysis requires testing several assumptions to test the fit of the model. This thesis attempts to fulfill all the assumptions of a multiple regression analysis. This includes testing for multicollinearity, heteroscedacity and autocorrelation. To ensure the quality of this research, the literature and theory used in this research are from top journals. Also, the use of data that will be used are from verified databases.

4. Empirical findings

In this section of the thesis, the results of the statistical tests conducted for this thesis will be discussed. First the descriptive statistics will be elaborated. Subsequently the results of the correlation matrix and checks for multicollinearity will be presented. Finally the results of the multiple regression analysis on audit firm rotation, audit firm tenure, accrual based earnings management, real earnings management, the control variables and robust checks will be discussed.

4.1. Descriptive statistics

Table 4 shows the sample composition from the period 2002-2015. In the auditors sample composition, there 924 audit firm observations as shown in table 5. In this composition, PwC was represented by 253 firm years, KPMG with 249 firm years, EY with 179 firm years, Deloitte with 195 firm years and firms other than the big four audit firms were represented with 48 firm years. I observe that in this sample that there were 45 rotations out of the 709 total firm year observations that have been used as shown in table 6. Table 7 shows the observations regarding the tenure. There were 231 firm year observations that indicated short tenure out of the 709 observations. Audit firms with long tenure were represented with 218 firm year observations out of the 709. These numbers are relatively equal which makes it better to compare. Another observation concerns the measures of earnings management. This thesis used discretionary accruals (DACC) as proxy for accrual based earnings

management and real earnings management has been calculated by the sum of the residuals of discretionary expenses (REM_DiscEXP), cash flow from operations(REM_CFO), production costs (REM_Prodcost). Table 8 shows the descriptive statistics of the earnings management proxies, these include the individual proxies of real earnings management as I will use them for the robustness checks. The minimum of DACC is -0,568 and maximum is 0,745.These numbers are relatively low compared to the figures of the paper of Chen et al. (2008). Their minimum discretionary accruals is -33,82 and their maximum is 48,35. This relatively big difference can be explained by a couple of arguments. First of all, Chen et al. (2008) used a sample period of 1990-2001. This period was pre-SOX and Cohen et al. (2008) found an increasing use of accrual-based earnings management from 1987 until the passage of SOX in 2002. Another reason for the big difference is the shift from accrual based earnings management to real earnings management. Prior earnings management literature suggested a substitution effect indicating that firms switched from using accrual based earnings management to real earnings management (Cohen et al., 2008; Zang, 2012). This substitution is also reflected in this thesis. The minimum of total real earnings management (Total_REM) is -1,480 and the maximum is 5,628. It indicates that there is more use of real earnings management. Breaking the total real earnings management into their individual proxies, I observe the highest level of real earnings management in the production cost proxy with a minimum of -1,493 and maximum of 5,669. This indicates that firms are more likely to use real activities concerning the cost of goods sold and inventories as their way of managing their earnings.

4.1.1. *Univariate analysis*

All the variables included in the regression model have been displayed in the correlation matrix and the results is shown in table 9. According to the Pearson correlation, it is acceptable when independent variables correlate below the value of 0.8 (Field, 2009). It becomes problematic when the unique contribution of the independent variables cannot be determined (Field, 2009). Examining the correlation matrix, I observe an indication of correlation between short_tenure and Rotation (0,1) with a correlation value of 0,37. However, this is an expected correlation because the end of a tenure results

in a rotation unless the firm goes bankrupt. Prior literature suggested audit firms are more skeptic at the beginning of the engagement because of a fresh look into the company (Nagy, 2005; Daugherty, 2013.This is reflected in the negative (and significant) correlation between short_tenure and REM_DiscEXP. It indicates that earnings management is lower during the short tenure. It is also reflected in the significant positive correlation between Long_tenure and REM_DiscEXP which indicates that a longer tenure leads to more earnings management. Other observations worth mentioning are the significant correlations between size and long tenure and size and short tenure. There is a negative correlation between size and short tenure which indicates that smaller firms have relatively shorter tenures with audit firms. The interpretation is this way because the variable short_tenure is a binary variable of 0 and 1 indicating 1 if there is short tenure. On the other hand Long_tenure has a positive correlation with size. Between the independent variables, the highest correlation was between short_tenure and rotation with 0.37. This correlation matrix suggests that multicollinearity is not a problem in this thesis. I confirm this observation with the variance inflation factor (VIF) test shown in table 10. The rule of thumb is that a VIF above 10 indicates multicollinearity (Field, 2009). All the VIF value for the independent variables are just over 1.

