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THE EFFECT OF NON-AUDIT FEES ON AUDIT QUALITY

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ABSTRACT

Recently, there has been growing interest by regulators to review the effects of non-audit service fees on audit quality. This is done because non-audit services poses a threat to auditor independence as the auditor might have to audit his or her own work. It is the aim of this thesis to achieve a comprehensive understanding on whether non-audit service fees affect audit quality, and whether auditor independence is impaired by the presence of these services. This thesis consist two sections. First section of this thesis introduces previous academic studies on audit quality and non-audit services. Second section constitutes the empirical part of this study, in which modified Jones model is used in order to investigate the relation between non-audit services and audit quality in Finnish publicly listed companies between 2010 and 2012.

In spite of great interest, empirical evidence over the association between non-audit services, audit quality and auditor independence has yielded mixed results. However, a great number of studies proposing non-audit fees to have a positive effect on audit quality could be viewed suggestive while making conclusions. Also, criticism towards the results of studies proposing non-audit fees to have negative effects on audit quality e.g. Frankel et al. (2002) could be utilized when analysing this relationship. Thus, general perception amongst academics seems to be in favour of provision of non-audit services to audit clients.

Based on the results introduced in the second part of this study, no associations were found between measures of audit quality and non-audit fees. However, results indicate that two control variables used, are associated with audit quality. Cash flow from operations seem to have a negative association with audit quality, whereas, a positive association is discovered between audit quality and growth rate of net sales.

Nevertheless, these results can only be viewed as tentative due to a number of reasons e.g. limited number of companies listed in Finland and hence, included into the regression model. It can be concluded that further research could be utilized to further investigate the relationship between audit quality and non-audit fees.

KEY WORDS: non-audit services (NAS), independence, audit quality, earnings management

1. INTRODUCTION

Around millennium a dramatic growth was discovered both, in the number and the magnitude of non-audit services provided to audit clients in the US (Securities and Exchange Commission 2000). The ratio of non-audit to audit fees paid to incumbent auditor in the UK rose from 98% in 1996 to 300% in 2002 (Beattie & Fearnley 2002:11). Also, over 50% of revenues in 2000 received by the Big 4 auditors in the US were consulting services, compared to 12% in 1977 (Levitt 2000). Further, non-audit fees averaged as 96% of audit fees for FTSE 250 companies in the UK for the audit year ended either in 2006 or 2007 (ICAEW 2007:9). Moreover, the ratio was 60,3% for the audit year ended in 2008 or 2009 (ICAEW 2009:6).

Recently, there has been growing interest by the regulators to review the effects of non–audit service fees on audit quality (Levitt 2000; Sharma & Sidhu 2001:595; Defond, Raghunandan & Subramanyam 2002:1271; Li 2009:201; European Commission 2010; European Commission 2011:8; Quick 2012:17–18). A number of reasons to prompt this topic to the central of regulator's attention can be named. However, the prevailing perception is that failures including Arthur Andersen and more recently the financial crisis has led to the discussion whether non-audit service fees provided by the incumbent auditor to the audit client should be proscribed. (Defond et al. 2002:1271; Li 2009:201–202; European Commission 2010:4; Lin & Hwang 2010:68; Quick 2012:17–18.) Specifically, the question addressed has been whether non-audit service fees reduce audit quality by impairing auditor independence.

To address the threat posed by non-audit fees to auditor independence regulators have enacted legislation requiring firms to disclose their audit and non-audit fees with respect to proxy statement in the US (Securities and Exchange Commission 2000; Abbott, Parker, Peters & Raghunandan 2003a:23; Whisenant, Sankaraguruswamy & Raghunandan 2003:723; Krishnan, Sami & Zhang 2005:112; Li 2009:201). Auditors have also been constrained in providing certain services, including financial information system design and implementation services, to their audit clients (Securities and Exchange Commission 2000; Li 2009:201; AICPA 2012). In total, Sarbanes-Oxley Act 2002 (hereafter SOX-2002) prohibited nine specific non-audit services in the US (Krishnan, Su & Zhang 2011:108; Habib 2012:216). In Europe, a prohibition of non-audit services to audit clients has also

been proposed by European Commission (European Commission 2011:8; Quick 2012:17–18).

Regulators' attention has incurred a flurry of research to study the relationship between non–audit fees and audit quality (Francis 2004:357; Lim & Tan 2008:200; Li 2009:202). This research has mainly focused to the US (Frankel, Johnson & Nelson 2002; Ashbaugh, LaFond & Mayhew 2003; Chung & Kallapur 2003; Lim & Tan 2008; Li 2009), although there is some European evidence from the UK (Firth 1997; Ferguson, Seow & Young 2004), and Sweden (Svanström 2012; Zerni 2012). Researchers have also provided evidence with respect to Australia (Sharma & Sidhu 2001), and New Zealand (Sharma, Sharma & Ananthanarayanan 2011; Knechel, Sharma & Sharma 2012).

Notwithstanding of numerous previous studies, contradictory evidence has been reported on the association between non-audit fees and audit quality (DeFond et al 2002:1248; Frankel et al 2002:74; Lim & Tan 2008:200; Svanström 2012:2). According to Francis (2004:357), the most controversial of these studies is Frankel et al. (2002). It is even been argued that the drafters of SOX-2002 relied on Frankel et al.'s 2002 study as 'an important piece of academic research' (Habib 2012:216). Providing evidence in support of a ban on provision of non-audit fees from auditors to their audit clients, Frankel et al. (2002) incentivised researchers to further study this association. Their findings have since been discredited by other research papers (Ashbaugh et al. 2003; Chung and Kallapur 2003).

1.1. Research problem

The purpose of this thesis is to examine the effect of non-audit fees on audit quality. The aim is to investigate whether the auditor independence, in fact, is impaired by the presence of non-audit services. In providing audit clients with a variety of services, including installments of management information systems, tax advisory, other than audits and subsequently auditing their own work audit firms are acting as both auditor and consultant. Hence, the provision of non-audit services can create an economic bond between the auditor and the client, which is set to further strengthen with quasi-rents i.e. 'the excess of revenues over avoidable costs, including the opportunity cost of auditing the next-best alternative client'. (DeAngelo 1981b:116; Frankel et al. 2002:72; Quick 2012:17–18.) This

poses a threat to auditor independence (Simunic 1984:679). Economic bond can be seen as an incentive for the auditor to acquiesce to client pressure via earnings management (Frankel et al. 2002:75). Provision of non-audit services can also create a conflict of interest between the auditor and the client and impugn the reliability and accuracy of the audit as auditor is provided with the incentive not to report 'consulting deficiencies observed during the audit'. (Simunic 1984:679.)

In spite of these concerns, the provision of non-audit services can also impose the auditor to invest in reputational capital in order to protect its independence (Antle, Griffin, Teece & Williamson 1997:9). Providing auditing and non-audit services to the same client can incur cost savings as the same client-specific information benefits the auditor by producing knowledge spillovers (Simunic 1984; Arruñada 1999:514). Knowledge spillovers or productive economies of scope in general, can occur e.g. when 'information required to evaluate an internal control systems is largely identical to the one needed to improve it'. Cost savings can also occur in a contractual form. Exchanging professional services such as non-audit services usually incur high transaction costs as necessary quality confirmation measures had to be put in place. However, when provided by the incumbent auditor no such confirmation measures are needed. Further, substantial competence is required when 'evaluating adequacy of provision for paying taxes' which enables the auditor, providing non-audit services, to 'form a better founded judgment regarding the client' and as such 'facilitates audit work'. (Arruñada 1999:514.) These arguments support the theory that auditors are not inclined to compromise their independence.

Based on previous research it is expected that there is an association between non-audit to audit fee ratio and an audit quality measure, discretionary accruals. It is of interest to analyse empirical research conducted concerning the effect of non-audit services on audit quality, as certain non-audit services have been proscribed in the US, and regulators in Europe have proposed a prohibition of non-audit services. This study concentrates only on non-audit services bought from the incumbent auditor, as services bought from non-incumbent auditors lack the endangering effect for auditor independence (Zerni 2012:823).

2. AUDIT QUALITY

Theory suggests demand for external audit to arise from 'the agency problems associated with the separation of ownership and control, along with information asymmetry between management and absentee owners' (Watkins, Hillison & Morecroft. 2004:154; Lin & Hwang 2010:59; Svanström 2012:22). This is also supported by empirical evidence (DeFond 1992:25; Svanström 2012:10–11, 22). Specifically, agency costs can be considered as an important factor creating demand for audit quality (DeFond 1992:25).

Numerous definitions for audit quality have been applied (Watkins et al. 2004:153). One of the most prevalent, cited in numerous studies (e.g. Krishnan & Schauer 2000:11; Watkins et al. 2004:154; Quick 2012:18; Smith 2012:23), is DeAngelo's (1981a:186) definition of audit quality as 'the market-assessed joint probability that a given auditor will both (a) discover a breach in the client's accounting system, and (b) report the breach'. DeAngelo (1981a:186) suggest that 'the probability that a given auditor will discover a breach depends on the auditor's technological capabilities, the audit procedures employed on a given audit, the extent of sampling, etc.'. According to Watkins et al. (2004:154), this probability is 'contingent upon auditor independence'.

Audit quality can also be defined with respect to conformance with valid standards. Generally Accepted Auditing Standards (hereafter GAAS) outline 'the guidelines and measures' for the audit quality in the US (Lin & Hwang 2010:60). Auditors' compliance with GAAS or the errors made by auditors can be seen to reflect the probability that auditor discovers and reports the breach. In addition to GAAS, client's compliance with applicable accounting standards has also been used as a measure of audit quality. Conformance with Generally Accepted Accounting Principles (hereafter GAAP) is likely to directly correlate with the probability of discovering and reporting a breach in the accounting system i.e. audit quality. (Krishnan & Schauer 2000:12-13.)

Based on the academic literature Watkins et al. (2004:153–155) divide, as presented in figure 1, audit quality to auditor reputation and auditor monitoring strength. GAAS further specify quality of external audit to its components as competence, independence and exercise due professional care (Lin & Hwang 2010:60; AICPA 2012:2819 & 2821). As auditor reputation is based on 'users' belief' concerning auditor monitoring strength,

imprecision may exist between actual and perceived audit quality. However, realignment of perceived and actual audit quality is expected as information is revealed. Also, DeAngelo's (1981a:186) definition of audit quality as 'market-assessed probability' emphasizes perception of auditors' competence and independence. (Watkins et al. 2004:153–156.)