4.2. *Multivariate analysis*

The results of the multivariate analysis are shown in table 11. A regression was conducted for each dependent variable. For real earnings management, each separate proxy has been regressed separately to check for robustness. These will be individually discussed in the next section. For DACC, there have been 655 observations with a R^2 of 0, 0046. Total_REM has 599 observations and a R^2 of 0.3359. REM_Prodcost has 601 observations and a R^2 of 0.3618. REM_CFO has 655 observations and a R^2 of 0.1962. REM_DiscEXP has 651 observations with a R^2 of 0.087. The R^2 of each model indicates the percentage in which the total variation of the dependent variable is explained by the regression model. The difference in observations for each model is explained by the difference in calculations for each dependent variable. This also means that base-years are left out in the model. To keep a clear overview, I will discuss each model separately and then discuss them altogether. The

regression of DACC shows insignificant p-values for rotation (0,897), Long_tenure(0,605) and short_tenure (0,903). These results suggest that these independent variables have no effect on DACC. This is inconsistent with the results of Johnson et al. (2002) and Carcello and Nagy (2004) who found that firms in the short tenure category show more discretionary accruals than in the medium or long category. It is also consistent with the long tenure results of Johnson et al (2002), the Long_tenure variable is not statistically significant which means that the test does not provide evidence that the discretionary accruals increases for long tenure. However, their data covered the period between 1986 and 1995 which may explain the difference in results.

Furthermore, the regression of Total_REM as the dependent variable shows that short_tenure has a negative coefficient of -0,3457 which is significant (p=0,01). This suggests that a short tenure results in a decrease of total real earnings management. It is arguable that this is because audit firm are more skeptic in the beginning period of the engagement and that there is higher level of independency. Furthermore, I observe that rotation is not statistically significant to Total_REM with a coefficient of 0,0163 and p=0,442. This suggests that an audit firm rotation does not have a direct effect on total real earnings management. However, as indicated earlier, short tenure does suggest a decrease in total real earnings management. It is arguable that in the first year, a lack of familiarity with the client and its firm-specific risks is likely to explain why rotation does not immediately lead to reduction of earnings managing (Nagy, 2005; Meyers et al. 2003; Ewelt-Knauer, 2013). On the other hand, the significance shown by short tenure indicates that this is recovered within a few years and that earnings management does decrease after rotation. The insignificance is partially explained by a low amount of 45 observations for rotation. Long_tenure is not statistically significant with total real earnings management. This means that longer tenure does not increase earnings management and a longer tenure will not negatively affect financial reporting quality. The control variables all show significance for total real earnings management. Size with a coefficient of -0,2103 and p=0,000 confirms that bigger firms are less likely to use EM because they receiver bigger attention Dechow and Dichev, 2002; Johnson et al., 2002; Meyers et al.,2003; Dechow et al., 2012; Krauss et al., 2015. Cash flow seems to have a negative correlation with discretionary accruals, however, it has a

significant positive correlation with real earnings management (b= 1,240 and p=0,000). Growth has a positive correlation with real earnings management (b=1,135, p=0,000). This means growing firms are more likely to use real earnings management. Auditor type indicates a negative significant correlation with a coefficient of -1,436 and p=0,000. This means that firms with a big four audit firm are less likely to use earnings management because big audit firm tends to be more conservative (Meyers et al., 2003; Johnson et al., 2002).

4.2.1. *Robustness check*

Cohen et al. (2008) pointed out that the sum of the three real earnings management proxies might weaken results so I decided to report the results of each single real earnings management proxy to test for robustness. When the real earnings management proxies are regressed individually, the same results occur. These results are shown in table 11 next to the results of Total_REM. Short_tenure, with a coefficient of -0,1973, is negatively significant (p=0,002) with REM_Prodcost. This is also the case for REM_DiscEXP with a coefficient of -0,1058 and p=0,000. Long_tenure appears to be statistically insignificant for discretionary accruals and total real earnings management. However, Long_tenure does show significance with REM_DiscEXP with a coefficient of 0,0461 and p=0,031. This suggest a slight increase of one of the real earnings management proxies (discretionary expenses) when there is long audit firm tenure. Rotation is insignificant for all the dependent variables, which suggest that it has no effect on the level of earnings management, however, as earlier stated, the significance of short tenure suggests that although there is no immediate effect, within the short tenure period it does decrease earnings management which means that the financial reporting quality increases eventually after the rotation.

Following Johnson et al. (2002), I also run additional tests to see if the results still hold when the cutoff is changed for the short and long tenures. I changed the cutoff for short tenure to 2 years and long tenure to 8 years and another cutoff for short tenure to 4 years and long tenure to 10 years. The results of the robust checks are shown in table 12 and 13 in de appendix. Just like Johnson et al.

(2002) I observe that a cutoff to 2 years does not show significance anymore for short tenure relatively to the medium and long tenure group. This lack of significance could be partially explained by the sample size decrease in the short tenure group because of a new cutoff date (Johnson et al., 2002). The results for the long audit tenure remain the same. The second cutoff of 4 and 10 years resulted in the same results for rotation and short tenure. However, I find a contrasting result in the long tenure variable Long_tenure is positively significant with DACC with a coefficient of 0,018 and p=0,05. This suggest that a longer tenure (10 years or longer) results in an increase of accrual based earnings management which indicates a familiarity threat.

4.3. *Hypotheses discussion*

This section discusses whether the hypotheses are supported by the empirical findings to answer the following research question**:** *What are the effects of audit firm rotation and audit firm tenure on the financial reporting quality of Dutch listed firms?*

H1a Change in Audit firm has a significant negative relation with the financial reporting quality of a company.
The results fail to reject this null hypothesis.

H1b Change in Audit firm has a significant positive related affects the financial reporting quality of a company.

H2a Financial reporting quality issued by a company is higher when the audit firm tenure is longer than a medium tenure.
The results fail to reject this null hypothesis.

H2b Financial reporting quality issued by a company is lower when the audit firm tenure is longer than a medium tenure.

H3a Financial reporting quality issued by a company is lower when the audit firm tenure is shorter than a medium tenure.

The results reject this null hypothesis and accept the alternative hypothesis.

H3b Financial reporting quality issued by a company is higher when the audit firm tenure is shorter than a medium tenure

H2d is accepted because the result support this hypothesis.

5. Conclusions

This thesis examined the effects of audit firm rotation and audit firm tenure on financial reporting quality by investigating the following research question: *What are the effects of audit firm rotation and audit firm tenure on the financial reporting quality of Dutch listed firms?* Using accrual based earnings management and real earnings management as proxies for financial reporting quality, this thesis suggests that there is a decrease in real earnings management in the short tenure period of an audit firm engagement. Although audit firm rotation did not show direct significance with real earnings management. It is arguable that the first year of the audit firm rotation does not lead to immediate decrease of earnings management because of lack of firm specific familiarity. However the decrease of earnings management in the short tenure period suggests that an audit firm rotation leads to a decrease of earnings management once the audit firm is more familiar. Long audit firm tenure from 9 years or up does not show any significance with the earnings management proxies. However, if the cutoff year is changed up to 10 years, the longer tenure suggest a significant association with increased discretionary accruals. This suggests that 9 years of tenure might refer to an optimal point of tenure. The importance of using both accrual based earnings management and real earnings management is emphasized in this thesis which is reflected in the results that show more use of real earnings management. The results of this thesis support the argument for mandatory audit firm rotation with a maximum tenure of 10 years in The Netherlands. Despite that the results in this thesis

reflect several arguments supporting mandatory audit firm rotation, normative conclusions should only be drawn carefully. This thesis adds a contribution to the discussion of mandatory audit firm rotation by arguing for mandatory audit firm rotation.

6. *Discussion and future recommendation*

I acknowledge that there are several limitations in this thesis and I will discuss these limitations. First of all, this thesis is limited to the single country of The Netherlands. Although it is limited to the single country, it is still generalizable with comparable countries within the European Union due to harmonization of accounting rules within Europe.

A second limitation of this thesis is that the circumstances for audit firm rotation and audit firm tenure is different than the circumstances during a mandatory audit firm rotation. This means that the effects of an audit firm rotation is not necessarily the same as for a mandatory audit firm rotation. This was also the case in the research by Johnson et al. (2002).

As earlier mentioned in the second chapter, Dechow et al. (2012) developed a newer method to detect accrual based earnings management. This newer method was not used in this thesis because the older model could be better used for comparisons with other studies. However, as Dechow et al. (2012) mentioned, the newer method could be better as it has a higher power and is less prone to type I and II errors. Future research could make use of this method to calculate the level of accrual based earnings management.