According to Watkins et al. (2004:153–155), high quality audits result in information credibility and information quality. Watkins et al. (2004:153–155) suggest, that credibility of financial statement information is affected by auditor reputation. Additionally, auditor monitoring strength affects the quality of financial statement information. Consistently, Balsam, Krishnan & Yang (2003:71) propose earnings quality and auditor credibility to vary with audit quality. Also, as firms' debt covenants are based on accounting information produced, creditors benefit from high quality audits in a form of enhanced reliability of this information (DeFond 1992:21). Moreover, in society level auditors are responsible for maintaining the public's confidence (AICPA 2012:2813).

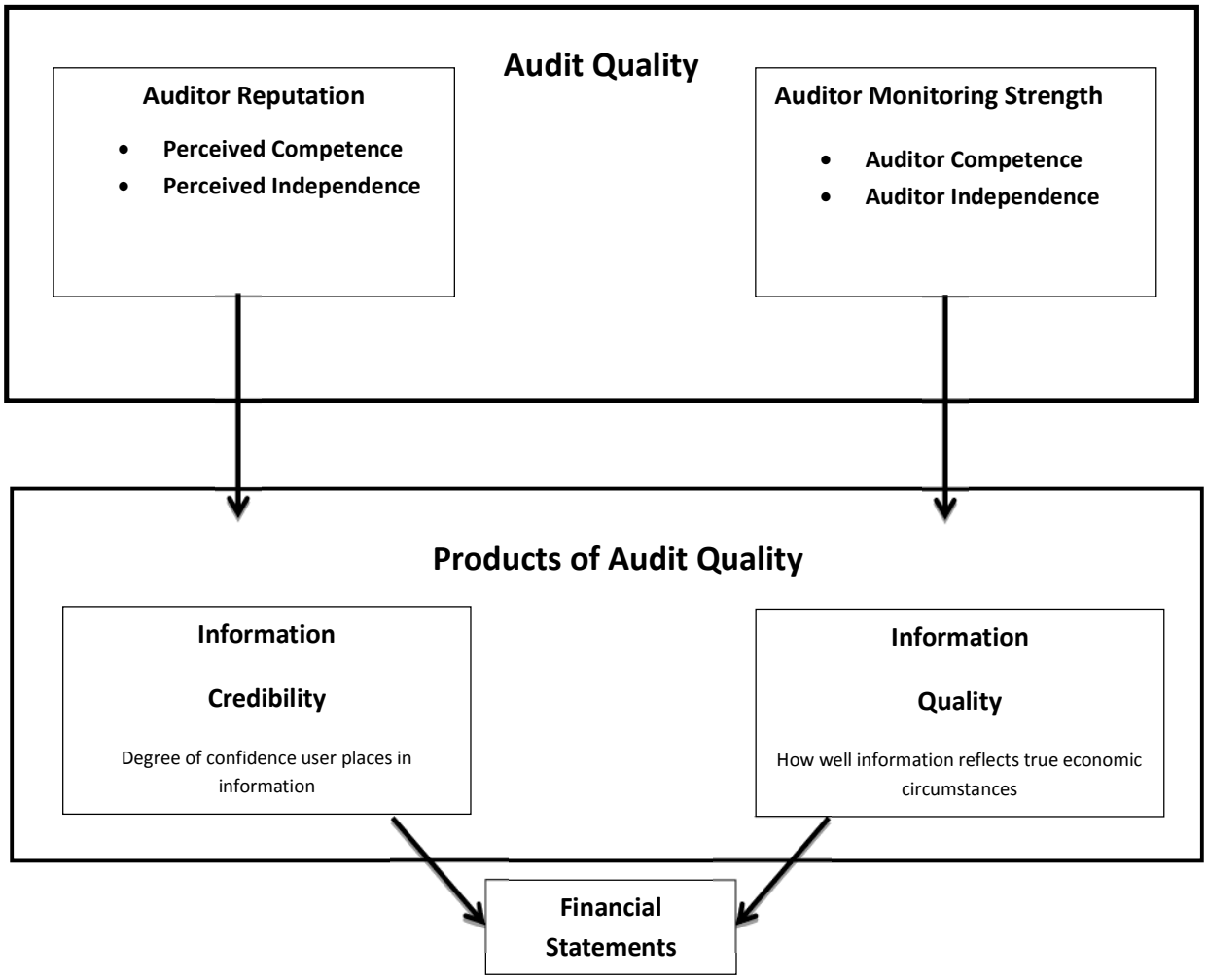

Figure 1. Audit Quality Framework. (Watkins et al. 2004:155.)

According to Francis (2004:346), strong criticism was addressed towards auditors, especially Big 4 auditors, as a result of the collapse of Arthur Andersen in 2002, right after Enron filed bankruptcy in 2001. In spite of the criticism towards audit quality, Francis (2004:345) argues that 'acceptable level of audit quality may be achieved at a relatively low cost'. In his article Francis (2004:346) reviews empirical research mainly from United States from the past 25 years.

Francis (2004:360) summarizes what is known about audit quality.

- 'Auditing is relatively inexpensive, less than 0,1% of aggregated client sales;

- Outright audit failures with material economic consequences are very infrequent;
- Audit reports are informative, despite the presence of false positives and false negatives;
- Positive association between audit quality and earnings quality has been identified;
- Incentives created by legal regimes affect audit quality;
- There is evidence of differential audit quality by Big 4 firms and industry experts, and differential audit quality across individual offices of Big 4 firms and across different legal regimes;
- Academic research has little impact on regulations and policy-making in the US, although it may have had more influence in other countries such as the United Kingdom.'

2.1. Auditor independence

External audits are, apart from the legal requirement, demanded with respect to agency theory. Calls for monitoring and verification of the actions taken by firm's management and to provide an independent opinion of the company's financial statement generates this demand. As management usually has considerable influence upon auditor selection it is important for auditor to be independent in order to execute its task. Also, any impairment of independence, in fact or in appearance, would result in an increase in agency costs. (Firth 1997:6–7.) Moreover, an important distinction between independence in fact and independence in appearance has been widely recognized by researchers and regulators (Arruñada 1999:519; Levitt 2000; Krishnan et al. 2005:112; Hay, Knechel & Li 2006:716; AICPA 2012:2844; IFAC 2012:46).

International Federation of Accountants define independence of mind 'as the state of mind that permits the expression of a conclusion without being affected by influences that compromise professional judgement, allowing an individual to act with integrity and exercise objectivity and professional scepticism' (IFAC 2012:46). Definition almost identical with the one defined by American Institute of Certified Public Accountants (AICPA 2012:2844). As independence in fact requires a mental state of objectivity it does not necessarily imply auditor to be perceived as independent by stakeholders. Regardless of the lack of independence in appearance, auditor is still able to make 'independent audit

decisions' if placed in a 'potentially compromising position' (Krishnan et al. 2005:112; Habib 2012:214–215.) However, it is not enough for the auditor to act independently; the public must also view auditor as being independent and objective (Levitt 2000; Krishnan et al. 2005:112; AICPA 2012:2819). Independence in appearance can be defined as 'the avoidance of facts and circumstances that are so significant that a reasonable and informed third party would be likely to conclude, weighing all the specific facts and circumstances, that a firm's, or a member of the audit team's, integrity, objectivity or professional scepticism has been compromised' (IFAC 2012:46).

American Institute of Certified Public Accountants recognizes numerous threats to auditor independence in their Code of Professional Conduct for auditors. In accordance with paragraphs 13–19 of section 100–1, these threats can be listed as follows:

Self-review threat — an attest engagement where auditors review their own, or their firm's non-audit work;

Advocacy threat — actions promoting a client's interests or position;

Adverse interest threat — actions or interests between the auditor and the client that are in opposition e.g. commencing litigation against the other;

Familiarity threat — auditors have a close or longstanding relationship with the audit client or with other parties who performed non-audit services for the client. It is enough that the auditor is known, by reputation, to have this kind of relationship;

Undue influence threat — an audit client attempts to coerce the auditor or exercises excessive influence over the auditor e.g. client threats to replace the auditor due to disagreement on the application of an accounting principle;

Financial self-interest threat — an auditor has a potential benefit from a financial interest in an audit client. This can also occur when auditor has excessive reliance on revenue from a single client;

Management participation threat — auditor takes on the role of client management in

performing management functions on behalf of an audit client. (AICPA 2012:2845–2846.)

Auditor independence has been widely studied in appearance (Krishnan et al. 2005:112; Zerni 2012:823), and in fact (Frankel et al. 2002; Hay et al. 2006). Although, non-audit service studies mostly concentrate on the latter (Zerni 2012:823). Empirical studies with respect to this association are described more detailed in section 3.

2.2. Measures of audit quality

The level of audit quality is often difficult to assess due to its largely unobservable nature (Firth 1997:7; Balsam et al. 2003:71; Eilifsen & Willekens 2008:3). For example auditor reputation, that constitutes audit quality in conjunction with auditor monitoring strength, is generally unobservable (Watkins et al. 2004:155). Further, as audit quality would also be costly to evaluate different surrogates are often proposed (DeAngelo 1981a:184–185). Hence, studies on audit quality can be classified according to the measures used as a surrogate for audit quality. Based on European studies these surrogates typically include ‘audit pricing, earnings management, and audit reporting’. ‘Other approaches include the number of misstatements detected or the number of restatements of financial statements demanded by the auditor.’ (Eilifsen & Willekens 2008:4.)