Another limitation of this thesis is the limited N-value or amount of firm-year observations. I explicitly chose to only use the publicly listed firms on the AEX, AMX and ASCX because they are the most active traded securities, however, the amount of firm year observations could have been larger if I also used other Dutch public firms outside these stock market indices. The small number of firm-year observations could partially explain why there were no significance found for the audit firm rotations and for accrual based earnings management. The relatively small amount of observations

could have influenced the results which is why I emphasized that conclusions are drawn carefully. Future research could extend the scope by including more firm year observations.

Another recommendation for future research is to test the effects of mandatory audit firm rotation. The goal of mandatory audit firm rotation is to increase the independency of audit firms. The increase of independency should then lead to the increase of financial reporting quality. Future research should show whether mandatory audit firm rotation increased the independency and the financial reporting quality. This can be done by comparing two periods, the period before mandatory audit firm rotation and the period after implementation of the mandatory rotation rule. There are opponents and proponents of mandatory audit firm rotation. Future research can point out which arguments fits best with the mandatory audit firm rotation.

In my opinion, audit firm rotation is something positive because it is a method in the direction of restoring faith in the accounting sector. Although the future should make clear whether the regulation will have its intended effects since it has been implemented recently, it still shows that the accounting business is actively making an effort to increase independency and restore the confidence from investors and other users of financial reporting information.

7.   *Summary*

This thesis examined the effect of audit firm rotation and audit firm tenure on financial reporting quality by investigating the following research question: *What are the effects of audit firm rotation and audit firm tenure on the financial reporting quality of Dutch listed firms?*
There are several arguments for and against audit firm rotation. The advantages are more skepticism, new perspectives, and more objectivity from the audit firms. It helps restoring confidence in the regulatory system, it prevents low-balling and increases oversight in the written work of audit firms. Disadvantages are a lack of familiarity which can result in audit failure. There is a higher market concentration among audit firms. There is a limited choice for companies picking audit firms. There is loss of client knowledge and lastly, there are higher audit costs and audits take more time which can

increase the risk of audit quality loss if audit teams are understaffed. The effects of audit firm rotation and audit firm tenure on financial reporting quality is analysed by using data of Dutch public firms listed on the AEX, AMX or ASCX from 2002 to 2015. Two measures of financial reporting quality are applied: Accrual based earnings management and real earnings management. Results suggest that audit firm rotation does not have an immediate effect on financial reporting quality but short audit firm tenure does have a positive effect on financial reporting quality relative to medium audit firm tenure which suggests audit firm rotation eventually leads to a higher financial reporting quality. Firms with audit firm rotation do not show more use of earnings management and there is no evidence that a longer audit firm tenure from 9 years or longer affects the financial reporting quality. However, changing the cut off to 10 years does show an indication of increased real earnings management. This thesis supports the argument for mandatory audit firm rotation.

8. *References*

Ahmed, A. S., Neel, M., & Wang, D. (2013, 04). Does Mandatory Adoption of IFRS Improve Accounting Quality? Preliminary Evidence. *Contemporary Accounting Research Contemp Account Res, 30*(4), 1344-1372. doi:10.1111/j.1911-3846.2012.01193.x

Barth, M. E., Landsman, W. R., & Lang, M. H. (n.d.). International Accounting Standards and Accounting Quality. *SSRN Electronic Journal SSRN Journal*. doi:10.2139/ssrn.688041

Biddle, G. C., Hilary, G., & Verdi, R. S. (2009, 12). How does financial reporting quality relate to investment efficiency? *Journal of Accounting and Economics, 48*(2-3), 112-131. doi:10.1016/j.jacceco.2009.09.001

Bruynseels, L., & Cardinaels, E. (2014, 01). The Audit Committee: Management Watchdog or Personal Friend of the CEO? *The Accounting Review, 89*(1), 113-145. doi:10.2308/accr-50601

Burgstahler, D. C., Hail, L., & Leuz, C. (2006, 10). The Importance of Reporting Incentives: Earnings Management in European Private and Public Firms. *The Accounting Review, 81*(5), 983-1016. doi:10.2308/accr.2006.81.5.983

Carcello, J. V., & Nagy, A. L. (2004, 09). Audit Firm Tenure and Fraudulent Financial Reporting. *AUDITING: A Journal of Practice & Theory, 23*(2), 55-69. doi:10.2308/aud.2004.23.2.55

Carey, P., & Simnett, R. (2006, 05). Audit Partner Tenure and Audit Quality. *The Accounting Review, 81*(3), 653-676. doi:10.2308/accr.2006.81.3.653

Chan, D. K. (1999, 12). "Low-Balling" and Efficiency in a Two-Period Specialization Model of Auditing Competition. *Contemporary Accounting Research, 16*(4), 609-642. doi:10.1111/j.1911-3846.1999.tb00598.x

Chen, C., Lin, C., & Lin, Y. (2008, 06). Audit Partner Tenure, Audit Firm Tenure, and Discretionary Accruals: Does Long Auditor Tenure Impair Earnings Quality? *Contemporary Accounting Research, 25*(2), 415-445. doi:10.1506/car.25.2.5

Cohen, D. A., Dey, A., & Lys, T. Z. (2008, 05). Real and Accrual-Based Earnings Management in the Pre- and Post-Sarbanes-Oxley Periods. *The Accounting Review, 83*(3), 757-787. doi:10.2308/accr.2008.83.3.757

Corbella, S., Florio, C., Gotti, G., & Mastrolia, S. A. (2015). Audit firm rotation, audit fees and audit quality: The experience of Italian public companies. *Journal of International Accounting, Auditing and Taxation, 25*, 46-66. doi:10.1016/j.intaccaudtax.2015.10.003

Daugherty, B. E., Dickins, D., Hatfield, R. C., & Higgs, J. L. (2013, 06). Mandatory Audit Partner Rotation: Perceptions of Audit Quality Consequences. *Current Issues in Auditing, 7*(1). doi:10.2308/ciia-50446

Dechow, P.M., Sloan, R.G., Sweeny, A. (1995, 04). Detecting Earnings Management. The Accounting Review, 70, 193-225

Dechow, P. M., Hutton, A. P., Kim, J. H., & Sloan, R. G. (2012, 04). Detecting Earnings Management: A New Approach. *Journal of Accounting Research, 50*(2), 275-334. doi:10.1111/j.1475-679x.2012.00449.x

Dechow, P. M., & Dichev, I. D. (2002, 03). The Quality of Accruals and Earnings: The Role of

Accrual Estimation Errors. *The Accounting Review, 77*(S-1), 35-59. doi:10.2308/accr.2002.77.s-

1.35

Eilifsen, A. (2010). *Auditing and assurance services*. New York: McGraw-Hill Higher Education.

Eisenhardt, K. M. (1989, 01). Agency Theory: An Assessment and Review. *The Academy of

Management Review, 14*(1), 57. doi:10.2307/258191

Ewelt-Knauer, C., Gold, A., & Pott, C. (2013, 06). Mandatory Audit Firm Rotation: A Review of

Stakeholder Perspectives and Prior Research. *Accounting in Europe, 10*(1), 27-41.

doi:10.1080/17449480.2013.772717

Field, A. P. (2009). *Discovering statistics using SPSS*. London: SAGE.

Gates, S. K., Lowe, D. J., & Reckers, P. M. (2006, 12). Restoring public confidence in capital markets

through auditor rotation. *Managerial Auditing Journal, 22*(1), 5-17.

doi:10.1108/02686900710715611

Gerakos, J. (2012, 03). Discussion of Detecting Earnings Management: A New Approach. *Journal of

Accounting Research, 50*(2), 335-347. doi:10.1111/j.1475-679x.2012.00452.x

Graham, J. R., Harvey, C. R., & Rajgopal, S. (2005, 12). The economic implications of corporate

financial reporting. *Journal of Accounting and Economics, 40*(1-3), 3-73.

doi:10.1016/j.jacceco.2005.01.002

Healy, P. M., & Palepu, K. G. (2003, 06). The Fall of Enron. *Journal of Economic Perspectives,

17*(2), 3-26. doi:10.1257/089533003765888403

Healy, P. M., & Wahlen, J. M. (1999, 12). A Review of the Earnings Management Literature and Its Implications for Standard Setting. *Accounting Horizons, 13*(4), 365-383. doi:10.2308/acch.1999.13.4.365

Hooghiemstra, R. (2012, 03). What determines the informativeness of firms' explanations for deviations from the Dutch corporate governance code? *Accounting and Business Research, 42*(1), 1-27. doi:10.1080/00014788.2011.600630

Imhoff, E. A. (2003, 01). Accounting Quality, Auditing, and Corporate Governance. *Accounting Horizons, 17*(S-1), 117-128. doi:10.2308/acch.2003.17.s-1.117