2.2.1. Audit fees

Consistent with the economic theory, Klein & Leffler (1981:634) provided support that price can be used as an indicator of quality. They argued that market price of a product, audit service in this case, ‘reflect differences in production costs and therefore differences in quality.’ Consistently, evidence provided by Moizer et al. (1997:72) suggests that higher audit fees reflect higher audit costs, which results in higher audit quality. Deis & Giroux (1996:55) discovered audit fees and audit hours to be significantly related to audit quality. In their other study, they also found significantly positive association between audit quality and audit hours in public sector. Concluding that, in the absence of direct measures to audit quality, audit hours can be as a ‘suitable surrogate for audit quality’ among firms of similar size. (Deis & Giroux 1992:463 & 477.) In accordance with previous research, Simunic (1984:681) proposed audit fees to be used as a measure of quality. He views audit fees as a

function of price, quantity, and quality of service. Furthermore, Moizer et al. (1997:62) provided the linkage between auditor reputation and audit fees. According to Moizer et al. (1997:62), 'higher audit fees reflect the economic effect of employing audit firms with above average reputation.' Whereas Hoitash, Markelevich & Barragato (2007:774) notes, that abnormal total fees 'represents either a premium received or a discount granted by the auditor'. They employ a prediction model to estimate unexpected portion of total fees (Hoitash et al. 2007:774). This is consistent with a number of other audit quality studies (Hoitash et al. 2007:765). According to Krishnan et al. (2005:113), audit fees can also be divided into reported and unexpected fees in order to measures auditor independence. Unexpected fees can be used as a measure to which actual fees are above or below 'normal' levels. Krishnan et al. (2005:113) argues unexpected audit fees to more directly reflect the 'auditor's stake in an engagement' compared to actual fees.

Although audit fees are considered to reflect the quality of audits, DeAngelo (1981b:118 & 126) found low balling i.e. 'setting audit fees below total current costs on initial audit engagement' not to be associated with impaired auditor independence. Rather she discovered low balling to be a common practice and response to the expectations of future quasi-rents created by competition in the markets. Specifically, DeAngelo (1981b:126) provides evidence that 'without altering the client specific quasi-rent stream low balling is predicted to have no effect on auditor independence'. According to Deis & Giroux (1996:73), low balling was not associated with lower audit quality.

2.2.2. Earnings management

According to taxonomy proposed by Eilifsen & Willekens (2008:4), earnings quality can be used as a surrogate to audit quality. This is based on theory that high quality earnings are 'expected to constrain opportunistic earnings management' (Lin & Hwang 2010:60). Schipper (1989:92) defines earnings management as a 'purposeful intervention in the external financial reporting process, with the intent of obtaining private gain'. According to Healy & Wahlen (1999:368), 'earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reporting to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers'. Whereas Dechow, Ge & Scrand. (2010:345) considers 'the distance of earnings from target to be one

of the implications of earnings management'.

According to Bartov, Gul & Tsui (2001:422), earnings management studies have mainly focused on discretionary accruals. Discretionary accruals can be used to reflect audit quality as management can execute their discretion over these accruals, in order 'to shift reported income among different fiscal periods'. Number of studies have proposed discretionary accruals as a proxy for audit quality (Chung and Kallapur 2003; Frankel et al. 2002; Svanström 2012; Pelham, Pope & Singh 2001; Watkins et al. 2004:170; Krishnan et al. 2011). These studies include a specified model to estimate discretionary accruals (Bartov et al. 2001:422).

Bartov et al. (2001:422) introduces that six most popular models to estimate discretionary accruals are the DeAngelo (1986) model, the Healy (1985) Model, the Jones (1991) Model, the Modified Jones Model (Dechow et al. 1995), the Industry Model (Dechow et al. 1995), and the Cross-sectional Jones Model (DeFond & Jiambalvo 1994). Dechow et al. (1995) provided evidence in favor of modified Jones model by arguing it to be the most powerful in testing earnings management. They also discovered Jones model to be unsuitable when management is able to exercise discretion over revenues, as the model is likely to exclude the discretionary portion of total accruals (Dechow et al. 1995:224). DeFond & Jiambalvo (1994:158) notes that the cross-sectional model estimates coefficient in a given year and thus avoid the underlying assumption in time-series model that the coefficients are stable across years.

According to Nelson, Elliot & Tarpley (2002:188–189), managers are more inclined towards income-increasing earnings management. Consequently, Big 5 auditors seem to be conscious of these attempts as they are discovered to more likely require adjustment of financial statement in case of current year income-increasing attempts. Earnings management is also more likely to be executed through timing or nature of a contract, transaction or activity that is governed by precise standards, which explicitly distinguishes or quantifies allowance of specific accounting treatment. However, auditors less likely require these attempts to be adjusted. Finally, auditors are discovered to more likely prevent material earnings management attempts. (Nelson et al. 2002:188–189.)

2.2.3. Going-concern opinion

Management is responsible for assessing entity's ability to continue as a going concern and prepare the financial statement in accordance with this assumption (Vuko & Berket 2012:115). Whereas paragraph 6 of International Standards on Auditing (ISA) 570 states that auditor is responsible for assessing the appropriateness of management's use of going concern assumption, supported with sufficient evidence (IFAC 2009:546). By issuing a going-concern opinion auditor casts 'a substantial doubt' over firm's continuity in existence (DeFond & Jiambalvo 1994:146).

Number of studies have typically used auditor's propensity to issue going concern opinion, a measure of auditor reporting, as a surrogate for audit quality (DeFond et al. 2002; Vanstraelen 2002; Carey & Simnett 2006; Lim & Tan 2008; Li 2009). DeFond et al. (2002:1250) argues that the use of auditor's propensity to issue going concern opinion is 'more direct and less noisy' surrogate for auditor independence in comparison to the use of discretionary accruals, propensity to meet earnings targets, and other types of earnings management indicators.

Alternative auditor reporting approaches consider auditors issuance of other than unqualified opinion, including qualified opinion, disclaimer of opinion, and adverse opinion as a proxy for audit quality (Vanstraelen 2002:177; Hay et al. 2006). Vanstraelen (2002:177) argues auditors to have tendency towards these other types of disclosure as a substitute for going-concern disclosure.

Lennox (1999:774) found audit reports not to signal useful incremental information concerning the probability of bankruptcy, although 'auditors are not responsible for predicting bankruptcy' itself (Vuko & Berket 2012:116). According to Lennox (1999:774), audit reports fail to imply from financial distress as these reports do not include any factors accounting for the macroeconomic environment. Also, auditors might be unwilling to change their opinion with respect to certain client as a result of strong persistence in audit reporting. This might be due to possible client losses or litigation risk. (Lennox 1999:774.)

Further, after being dismissed by a relatively high proportion of clients auditors are less

likely to issue going-concern opinions (Vanstraelen 2002:171). Vanstraelen (2002:175) argues that auditors across continental Europe are more reluctant in express going-concern uncertainty compared to US. Consistently, Vanstraelen (2002:175) discovered 63 per cent of the auditors not to disclose going-concern problems one year prior to the bankruptcy in Belgium in the period between 1992 and 1996. Whereas Sharma & Sidhu (2001:608) found 36,74 per cent of companies not to receive any qualification in the year preceding bankruptcy on an Australian sample between 1989 and 1996, with 42,86 per cent of all bankrupted companies receiving going-concern qualification. Regardless of these concerns Defond et al. (2002:1268) noted that distressed firms face higher probability of receiving a going concern opinion.

Vanstraelen (2002:171) argued that, clients paying higher audit fees are less likely to receive going-concern opinion. Although, it should be noted that since audit fee data is not publicly available in Belgium, Vanstraelen (2002:177) measured audit fees as natural logarithm of the sum of operational and financial revenues. Sharma & Sidhu (2001:609–610) failed to find evidence in support for this association. However, they found firms with higher ratio of non-audit fees to less likely receive going-concern opinion (Sharma & Sidhu 2001:610). Contrary, Li (2009:225) discovered positive association between audit fees, total fees, and going-concern opinions in 2003, after enactment of SOX.

2.3. Determinants affecting audit quality

The quality of audit has been discovered to depend upon several factors. It is the aim of this chapter to introduce these factors in accordance with previous studies. Some of these factors have been considered more popular research topics than the others. However, all of these factors have been considered as a research variable in some audit quality studies.

2.3.1. Agency costs

As a result of ‘disperse ownership’, separation of ownership and control can be seen to create agency conflict (Ho & Hutchinson 2010:121–122). Two aspects of agency problem can be distinguished. On the one hand, preference of the manager and owner can be seen to diverge. (DeFond 1992:21.) On the other hand, ‘information asymmetry between

management and absentee owners' causes 'imperfect observability of manager's actions' (DeFond 1992:21; Lin & Hwang 2010:59). It is necessary to control for the agency costs that, among other factors, affect the level and quality of external audit being demanded.

With respect to previous studies, a percentage of directors' shareholding in a company and a percentage of shares owned by the largest shareholder have been used as a proxy for agency costs. This is because high agency costs may risk auditor independence, in fact or appearance. Firth (1997:5) hypothesized high agency costs to result in lower levels of non-audit fees. Specifically, firms with high agency costs attempt to reduce possible perceived impairment of auditor independence by demanding less outside consulting. (Firth 1997:18; Abbot et al. 2003b:227.) Firth (1997:18) found positive relationship between percentage of directors' shareholdings, percentage of shares owned by the largest owner and non-audit fee ratio. Consistently, Abbot et al. (2003b:226) found positive association between their blockholder -variable, measuring voting control held by shareholders with more than 5 per cent of shares, and non-audit fee ratio. This is supported by Zerni (2012:829 & 836). He found the number of blockholders with more than 5 per cent of voting control to be positively association with non-audit and audit services. The number of blockholders were measured as shareholders that were not in connection with controlling shareholder. In accordance with agency theory, Svanström (2012:10–11 & 22) found that audit quality was positively linked to variable used to reflect agency costs, concluding that accounting and audit quality is prioritized in firms where ownership and management are separated. Moreover, DeFond (1992:24–25) found inverse correlation between changes in management ownership percentage and changes in audit quality.

Zerni (2012:823) was the first to study whether agency conflicts between majority and minority shareholders affects the firms' decision to purchase non-audit services. Agency conflicts between majority and minority shareholders are more common for Asian corporations compared to companies in the US and UK. Family ownership, that is more typical in Asia, can cause the shift 'from the manager-shareholder conflict to majority-minority shareholder conflict'. (Claessens & Fan 2002:74.) In Asian companies, agency costs between majority and minority shareholders usually occur when 'resources are diverted from the minority shareholders'. Whereas in the US and Europe, separation of ownership and control is more likely to cause agency conflicts. (Ho & Hutchinson 2010:121–122.)