Jackson, A. B., Moldrich, M., & Roebuck, P. (2008, 05). Mandatory audit firm rotation and audit quality. *Managerial Auditing Journal, 23*(5), 420-437. doi:10.1108/02686900810875271

Johnson, V. E., Khurana, I. K., & Reynolds, J. K. (2002, 12). Audit-Firm Tenure and the Quality of Financial Reports. *Contemporary Accounting Research, 19*(4), 637-660. doi:10.1506/llth-jxqv-8cew-8mxd

Krauß, P., Pronobis, P., & Zülch, H. (2014, 02). Abnormal audit fees and audit quality: Initial evidence from the German audit market. *Journal of Business Economics J Bus Econ, 85*(1), 45-84. doi:10.1007/s11573-014-0709-5

Myers, J. N., Myers, L. A., & Omer, T. C. (2003, 07). Exploring the Term of the Auditor-Client Relationship and the Quality of Earnings: A Case for Mandatory Auditor Rotation? *The Accounting Review, 78*(3), 779-799. doi:10.2308/accr.2003.78.3.779

Nagy, A. L. (2005, 06). Mandatory Audit Firm Turnover, Financial Reporting Quality, and Client

    Bargaining Power: The Case of Arthur Andersen. *Accounting Horizons, 19*(2), 51-68.

    doi:10.2308/acch.2005.19.2.51

NBA (2016), *NBA Alert 38*; Audit firm rotation. Nederlandse Beroepsorganisatie van Accounts.

Ndofor, H. A., Wesley, C., & Priem, R. L. (2013, 01). Providing CEOs With Opportunities to Cheat:

    The Effects of Complexity-Based Information Asymmetries on Financial Reporting Fraud.

    Journal of Management, 41(6), 1774-1797. doi:10.1177/0149206312471395

Ronen, J., & Yaari, V. (2008). *Earnings management: Emerging insights in theory, practice, and*

    research. New York: Springer.

Roychowdhury, S. (2006, 12). Earnings management through real activities manipulation. *Journal of*

    Accounting and Economics, 42(3), 335-370. doi:10.1016/j.jacceco.2006.01.002

Shleifer, A., & Vishny, R. W. (1997, 06). A Survey of Corporate Governance. *The Journal of*

    Finance, 52(2), 737-783. doi:10.1111/j.1540-6261.1997.tb04820.x

Zang, A. Y. (2012, 03). Evidence on the Trade-Off between Real Activities Manipulation and

Accrual-Based Earnings Management. *The Accounting Review, 87*(2), 675-703. doi:10.2308/accr-

10196

9. *Appendices*

Table 1: Advantages and disadvantages audit firm rotation

Advantages	Disadvantages
More skepticsm.	Lack of familiarity which can result in audit failure.
New perspective .	Higher market concentration.
More objectivity.	Limited choice for companies picking audit firms.
Restore confidence regulatory system.	Loss of client knowledge.
Prevent low-balling.	Higher audit costs.
Increase of oversight (written work improvements).	Potentially understaffed teams due to increase audit time which results in risk for loss of quality.

Table 2. Variable definitions

Accrual based earnings management

DA_{it}	=	Discretionary Accruals for firm i in year t
TA_{it}	=	Total accruals for firm i in year t
NA_{it}	=	Normal acruals for firm i in year t
$Assets_{it-1}$	=	Lagged total assets for firm i in year t
ΔREV_{it}	=	Change in revenue from the previous year for firm i in year t
ΔAR_{it}	=	Change in accounts receivable from the previous year for firm i
PPE_{it}	=	Gross value of property, plant and equipment

Real earnings management

DiscEXP	=	The sum of Advert, R&D, and SG&A expenses
CFO_{it}	=	Net Cash flow from operating activities
$Assets_{it-1}$	=	Lagged total assets for firm i in year t
$Sales_{it}$	=	Total Net sales for firm i in year t

$\Delta Sales_{it}$	=	Change in sales for firm i in year t
$\Delta Sales_{i,t-1}$	=	Lagged change in sales for firm i in year t
$COGS_{it}$	=	Cost of goods sold for firm i in year t
ΔINV_{it}	=	Change in inventory for firm i in year t
REM_DiscEXP	=	Residuals that indicate real earnings management
REM_CFO	=	Residuals that indicate real earnings management
REM_Prod	=	Residuals that indicate real earnings management.

Regression analysis

REM_CFO	=	Real earnings management variable for cash flow
REM_DiscEXP	=	Real earnings management variable for discretionary expenses
REM_Prodcost	=	Real earnings management variable for production costs
Rotation		
(0,1)	=	0 if there has been no rotation, 1 if there has been a rotation.
Short_Tenure(0,1)=		1 if the audit firm tenure is 3 years or shorter and 0 if is medium or long
Long_Tenure(0,1)=		1 if the audit firm tenure is longer than 9 years, 0 if it is medium or short
Size	=	Natural logarithm of total assets at year end.
Age	=	Number of years since incorporation of firm
LEV	=	Book value of total debt divided by total assets at the end of fiscal year t
CFO_AVGTA	=	Net cash flow from operating activities scaled by average total assets of total assets for firm i in year t
Growth	=	Growth rate of net sales over the previous year
Industry	=	Based on two-digit SIC codes
Auditor Type	=	0 if the auditor is non big four and 1 if the auditor is a big four auditor
$\beta_{1i},....\beta_{6i}$	=	Firm specific OLS regression estimates.
ϵ_{it}	=	Error term (residuals) for firm i in year t

These variable definitions show how the different dependent and independent variables have been computed.

Table 3. Sample selection

Firm year observations of Dutch listed firms in the AEX, AMX and ASCX	1125
Less:	
Observations with missing auditor data*	201
Observations with missing financial data*	215
Amount of available and used firm year observations	709

Table 4. Firm Sample composition

AccelGroup	15	Koninklijke Ahold NV	15
Akzo Nobel	15	Koninklijke Bam Groep NV	15
AMG	9	Koninklijke Brill NV	15
Amsterdam Commmodities	15	Koninklijke DSM NV	15
Aperam	8	Koninklijke KPN NV	15
Arcadis	15	Koninklijke Phillips NV	15
ASMI	15	Lucas Bols	4
ASML	15	Nedap	15
Aalberts	15	Neways	15
Arcelor mittal	15	OCI	3
BE Semiconductors	15	Ordina	15
Beter bed	15	PostNL	15
Boskalis	15	Royal Dutch Shell	15
Brunel	15	Refresco	7
Corbion	15	RELX Group	15
DPA Flex	15	Randstad	15
Fagron	9	Sligro	15
Fugro	15	Stern Group	15
Galapagos	12	Telegraaf	15
Gemalto	13	TKH Group	15
Grandvision	5	TNT Express	6
Heijmans	15	TomTom	12
Heineken	15	USGPeople	15
ICT	15	Unilever	15
IMCD	4	Wessanen	15
Intertrust	2	Wolters kluver	15
Kendrion	15		
		Total 709 firm year observations	

Table 5. Auditors sample composition

PwC	253
KPMG	249
EY	179
Deloitte	195
Other	48
Total	**924**

Table 6. Tabulation of audit firm rotations in the sample

Rotation (0,1)	Frequency	Percentage
0	664	0.9365
1	45	0.0635
Total	**709**	**100**

Table 7. Tenure observations

Long tenure (0,1)	Frequency	Percentage
0	491	0,692
1	218	0,308
Total	**709**	**100**

Short tenure (0,1)		
0	478	0,674
1	231	0,326
Total	**709**	**100**

Table 8. Descriptives earnings management

Variable	Observations	Mean	Std.Dev	Min	Max
DACC	661	-0,008	0,093	-0,568	0,745
REM_DiscEXP	651	-0,001	0,238	-0,671	1,271
REM_CFO	655	-0,003	0,079	-0,485	0,504
REM_Prodcost	601	-1,493	1,284	-3,210	5,669
Total_REM	599	-1,480	1,329	-3,210	5,628