2.3.2. Big 4

One of the first studies on audit quality differentiation was based on the dichotomy between large and small auditors (Francis 2004:352). Using taxonomy between Big 4 auditors and non-Big 4 auditors, these studies assumed audit quality to be constant across all Big 4 auditors and engagements (Simunic 1984:681). As a result of DeAngelo's (1981a) seminal study concerning the relationship between auditor size and audit quality, she argued that auditor size can be used as a proxy for audit quality. Although, evidence against the assumption that audit quality is constant across all Big 4 auditors has been more recently provided, many studies still consider the size of an auditor as a dichotomous variable, assuming that Big 4 auditors offer higher audit quality compared to non-Big 4 auditors (Firth 1997; Becker, Defond, Jiambalvo & Subramanyam 1998:1; Abbott, Parker, Peters & Raghunandan 2003b; Cameran 2005:130; Choi, Kim, Liu & Simunic 2008; Hogan & Wilkins 2008; Svanström 2012; Zerni 2012).

This line of research can be seen warranted as for example Big 4 auditors have almost 90 per cent market share in Sweden (Zerni 2012:831). Many studies provide evidence advocating Big 4 auditors to have a fee premium (Choi et al. 2008; Hogan & Wilkins 2008:230). Klein & Leffler (1981:634) notes that, the existence of a price premium in markets serves as a quality assurance. Further, differences in audit fees can be seen to reflect a quality difference in a competitive audit environment (Ireland & Lennox 2002:73). Li (2009:225) discovered distressed audit clients that had larger contribution of audit fees, to be more likely to receive going-concern opinion, if audited by Big 4 auditor.

A counterargument that high quality companies tend to select larger audit firms has also been made (Ireland & Lennox 2002:74). Cameran (2005:129-130) failed to find a general price premium for Big 4 auditors in Italian audit markets. However, she found evidence attributable to KPMG and argued that it could be due to better reputation. Further, Vanstraelen (2002:183) discovered that Big 4 auditors are not more likely to disclose going concern uncertainty in the audit report.

Legal environment has been considered pivotal when analysing whether audit quality is of higher among Big 4 auditors in comparison to non-Big 4 auditors (Choi et al. 2008; Francis & Wang 2008:158–160). Choi et al. (2008:76) discovered fee premium, charged by Big 4

auditors, to decreases with the strictness of country's legal liability regime. Big 4 auditors have also been considered to more effectively constrain earnings management in terms of income-increasing accruals (Kim, Chung & Firth 2003:344) and requiring adjustment of financial statement (Nelson et al. 2002:197–198).

Empirical studies based in USA provide evidence that Big 4 auditors offer higher audit quality compared to non-Big 4 auditors (Becker et al. 1998; DeFond et al. 2002; Hogan & Wilkins 2008; Li 2009). There is also some European evidence from listed companies in the UK (Chan, Ezzamel & Gwilliam 1993; Ireland & Lennox 2002) and cross-country evidence from privately held companies in Europe (Van Tendeloon & Vanstraelen 2008). Carey & Simnett (2006:672–673) provided Australian evidence in support for better audit quality among Big 4 auditors. More broadly, Choit et al. (2008) provided cross-country evidence from 15 different countries in support of higher audit quality offered by Big 4 auditors. Also, as Big 4 auditor could be expected to have a greater number of clients, Deis & Giroux (1992:476) discovered audit quality to improve as the number of audit clients increases. Also, Van Tendeloon & Vanstraelen (2008:460) studied this association with respect to privately held companies. According to their findings, Big 4 auditors only offer higher audit quality in countries with high tax alignment. Notwithstanding, Svanström (2012:21) found no association between discretionary accruals and Big 4 variable in a private firm setting in Sweden. In spite of some controversy, differences in audit quality between Big 4 and non-Big 4 auditors is widely recognized.

Finally, clients of Big 4 auditors have been discovered to purchase significantly less outside non-audit services compared to clients of non-Big 4 auditors. This can be due to limited range of consulting services provided by non-Big 4 auditors. (Zerni 2012:836.) Numerous previous studies (Firth 1997; Abbott et al. 2003b; Choit et al. 2008; Hogan & Wilkins 2008; Svanström 2012; Zerni 2012) include a dummy variable (BIG 4), indicating whether the company is audited by Big 4 auditor or not.

2.3.3. Size

Audit fees are found to increase with size and complexity of the firm (Giroux 1996:66; Abbot et al. 2003b:227; Whisenant 2003:737; Hogan & Wilkins 2008:229). This can be due to increased time that it takes to investigate a company with complex structures or higher

fee per hour rates billed by the auditor (Cameran 2005:134). Consistently, Giroux (1996:66) found large audit clients to require more audit hours. The size of the client is also discovered to be associated with its decision to purchase non-audit services. Thus, larger companies with more complex systems and wider range of activities tend to purchase more non-audit services. (Palmrose 1986:407; Abbott et al. 2003b:225.) According to Palmrose (1986:409), audit fees and total assets dictate whether companies purchase non-audit services or not. Also, Li (2009:225) discovered auditors to report more conservatively with respect to larger clients in the post-SOX period. Furthermore, Svanström (2012:22) discovered audit quality to significantly increase with the natural logarithm of total assets in a private firm setting. In spite of these studies, there is also evidence in support of a positive association between opportunistic accounting and client firm size as auditors may find it more difficult to challenge management of larger clients due to greater economic benefits (Ferguson et al. 2004:833). Nevertheless, natural logarithm of total assets has been widely used in previous research (Palmrose1986; Whisenant 2003; Cameran 2005; Hogan & Wilkins 2008; Lim & Tan 2008; Svanström 2012) to control for size and complexity of the firm.

2.3.4. Tenure

According to Francis (2004:356), calls for mandatory auditor rotation has been one of the incentives to prompt research in the field of auditor tenure. This part of research has examined if the length of the auditor-client relationship affects audit quality. Continuous measurement for auditor tenure has not been used in these studies as the relation between auditor tenure and audit quality may not be linear (Lim & Tan 2010:932). Therefore, studies have proposed certain classification of tenure variable e.g. clients having the same auditor for two to three years.

Proponents of mandatory rotation argue that longer auditor-client relationship can compromise auditor independence by leading to economic bonding between the auditor and the client firms. Economic bonding can further be recognized as ‘familiarity and personal connections between the auditor and the client firm’. (Gul, Jaggi & Krishnan 2007:120-121.) In other words, as auditor-client relationship lengthens ‘auditors can become captive to clients’ (Francis 2004:356). However, the length of the auditor-client relationship is also argued to be positively associated with audit quality as shorter auditor tenure lacks client

specific knowledge (Gul, Yu Kit Fung & Jaggi 2009:265 & 270). Further, auditors are likely to be more concerned about their reputation and 'less likely to be influenced by non-audit fees' as auditor-client relationship lengthens (Gul et al. 2007:119). Opponents of mandatory auditor rotation also argue that, economic incentives and internal mechanisms e.g. rotation of engagement personnel encourage auditors to maintain sufficient skepticism and independence (Francis 2004:356). Audit partner rotation is required in some countries e.g. United Kingdom, Germany, and Japan (Chen, Lin & Lin 2008:415). Mandatory audit firm rotation after 6 years, with possible extension of 2 years, was also proposed by EU in 2011 (European Commission 2011:8).

Auditor tenure studies have mainly focused on dealing with evidence from US. With respect to empirical studies on auditor-client relationship, a distinction between firm and partner level rotation has been made (Chen et al. 2008:415). Chen et al. (2008:416) were the first to simultaneously examine firm and partner level measures of auditor tenure. Previous studies have only focused on either one of these measures. Many studies report positive association between auditor tenure and audit quality (Myers, Myers & Omer 2003:790–793; Ghosh et al. 2005:609; Gul et al. 2007:129; Chen et al. 2008:439–440; Gul et al. 2009:272; Li 2010:239). Consistently, Chen et al. (2008:416) found performance adjusted discretionary accrual to decrease significantly as audit partner and audit firm tenure lengthens. This association is supported by Myers et al. (2003:790–793). They found audit quality, measured as discretionary accruals and current accruals, not to deteriorate with auditor tenure. Rather, they found longer auditor tenure to have a positive effect on audit quality.

Johnson, Khurana & Reynolds (2002:654–655) provided results, in favour of opponents of mandatory rotation. The quality of financial reports, measured as absolute value of the unexpected accruals, was discovered to be lower among clients having the same auditor for two to three years. Nevertheless, Gul et al. (2009:271) noted that lower audit quality in the initial years of the audit engagement can be offset by industry specialist auditors. Johnson et al. (2002:654–655) also failed to find evidence of declined financial reporting quality for auditor-client tenure of four or more years. Whereas Carey & Simnett (2006:673–674) found lower propensity to issue going concern opinion, in case of tenure over seven years, only applicable to non-Big 4 auditors in Australia. Li (2010:239) discovered that positive association between auditor tenure and reporting quality is only attributable to large firms

with economic importance. However, Vanstraelen (2002:183) found no evidence that the auditor's going-concern opinion decision is influenced by the length of the auditor-client relationship, year of the auditor engagement period, or auditor type, in private firm setting. According to Vanstraelen (2002:183), this alleviates the concern that auditors may not act independently.

Booker & Daniels (2011:80–81) provided evidence that loan officers' perception with respect to audit firm independence was enhanced by the presence of an audit firm rotation policy. Also, as capital market participants perceive longer tenure to enhance audit quality, jurors' see tenure as a factor increasing auditors' competence (Ghosh et al. 2005:609; Brandon & Mueller 2008:6). However, jurors' perception concerning auditor independence was discovered to decrease with tenure (Brandon & Mueller 2008:6). Consistently, the presence of rotation policy failed to enhance the perceived audit quality (Booker & Daniels 2011:81). Further, Deis & Giroux (1992:474) found audit quality to erode with the length of auditor tenure.