Table 9: Pearson Correlation matrix

	DACC	REM_CFO	REM_DiscEXP	REM_Prodcost	Rotation(0,1)	Long_tenure	Short_tenure	Leverage (LEV)	Size	Scaled Cashflow (CFO_DIV_AVGTA)	Growth	Auditor_Type	Industry (SICcode)
DACC (1)	1												
REM_CFO	-0,2254**	1											
REM_DiscEXP	-0,0296	0,1251*	1										
REM_Prodcost	0,0559	-0,0283	0,0966*	1									
Rotation(0,1)	-0,028	-0,0276	-0,0051	0,0306	1								
Long_tenure	0,0137	0,0051	0,1497*	-0,0936*	-0,1735*	1							
Short_tenure	-0,0087	-0,0638	-0,2052*	0,0038	0,3745*	-0,4632*	1						
Leverage (LEV)	0,0316	0,0073	-0,0621	-0,1833*	-0,0662	-0,0523	0,0727	1					
Size	0,008	0,0735	-0,0156	-0,4239*	-0,051	0,1518*	-0,111*	0,2203*	1				
Scaled Cashflow (CFO_DIV_AVGTA)	-0,0963*	0,4852*	0,1133*	0,0537	0,1296*	0,0646	-0,0291	0,0511	0,1053*	1			
Growth	-0,0116	0,0675	0,1322*	0,2501*	0,1019*	-0,1108*	0,0139	-0,0816*	-0,0224	0,0188	1		
Auditor_Type	-0,0547	0,0406	0,0599	-0,2768*	-0,0609	0,0836*	-0,0588	-0,0085	0,1622*	-0,0724	-0,0867*	1	
Industry (SICcode)	-0,0457	-0,059	-0,087*	0,3542	-0,0134	0,0126	-0,0079	-0,0824*	-0,1993*	-0,0009	-0,0236	-0,0937*	1

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

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

Table 10. VIF

Variable	VIF	1/VIF
Rotation(0,1)	1,27	0,7865
Long_tenure	1,27	0,7845
Short_tenure	1,47	0,6803
Leverage (LEV)	1,16	0,8594
Size	1,08	0,9249
Scaled Cashflow (CFO_DIV_AVGTA)	1,05	0,9508
Growth	1,04	0,9618
Auditor_Type	1,06	0,9429
Industry (SICcode)	1,05	0,9485
mean VIF	1,16	

Radboud Universiteit Nijmegen

Table 11. Results multiple regression analysis

	DACC		Total_REM		REM_Prodcost		REM_CFO		REM_DiscEXP	
Variables	**Coefficient**	**P-value**	**Coefficient**	**P-Value**	**Coefficient**	**P-value**	**Coefficient**	**P-value**	**Coefficient**	**P-value**
Rotation(0,1)	-0,0021	0,897	0,0163	0,442	**0,0667**	0,416	-0,0190	0,071	0,0632	0,128
Long_tenure(0,1)	0,0044	0,605	-0,0571	0,575	-0,0523	0,485	-0,0010	0,891	0,0461	0,031*
Short_tenure(0,1)	-0,0011	0,903	-0,3457	0,010**	-0,1973	0,002**	-0,0062	0,415	-0,1058	0,000**
Size	0,0003	0,831	-0,2103	0,000**	-0,0910	0,079	0,0008	0,686	-0,0091	0,048
Leverage(LEV)	0,0207	0,378	-0,7483	0,011*	0,3238	0,288	-0,0483	0,042*	-0,0498	0,389
Cashflow (CFO_div_AVGTA)	-0,0785	0,009**	1,240	0,000**	0,2867	0,136	0,2771	0,000**	0,2089	0,005**
Growth	-0,0031	0,788	1,135	0,000**	1,0706	0,000**	0,0038	0,625	0,1020	0,000**
Auditor_type(0,1)	-0,0521	0,073	-1,436	0,000**	0,3844	0,163	0,0105	0,708	0,1157	0,105
Industry	0,000	0,219	0,0001	0,000**	-0,0001	0,000**	0,0000	0,391	0,0000	0,011*
(Constant)	0,051	0,120	0,877	0,025*	-2,261	0,000**	-0,0221	0,506	-0,0022	0,978

N= 655	N= 599	N= 601	N= 655	N= 651
R²= 0,0046	R²= 0,3359	R²= 0,3618	R²= 0,1962	R²=0,087
Prob>F =0,215	Prob>F = 0,00	Prob>F = 0,00	Prob>F = 0,00	Prob>F = 0,000

Table 12. Robustness check with cutoff for 2 and 8 years

Variables	DACC Coefficient	P-value	Total_REM Coefficient	P-Value
Rotation(0,1)	-0,011	0,534	0,1507	0,572
Long_tenure	-0,002	0,801	0,056	0,58
Short_tenure	0,0065	0,584	-0,2474	0,242

Table 13 Robustness check with cutoff for 4 and 10 years

Variables	DACC Coefficient	P-value	Total_REM Coefficient	P-Value
Rotation(0,1)	-0,0058	0,719	0,1021	0,608
Long_tenure	0,018	0,05*	-0,1085	0,316
Short_tenure	0,008	0,32	-0,3228	0,005*

*Control variables were also added but not tabulated