Zerni (2012:835) suggests that less non-audit services are purchased from new auditor until closer relationship is established. Consistently, as incumbent auditors learn about their client they can provide a wider range of consulting services and charge higher non-audit fees. Gul et al. (2007:121) argued, that 'a client would purchase non-audit services in the early years of an engagement and persuade the auditor not to conduct in-depth analyses that may uncover earnings management'. According to Gul et al. (2007:122 & 131), higher non-audit fees are associated with higher discretionary accruals when auditor tenure is short. The association between non-audit fees and auditor independence is also set to be contingent upon auditor tenure (Gul et al. 2007:134).

2.3.5. ROA

According to DeFond & Jiambalvo (1994:174), companies under financial distress are more inclined towards earnings manipulation. They discovered positive earnings management among firms violating debt covenants. Their study benefited from both, cross-sectional and time-series, models of accruals. Further, total abnormal and working capital accruals were discovered to be significantly positive in the year prior to the debt covenant violation. (DeFond & Jiambalvo 1994:174.) Moreover, a positive association between

financial problems and necessary level of audit testing has been discovered. This association results in higher audit fees through increased audit risk. (Defond et al. 2002:1268; Cameran 2005:134.) Consistently, Hogan & Wilkins (2008:229) found audit fees as a decreasing function of liquidity and profitability.

Many of the previous studies have used a profitability measure, return on assets (ROA), to reflect the financial state of the company (DeFond & Jiambalvo 1994; Firth 1997; Hogan & Wilkins 2008; Svanström 2012; Zerni 2012). Zerni (2012:835) found ROA to be negatively related with the level of non-audit services. A poorly performing company can be expected to demand more external consulting services in order to improve its profitability. However, poor financial performance may also increase the probability of illegal actions and controversial accounting methods in the client company which affects to agency costs. As a response to increased agency costs companies may attempt to protect their independence by using other than incumbent auditors as a provider of external consulting. (Firth 1997:13–14 & 16.)

2.3.6. Leverage

Leverage variable has also been widely used in previous studies (Firth 1997; Abbott et al. 2003b; Lim & Tan 2008; Svanström 2012; Zerni 2012). Leverage has been considered as one of the agency cost factors affecting on the level of consulting bought from the auditor (Firth 1997:18; Abbot et al. 2003b:227). Hence, previous studies have relied on the underlying assumption that leverage increases agency costs and this causes the non-audit fee ratio to decline (Abbott et al. 2003b:224).

Firth (1997:18) found negative association between debt to asset ratio and non-audit fee ratio. Zerni (2012:835) provided evidence in support for this association. Further, changes in long-term debt to asset ratio are found to positively correlate with changes audit quality (DeFond 1992:24–25). Consistently, theory suggests that increasing debt level results in a greater demand for monitoring (DeFond 1992:21). Firms with higher debt to capital ratio are also more likely to receive going concern opinion (Lim & Tan 2008:210).

2.3.7. Litigation risk

Strictness of country's legal environment has been discovered to affect audit fees through increased auditor effort (Choi et al. 2008:76 & 92). Francis & Wang (2008:158–160) discovered a positive association between the strictness of investor protection and audit quality among Big 4 firms. They reported income-decreasing abnormal accruals to decline as investor protection strengthens. This suggests that incentives for Big 4 auditors can be seen as a moderating variable for the association between investor protection and earnings quality. However, variation in the level of investor protection had no effect on earnings quality of non-Big 4 clients. (Francis & Wang 2008:185.) Choi et al. (2008:76–77) discovered convergence in the quality of audits offered by Big 4 and non-Big 4 auditors as legal liability regime strengthens.

The presence of litigation risk is expected to act as a 'disciplining mechanism' against fraudulent financial reporting and to reduce investors' concern about non-audit services provided by the auditor (Zerni 2012:823). According to Sharma et al. (2011:150), less litigious environment also enables researchers to conduct more 'powerful' tests on the association between client importance and earnings management. According to DeFond & Jiambalvo (1994:146), a going concern qualification implies higher likelihood of auditor litigation.

Countries can be classified with respect to the strictness of litigation environment. Corporate structure is seen to be a prominent factor affecting on this classification. In Taiwan, for example, companies must be formed as liability partnerships, whereas firms can be formed as limited liability companies in the US and in the UK respectively. Hence, Taiwanese companies are more likely to be sued compared to other countries. For example, Sweden can be classified to have a low litigation environment. (Chen et al. 2008:416; Choi et al. 2008:78–79; Zerni 2012:823.)

3. NON-AUDIT SERVICES

Non-audit services have received much regulatory attention during 21 -century (Securities and Exchange Commission 2000; European Commission 2010; European Commission 2011:8). Altogether, this can be as a result of drastic growth in the number of non-audit services, corporate failures and more recently financial crisis (Levitt 2000; Defond et al. 2002:1271; Li 2009:201–202; European Commission 2010:4; Lin & Hwang 2010:68; Quick 2012:17–18). Prior to the escalation of financial crisis non-audit fees for FTSE 250 companies averaged as 96% of audit fees (ICAEW 2007:9). However, this can be seen as a decline from 300% in 2002 (Beattie & Fearnley 2002:11). In the US over 50% of revenues received by the Big 4 auditors in 2000 were consulting services (Levitt 2000).

U.S. Securities and Exchange Commission (SEC) enacted legislation requiring firms to disclose their audit and non-audit fees with respect to proxy statements filed on or after February 5, 2001. This was to address the threat posed by non-audit fees to auditor independence. (Securities and Exchange Commission 2000; Abbot et al. 2003:23; Whisenant et al. 2003:723; Krishnan et al. 2005:112; Li 2009:201.) Specifically, legislation only requires disclosure of services provided by the incumbent auditor (Whisenant 2003:725-726).

In Finland, Kirjanpitoasetus (1997/1339) chapter 2 §7a requires companies to disclose the following information with respect to audit fees:

1) audit fees
2) actions prescribed by law or decree that is carried out by an auditor (Tilintarkastuslaki 2007/459 chapter 1 §1)
3) tax service
4) other services

Also, in order to avoid situations were auditor independence might be compromised restrictions have been made with respect to certain non-audit services. For example, SEC has enacted legislation that limits auditors in providing ‘financial information system design and implementation services’ to their audit clients. These include ‘hardware and software systems related to the audit client’s financial statements or accounting records’. In

providing these services auditors could be ‘placed in a position of making managerial decisions’ and subsequently auditing their own work (Securities and Exchange Commission 2000:(IV)(D)(4)(b)(ii); Li 2009:201). However, if certain conditions that ‘audit client’s management retains responsibility for decision-making authority over the client’s financial information systems’ are met, ‘a small entity could obtain financial information system design and implementation services’. (Securities and Exchange Commission 2000:(VI)(D)).

Given that, a complete ban on non-audit services would have eliminated these problems altogether, the existence of investors’ responsibility in evaluating the perceived quality of audit was recognised by the SEC. According to SEC, ‘investors will be able to evaluate for themselves whether the proportion of fees for audit and non-audit services causes them to question the auditor’s independence’. Whereas, accounting firms argue that imposing a ban on non-audit services would negatively affect their ‘access to technology, limit their understanding of their clients’ operations, and hurt their recruiting efforts.’ (Securities and Exchange Commission 2000:(IV)(D)(4)(b)(ii).)

Apart from the US, European Commission proposed prohibition on non-audit services in 2011 (European Commission 2011:8; Quick 2012:17–18). However, currently some European countries e.g. Sweden does not impose any specific restrictions on the auditors’ provision of non-audit services (Zerni 2012:823).

Empirical research concerning non-audit fees has historically been hindered by limited data availability (Pelham et al. 2001:1). However, these disclosure requirements have enabled researchers to study the effects of non-audit service fees on audit quality, and auditor’s independence (Pelham et al. 2001:1; Securities and Exchange Commission 2000). Although, inferences made upon these effects are limited to incumbent auditors (Whisenant 2003:725–726). Research with respect to this relation is discussed more closely in the next chapter.

3.1. The effects of NAS on audit quality

The relationship between provision of non-audit fees and audit quality has been widely studied (Francis 2004:357). It is in common for these studies to discover whether the

presence of non-audit services results in impaired auditor independence (Simunic 1984:679). Consistently, with difficulties to identify quality based measures, substitutes for audit quality are used instead (DeAngelo 1981a:184–185; Firth 1997:7; Balsam et al. 2003:71; 3; Watkins et al. 2004:155; Eilifsen & Willekens 2008). Auditor independence can be seen to reflect audit quality through measures presented previously; 'audit pricing, earnings management, and auditor reporting' (Eilifsen & Willekens 2008:4).

Audit quality research has mainly focused to provide evidence from the US (Frankel et al. 2002; Ashbaugh et al. 2003; Chung & Kallapur 2003; Lim & Tan 2008; Li 2009), although there is some evidence from the UK (Firth 1997; Ferguson et al. 2004) and elsewhere in Europe (Svanström 2012; Zerni 2012) and Asia-Pacific Region (Sharma & Sidhu 2001; Sharma et al. 2011; Knechel et al. 2012). In spite of great interest, empirical evidence over the association between non-audit services, audit quality and auditor independence is mixed (Pelham et al. 2001:3; DeFond et al. 2002:1248; Frankel et al. 2002:74; Krishnan et al. 2005:111; Svanström 2012:2).

Providing auditing and non–audit services to the same client can incur cost savings as the same client-specific information benefits the auditor by producing knowledge spillovers (Simunic 1984; Arruñada 1999:514). Knowledge spillovers can occur e.g. when 'information required to evaluate an internal control systems is largely identical to the one needed to improve it'. Cost savings can also occur in a contractual form while exchanging professional services. For example, necessary quality confirmation measures are not needed when non-audit services are provided by the incumbent auditor. Further, substantial competence is required when 'evaluating adequacy of provision for paying taxes', which enables the auditor providing non-audit services to 'form a better founded judgment regarding the client' and as such 'facilitates audit work'. (Arruñada 1999:514.)

Consistently, Chung & Kallapur (2003) found no association between audit fees and the absolute value of discretionary accruals. Also, Simunic (1984:696) suggested higher audit fees to result from knowledge spillover from management advisory service. However, Palmrose (1986:408 & 410) raised 'doubts about joint supply as an explanation for the positive relation between audit fees and non-audit service fees'. She found positive association between natural logarithm of non-audit fees provided by non-incumbent auditor and audit fees for incumbent auditor. After controlling for joint determination of the fees,

Whisenant (2003:734) found no evidence that non-audit fees would have direct influence on audit fees. While Knechel et al. (2012:72–73) suggested, higher audit fees to represent increased audit effort and greater risk to auditor. They discovered positive association between natural logarithm of audit fees and audit lag, where audit lag was the number of days between fiscal year end and audit report date. Palmrose (1986:410) discovered higher audit fees among clients purchasing accounting, non-accounting and tax related services. According to Svanström (2012:22), income-increasing accruals declined with the provision of accounting services**.** Also, tax and investment services were not significantly associated with positive accruals. Further, no association was discovered between non-audit services and income-decreasing accruals. (Svanström 2012:22.)

Also, non-audit fees can compromise auditor independence 'by making the auditor economically dependent on the client' 'and less willing to stand up to management pressure for a fear of losing their business' (DeFond et al. 2002:1252 & 1271). For example economic bond can be seen as an incentive for the auditor to acquiesce to client pressure via earnings management (Frankel et al. 2002:75). Hay et al. (2006:715) provided evidence supporting impairment of auditor independence in appearance. However, they found no evidence that auditors' independence of mind had declined. Hoitash et al. (2007:774) found positive association between total fees, audit fees, non-audit fees and the level of absolute discretionary accruals. A positive association was also discovered between total fees, audit fees and accruals quality, measured as standard deviation of accruals. Large standard deviation in accruals implies lower accruals quality (Hoitash et al. 2007:769). Their results suggest audit quality to decrease with total fees, and support the 'presence of an auditor dependency problem' (Hoitash et al. 2007:774 & 777). Further, Sharma et al. (2011:151) discovered non-audit to total audit fees ratio to be more significantly associated with income-increasing discretionary accruals. Also, Svanström (2012:22) found positive association between income-increasing accruals and provision of legal services. Further, in providing non-audit services, audit firms' are acting as both auditor and consultant, which poses a threat to auditor independence and auditor's objectivity (Simunic 1984:679; DeFond et al. 2002:1252). Moreover, risk of losing consulting revenues as a result of dismissal as auditor can create incentives towards untruthful reporting (Simunic 1984:680). Provision of non-audit services can also create a conflict of interests between the auditor and the client and impugn the reliability and accuracy of the audit as auditor is provided with the incentive not to report 'consulting deficiencies observed during the audit'.

(Simunic 1984:679.) Economic bond between the auditor and the client is set to further strengthen with quasi-rents (Frankel et al. 2002:72; Quick 2012:17–18). Despite the negative effects on audit quality, the provision of non-audit services can also impose the auditor to invest in reputational capital in order to protect its independence (Antle et al. 1997:9). According to Hay et al. (2006:728), no association between non-audit fees and qualified or modified audit opinion was found. This suggests that auditors are not more lenient to issues qualified or modified opinion to clients with higher non-audit fees.

3.2. Measures of NAS

Different measures of non-audit services have been adopted in order to study the relation between non-audit service fees and audit quality (Svanström 2012:14). One measure that has been widely used is the proportion of non-audit fees to total fees paid to incumbent auditor (Defond et al. 2002; Ashbaugh et al. 2003:612; Frankel et al. 2002; Hay et al. 2006; Krishnan et al. 2011:111; Sharma et al. 2011:151; Svanström 2012). According to Svanström (2012:14), non-audit fee ratio reflects auditor's incentives 'to adopt a client perspective on auditing'. This could result when auditor aims to preserve its position as a provider of lucrative non-audit services also in the future. Non-audit fee ratio also 'captures the relative level of information' gained in providing these services that could be utilized while providing statutory audit service. (Svanström 2012:14.) Krishnan et al. (2011:111) used non-audit fee ratio as a measure of auditor independence. Sharma et al. (2011:151) used this ratio to measure client importance. However, Ashbaugh et al. (2003:612) argues that 'the sum of audit and non-audit fees is the more appropriate measure of the economic dependence of the auditor on a client'. Hoitash et al. (2007:772 & 774) also employs total fees to reflect this dependency. Contrary, Frankel et al. (2002:73) suggests audit and non-audit fees to have different incentive effects. Thus, by using aggregated total fees, these effects cannot be discovered.

Chung & Kallapur (2003:932) used a ratio of client's total fees to audit firm's total revenues as a proxy for client importance. As a second measure of client importance they also employ a ratio of non-audit fees, from a single client, to the audit firm's total revenue. Non-audit service research also benefits from the use of natural logarithm of non-audit and audit fees as this captures the absolute level of fee dependency (DeFond et al. 2002:1256;

Hay et al. 2006; Svanström 2012:14). Finally, disaggregating non-audit fees to its components enables researchers to observe the relation between specific types of NAS and audit quality (Svanström 2012:14). Svanström (2012:10) specified several components of non-audit services, including accounting, tax, legal, investment- services.

Based on the discussion throughout this thesis, following hypotheses are formed:

H_0= there is no association between non-audit services or natural logarithm of audit fees and audit quality.

H_1= there is a positive association between non-audit services and audit quality.

H_2= there is a positive association between natural logarithm of audit fees and audit quality.

Next chapter begins the empirical part of this study. These hypotheses are further specified in chapter 4.2, which also describes regression models used.

4. EMPIRICAL RESEARCH

This chapter commences the empirical part of this study. This part further describes the research problem, hypothesis development, sample selection, and introduces the regression model and variables. The Jones model and the modified Jones, developed to measure audit quality, are also introduced in this chapter.

4.1. Earnings quality

In this study total and discretionary accruals are used as a measure of earnings quality. Following studies like Svanström (2012:12), discretionary accruals are estimated as the difference between total (actual) accruals and estimated expected accruals. Different models can be used to estimate expected accruals. Jones (1991) model, and its modification, is recognised among the most popular models (Bartov et al.2001:422). The Jones (1991) model for non-discretionary accruals in the event year is:

$$NDA_t = \alpha_1 \left[\frac{1}{A_{t-1}}\right] + \alpha_2 \left[\frac{\Delta REV_t}{A_{t-1}}\right] + \alpha_3 \left[\frac{PPE_t}{A_{t-1}}\right] \quad (1)$$

where NDA_t = non-discretionary accruals in year t scaled by lagged total assets;

A_{t-1} = lagged total assets

ΔREV_t = revenues in year t less revenues in year t–1

PPE_t = gross property, plant and equipment at the year t

$\alpha_1, \alpha_2, \alpha_3$ = firm-specific parameters

According to Bartov et al. (2001:426), estimates of the firm-specific parameters, a_1, a_2, a_3 can be obtained by applying ordinary least square (OLS) for the following model in the estimation period:

$$\frac{TA_t}{A_{t-1}} = a_1\left[\frac{1}{A_{t-1}}\right] + a_2\left[\frac{\Delta REV_t}{A_{t-1}}\right] + a_3\left[\frac{PPE_t}{A_{t-1}}\right] + \varepsilon_t \quad (2)$$

where a_1, a_2, a_3 = OLS estimates of α_1, α_2 and α_3

TA_t = total accruals in year t (profit or loss after tax- net cash flow from operations)

ε_t = the residual, which represents the firm-specific discretionary portion of total accruals

A modified version of Jones (1991) Model has also been created. According to Bartov et al. (2001:426), the Modified Jones (1991) Model is designed to improve the measurement of discretionary accruals when discretion is exercised over revenues. The Modified Jones (1991) model for non-discretionary accruals is:

$$NDA_t = \alpha_1\left[\frac{1}{A_{t-1}}\right] + \alpha_2\left[\frac{(\Delta REV_t - \Delta AR_t)}{A_{t-1}}\right] + \alpha_3\left[\frac{PPE_{ijt}}{A_{t-1}}\right] \quad (3)$$

where ΔAR_t = net receivables in year t less net receivables in year t–1

The only difference between these models is that in the Modified Jones Model 'the change in revenues is adjusted for the change in receivables in the event year' (Bartov et al. 2001:426). Also, estimates of $\alpha_1, \alpha_2, \alpha_3$ are obtained from the original Jones model, not from the modified model.

Prior studies have reported mixed results of the ability of different discretionary accruals models to separate discretionary and non-discretionary portions of accruals (Bartov et al. 2001:449–450). These studies have not found one superior discretionary accruals model. In spite of these results, Bartov et al. (2001:450) found that the Modified Jones Model, the Cross-sectional Jones Model and the Cross-sectional Modified Jones model are 'successful

in identifying an association between audit qualifications and discretionary accruals.' Also, cross-sectional versions of these models were better in 'detecting earnings management than their time-series counterparts' (Bartov et al. 2001:450). Based on these results a cross-sectional version of modified Jones (1991) model is used in this study.

A cross-sectional version of Modified Jones (1991) Model is applied by using industry and year specific parameter estimates $\alpha_1, \alpha_2, \alpha_3$ of equation (3). These parameter estimates 'are obtained by estimating equation (2) using data from all firms matched on year and two-digit SIC industry groupings'. (Bartov et al.2001:427.) The Cross-sectional version of Modified Jones (1991) Model for expected accruals for a company i in industry j is:

$$\frac{TA_{ijt}}{A_{ijt-1}} = \beta_{1jt}\left[\frac{1}{A_{ijt-1}}\right] + \beta_{2jt}\left[\frac{\Delta REV_{ijt} - \Delta AR_{ijt}}{A_{ijt-1}}\right] + \beta_{3jt}\left[\frac{PPE_{ijt}}{A_{ijt-1}}\right] + \varepsilon_{ijt} \qquad (4)$$

Sample firms have been divided in 4 industry groups as follows:

1: SIC 2000-4000: Manufacturing
2: 5000-6000: Wholesale trade
3: 7000-9000: Services
4: 1000-2000; 2911; 4000-5000: Others.

This simulates the grouping made by Svanström (2012:12). Choi et al. (2010:82) proposes SIC codes (6000–6999 and 4000–4999) to be removed 'due to the difficulty in measuring abnormal accruals for these firms'. However, when applied to Finnish environment this classification proposes unequal treatment between similar companies (e.g. Konecranes versus Cargotec or Sponda and Citycon versus Technopolis). Also, the number of companies with SIC codes between 4000–4999 included in the final data is modest (24). The sample selected for this study does not include any firms with SIC codes between 6000–6999. Final sample consist of 272 companies. Firms with limited data availability were removed from the sample. Table 1 shows companies deducted from the original sample. Also, companies included in the final regression model are shown in appendix 1.

Table 1. Companies included in the regression model.

Total number of companies available in Orbis database	375
Companies with limited data availability to measure discretionary accruals	-59
Companies with limited data availability for regression model	-28
Outliers excluded from the sample	-16
Total number of companies in analysis	272

4.2. Regression model and variables

A simple linear regression can be used to explain or predict one variable i.e. response variable as the other variable changes i.e. explanatory variable. Hence, 'a regression line is a straight line that describes how a response variable y changes as an explanatory variable x changes.' (Moore, McCabe & Craig 2012:108.) The following equation can be used to describe regression line:

$$y_t = \beta_0 + \beta_1 x_t + \varepsilon_t \quad (5)$$

Where β_0 is a constant parameter, equal to value of y when x = 0. β_0 describes when regression line intercepts the vertical axis. Regression coefficient β_1 reflects the average change in y when x increases by one unit (Heikkilä 2008:238: Moore et al. 2012:109). According to Moore et al. (2012:576.), 'residual represents the deviation of an individual observation from its subpopulation mean'.

A linear regression can also have more than one explanatory variable (Heikkilä 2008:238). According to Moore et al. (2012:576), statistical model for multiple linear regression is:

$$y_i = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \varepsilon_i \quad (6)$$

A multiple linear regression has to meet certain criteria. According to Heikkilä (2008:238 & 252) and Moore et al. (2012:108.), underlying assumptions in a regression model are:

- all necessary explanatory variables are included
- a linear dependency prevails between y and x
- there is no multicollinearity between explanatory variables
- response variable and residual follows normal distribution
- residual does not correlate with variables
- regression requires that we have an explanatory variable and a response variable, and one of the variables has to help to explain or predict the other

Aczel & Sounderpandian (2005:502) sums that a variable is independent when it follows normal distribution and there is no correlation between other variables. In order to investigate the association between audit quality and non-audit services following regression models are estimated:

$$TACC, DA = \beta_0 + \beta_1 LNTA + \beta_2 CFO + \beta_3 ROA + \beta_4 GROWTH + \beta_5 GEARING + \beta_6 BIG\ 4 + \beta_7 TENURE + \beta_8 LITIGATION + NASRATIO_9 + \varepsilon \quad (5)$$

$$TACC, DA = \beta_0 + \beta_1 LNTA + \beta_2 CFO + \beta_3 ROA + \beta_4 GROWTH + \beta_5 GEARING + \beta_6 BIG\ 4 + \beta_7 TENURE + \beta_8 LITIGATION + LNAF_9 + \varepsilon \quad (6)$$

where

TACC = total accruals

DA = absolute value of estimated total discretionary accruals;

LNTA	= natural logarithm of the book value of total assets at year end;
CFO	= cash flow from operations, scaled by total assets in the beginning of the year;
ROA	= return on assets (net income / total assets)* 100;
GROWTH	= growth rate of net sales during previous year;
GEARING	= ((non-current liabilities + loans) / shareholders funds)*100;
BIG 4	= 1 if a company has one of the Big 4 auditors in 2012 (Ernst & Young, Deloitte & Touche, KPMG, PwC), otherwise 0;
TENURE	= dummy variable describing the length of auditor client relationship. Variable is set to be 1, if auditor change has taken place in recent 4 years as calculated retrospectively from 2012, and 0 otherwise;
LITIGATION	= 1 if firm operates in high litigation risk industry (2833–2836, 3570–3577, 3600–3674, 5200–5961, 7370–7379, and 8731– 8734) otherwise 0;
NASRATIO	= proportion of non-audit fee compared with total fees paid to audit firm;
LNAF	= natural logarithm of audit fees paid to the incumbent auditor

Based on previous studies certain control variables are included into regression models. Natural logarithm of total assets, *LNTA*, is used to control for the size and complexity of the firm. Audit fees and audit quality have been found to increase with natural logarithm of total assets and the number of subsidiaries recorded. (Giroux 1996:66; Abbot et al. 2003b:227; Balsam et al. 2003:83; Whisenant 2003:737; Ferguson et al. 2004:832; Hogan & Wilkins 2008:229; Knechel et al. 2012:68–69; Svanström 2012:22.) There is also evidence to support a positive association between client firm size and opportunistic accounting (Ferguson et al. 2004:833).

In accordance with numerous studies, *CFO* and *ROA* are included to control for the financial state and performance of the company (Firth 1997; Ferguson et al. 2004; Balsam et al. 2003; Hogan & Wilkins 2008; Li 2009; Svanström 2012; Zerni 2012). As measured by these variables, companies with inferior financial state and lower performance figures have been discovered to associate with lower audit quality, greater inclination towards earnings manipulation and higher level of audit and non-audit fees (DeFond & Jiambalvo 1994:174; Ashbaugh et al. 2003:620; Balsam et al. 2003:83). Further, companies with prior year negative net income and lower ROA are more likely to receive a going-concern opinion (Li 2009:209). The simultaneous use of these two performance measures (*CFO* and *ROA*) can potentially cause problems of multicollinearity. In spite of these concerns, e.g. Ferguson et al. (2004:830) discovered that their results were not driven by multicollinearity. However, this is to be assessed individually.

Growth rate of net sales, *GROWTH*, during previous year is included to control for company growth (Chen et al. 2008:422). This is consistent with a number of other studies, albeit the variable used to measure sales varies across studies (Choi, Kim, Kim & Zang 2010:81; Krishnan et al. 2011:110).

Leverage is included in the regression model as it is expected to have an effect on the level of consulting bought from the auditor (Firth 1997:18; Abbot et al. 2003b:227). Specifically, non-audit fee ratio is expected to decline with leverage (Abbott et al. 2003b:224). *GEARING*, measured as debt to capital ratio, is used as a proxy for leverage. According to Lim & Tan (2008:210), companies with higher debt to capital ratio are more likely to receive going concern opinion. Consistently, Svanström (2012:22) discovered lower accounting and audit quality among highly leveraged firms, whereas, the results of Balsam et al. (2003:83) suggested opposite relationship between these variables.

BIG 4 variable, which describes whether the auditor is one of the Big 4 companies, is set to control for auditor characteristics. Empirical studies provide evidence that Big 4 auditors offer higher audit quality compared to non-Big 4 auditors (Chan et al. 1993; Becker et al. 1998; DeFond et al. 2002; Ireland & Lennox 2002; Hogan & Wilkins 2008; Li 2009). Also, auditor characteristics are discovered to have some effect on non-audit service purchase decision (e.g. Zerni 2012:836). A negative association between audit quality variable,

discretionary accruals, and BIG_4 control variable is expected. In other words, higher audit quality is expected among companies audited by big 4 firms.

TENURE is set to control for audit quality. A negative association has been discovered between auditor tenure and discretionary accruals (Johnson et al. 2002:654–655; Svanström 2012:21). Similarly, audit quality is expected to increases with tenure. Auditor tenure is also discovered to have some effect on the amount of consulting purchased from incumbent auditor (Zerni 2012:835). However, no prediction is made concerning the direction of this effect.

LITIGATION is included as a control variable. According to Frankel et al. (2002:88), Ashbaugh-Skaife et al. (2007:176), and Knechel et al. (2012:69–70), firms operating in the fields of biotechnology (2833–2836), computer equipment (3570–3577), electronics (3600–3674), retailing (5200–5961), and computer services (7370–7374) are subject to greater litigation risk. Moreover, Francis, Philbrick & Schipper (1994:144) adds SIC codes between 8731–8734 to biotechnology, and Krishnan et al. (2011:111) defines computer services as SIC codes between 7371–7379. Following these studies, SIC codes in the itemized list above are incorporated into regression model.

Research variables *NASRATIO* and *LNAF* are included in regression models. *NASRATIO* is included into the first regression model. According to Hay et al. (2006:728) auditors are not more lenient to issues qualified or modified opinion to clients with higher non-audit fees. According to Svanström (2012:22), audit quality was positively affected by the purchase of non-audit services. Consistently, a positive association has been discovered between certain non-audit services and audit fees. This also applies on the association between non-audit services bought from the non-incumbent auditor and the level of audit fees, paid to incumbent auditor, although, this is beyond the scope of this study (Palmrose 1986:408 & 410).

According to Simunic (1984:696), higher audit fees can be seen as a result of knowledge spillover from management advisory service. A natural logarithm of audit fees, *LNAF*, is included into the second regression model, as this captures the absolute level of fee dependency (DeFond et al. 2002:1256; Hay et al. 2006; Svanström 2012:14). It has been suggested that higher audit fees represent increased audit effort (Knechel et al. 2012:72–

73). Numerous studies have proposed audit fees to reflect higher audit quality (Klein & Leffler 1981:634; Simunic 1984:681; Deis & Giroux 1996:55; Moizer et al. 1997:62 & 72). Consistently, Chung & Kallapur (2003) discovered no deterioration on audit quality in the presence of higher audit fees. Based on arguments discussed throughout this thesis following hypotheses are formed:

H_0= there is no association between non-audit services or natural logarithm of audit fees and audit quality.

H_1= the level of accruals has decreased as the proportion of non-audit fees to total audit fees has increased for Finnish publicly listed companies in a period of 2010–2012. Hence, the level of non-audit services provided by the incumbent auditor has had a positive effect on audit quality.

H_2= the level of accruals has decreased as natural logarithm of audit fees paid to incumbent auditor has increased for Finnish publicly listed companies in a period of 2010–2012. Hence, the level of audit fees has had a positive effect on audit quality.

5. RESULTS

This chapter represents the main results of this study. PASW Statistics 18.0 program was used to calculate the results. Data for publicly listed companies in Finland for a period of three years, 2012, 2011 and 2010 was gathered mainly from Orbis-database. Data concerning audit fees, auditor name, and auditor tenure was acquired from Thompson-database. Information on total auditor fees paid to incumbent auditor was acquired from Worldscope-database.

5.1. Descriptive statistics

Table 2 represents descriptive statistics for variables included in the regression model. Table 2 introduces total number of observations, minimum, maximum, mean, median, and standard deviation values for each variable, explained above. A company was only included into the final regression model if data was available for every one of these variables. The total number of observations is 272.

Both measures of audit quality, total accruals (*TACC*) and discretionary accruals (*DA*), had a negative mean. In terms of non-audit fee ratio, a maximum ratio of 95% was observed. This means that audit fees represented only 5% of total fees paid to incumbent auditor, and hence can be considered exceptionally high. The *NASRATIO* was discovered to have a mean of 34%. Expectedly, a large number of the firms, 96%, had a Big 4 auditor.

Also, a standard deviation, which describes the average distance of observations from the mean, was reported for each variable. This is the most important and widely used measure of dispersion. (Aczel & Sounderpandian 2005:30–31; Heikkilä 2008:86.) Variables *DA*, *NASRATIO*, *CFO*, *ROA*, *GEARING* had a relatively large standard deviation with respect to mean and median values of these variables.

Table 2. Descriptive statistics.

Variable	N	Minimum	Maximum	Mean	Median	Std. Deviation
TACC	272	-0,40	0,16	-0,46	-0,40	0,07
DA	272	-0,43	0,54	-0,01	-0,02	0,13
NASRATIO	272	0,00	0,95	0,34	0,33	0,21
LNAF	272	9,33	21,60	12,41	12,21	1,49
LNTA	272	15,67	24,39	19,63	19,39	1,94
CFO	272	-0,23	0,30	0,07	0,07	0,09
ROA	272	-65,93	26,89	1,89	3,40	10,17
GEARING	272	1,08	758,20	79,46	66,61	76,35
GROWTH	272	0,05	2,10	1,09	1,08	0,18
BIG4	272	0	1	0,96	1,00	0,21
TENURE	272	0	1	0,20	0,00	0,40
LITIGATION	272	0	1	0,23	0,00	0,42

5.2. Correlation between variables

Correlation is a measure of linear relationship between two variables. Correlation is described by the correlation coefficient that can take any value from -1, through 0, to 1. No correlation exists between two variables when correlation coefficient is zero. A perfect positive and negative correlation is indicated by correlation coefficient 1 and -1, respectively. A positive correlation causes parallel movement of variables, whereas, variables move to the opposite direction when correlation is negative. (Aczel & Sounderpandian 2005:458–459.)

In this study a Pearson's correlation matrix, table 3, is used in order to determine the extent of correlation between variables. Also, any indication of multicollinearity between two variables can be discovered from the correlation matrix. A strong correlation between variables can cause a problem of multicollinearity, as these variables contain much of the same information. A correlation coefficient of 0,7 can be considered as a threshold for strong correlation, whereas a coefficient of 0,3 implicates a relatively weak correlation between variables. (Aczel & Sounderpandian 2005:459 & 570.)

According to these thresholds, a strong correlation of 0,817 exists between variables *LNAF* and *LNTA*. A strong correlation of 0,613 is also discovered between variables *ROA* and *CFO*. In spite of the strong correlation indicated, a problem of multicollinearity may not arise as 'multicollinearity may have been caused by more complex correlation in the data than just the pairwise correlation.' Whether multicollinearity problem exists can be further analysed by using variance inflation factors (VIF). (Aczel & Sounderpandian 2005:571).

Table 3. Pearson correlation.

	Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1.	TACC	1											
2.	DA	.396**	1										
3.	NASRATIO	-.006	.018	1									
4.	LNAF	.119*	.133*	-.051	1								
5.	LNTA	.118	.071	.129*	.817**	1							
6.	ROA	.496**	.246**	-.011	.121*	.194**	1						
7.	CFO	-.344**	-.068	-.010	.006	.084	.613**	1					
8.	GEARING	-.063	-.001	.000	.044	.101	-.240**	-.236**	1				
9.	BIG4	-.015	-.010	-.020	.070	.040	-.001	.038	-.051	1			
10.	TENURE	-.035	.095	.030	.027	.039	.000	.020	.066	-.026	1		
11.	LITIGATION	-.149*	-.026	-.100	-.190**	-.322**	.002	.175**	-.191**	.118	-.038	1	
12.	GROWTH	.135*	.587**	.043	-.037	-.060	.142*	.028	.110	-.081	.032	-.062	1

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

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

Table 4. Variable collinearity.

	Model 1&3		Model 2&4	
Variable	Tolerance	VIF	Tolerance	VIF
LNTA	.817	1.224	.282	3.552
CFO	.587	1.705	.577	1.732
ROA	.561	1.783	.562	1.778
GROWTH	.931	1.075	.931	1.074
GEARING	.867	1.154	.862	1.160
BIG4	.973	1.028	.971	1.030
TENURE	.991	1.009	.992	1.008
LITIGATION	.815	1.226	.800	1.249
LNAF			.316	3.160
NASRATIO	.973	1.028		

VIF indicates the effect of multicollinearity on the variance of the regression coefficient estimators (Aczel & Sounderpandian 2005:572). In other words, increase in VIF causes the variance of the regression coefficient to increase. According to Aczel & Sounderpandian (2005:573), VIF -statistic over 5 indicates that some degree of multicollinearity exists. Hence, no indication of remarkable VIF -statistics is discovered, as shown in table 4. Two variables (*LNTA*, *LNAF*) with VIF -values over 3 have been discovered, however, these are within tolerable exception, absolute value of VIF -statistic is under 5.

Two variables with high correlation coefficients and VIF-values over 5 were removed from the original regression model. A *LOSS* variable, indicating whether a company made a loss or a profit in the year 2012, and natural logarithm of subsidiaries recorded, *SQSUB*, were removed from the original regression model, so, that this increased adjusted R^2 of the regression model. This was an approach suggested by Aczel & Sounderpandian (2005:575). It is expected that *SQSUB* contained much of the same information as *LNTA* with respect to

complexity of a company.

In addition to variance inflation factor, a complementary measure of tolerance can be used to assess multicollinearity between variables. Tolerance can be calculated as 1/VIF, or vice versa. According to Metsämuuronen (2002:29), tolerance approaching zero is a predictor of multicollinearity problem. Unsurprisingly, the lowest values for tolerance can be detected in respect to same variables with increased VIF-statistics. In terms of variable collinearity, models 1& 3 seem to be more reliable in comparison to models 2 & 4. Although, based on these statistics none of the models can be held as unreliable.

5.3. Regression results

The regression results for this study are presented in table 5. The table includes results for all 4 regression models used in this study. Models 1 & 3 have total accruals as a dependent variable, whereas, models 2 & 4 have discretionary accruals as a dependent variable. Table 5 reports correlation coefficients and p-values for each variable. Adjusted multiple coefficient of determination (adjusted R^2) and F-values are also reported for each model.

According to Aczel & Sounderpandian (2005:289), a p-value is a probability that null hypothesis is rejected based on the sample evidence while the null hypothesis is actually true. In other words, 'p-value is credibility rating of H_0 with respect to evidence provided.' 'A p-value of zero means H_0 is certainly false and a p-value of 1 means that H_0 is certainly true.' As presented at the end of chapter 4.2 null hypothesis is described as no association between non-audit services or natural logarithm of audit fees and audit quality. With respect to the method used, this means that regression coefficients should be near zero, which implicates that independent variables does no facilitate to explain dependent variables.

Evidence gathered provides support that H_0 is nearly true with respect to relation between *NASRATIO* and *TACC*. This also applies on the association between *NASRATIO* and discretionary accruals. Consistently, a p-value of 0.566 for the relation between *LNAF* and *TACC* support acceptance of H_0. A p-value of 0.049 indicates that audit fees variable, *LNAF*, is significant with 5% significance level. Although correlation coefficient for *LNAF* deviates from zero, no remarkable correlation seems to exist between *LNAF* and

discretionary accruals. This does not provide sufficient evidence to reject null hypothesis with respect to fourth model used.

A p-value near zero, presented in the table 5, for the F-test indicates that at least one correlation coefficient deviates from zero and hence, at least one independent variable facilitates to explain audit quality. This also the case for *LNAF* variable, however, there are other variables with more significant correlations. With significance level of .05, *CFO* and *ROA* variables seem to be significant in all models. Also, *GROWTH* is indicated to be significant in models 3 & 4. However, only *CFO* and *GROWTH* variables have strong correlation with audit quality. Results in table 4 indicate that *CFO* variable has a positive association with audit quality, whereas, a negative association is discovered between audit quality and *GROWTH* variable. These results are consistent with a number of studies. *CFO* was included to control for the financial state of a company, which has in previous studies been discovered to associate with lower audit quality, greater inclination towards earnings manipulation and higher level of audit and non-audit fees (DeFond & Jiambalvo 1994:174; Ashbaugh et al. 2003:620; Balsam et al. 2003:83). Findings with regards to negative association between discretionary accruals and growth rate of net sales, *GROWTH*, are also consistent with previous studies (Choi et al. 2010:89; Krishnan et al. 2011:116). *TENURE* variable was significant with 10% significance level in models 3 & 4, however, there was only very weak correlation between auditor tenure and discretionary accruals. In other words, due to the variable setting there was a weak positive correlation between auditor tenure and audit quality. If conclusions are to be made, this indicates that auditor tenure does not have deteriorating effect on audit quality, although, no conclusions with regarding increasing effect can either be asserted. Unexpectedly, BIG 4 variable was not significant in any of the regression models used.

The multiple coefficient of determination indicates the proportion of variation in the dependent variable that can be explained by independent variables in the regression model. R^2 is a useful measure of performance of a multiple regression model, and describes how well the regression model fits the data. R^2 is reported as percentages. However, it does have some limitations. R^2 increases with the number of variables in the regression model. This can have distortive effect on predictions made based on regression model. Therefore, adjusted multiple coefficient of determination is introduced. Adjusted R^2 is corrected for the degrees of freedom. Apart from its counterpart, adjusted R^2 does not always increase

with the number of new variables entered into the regression equation. (Aczel & Sounderpandian 2005:511–512.)

According to table 5, 92 % and 43 % of the variation in total accruals and discretionary accruals, respectively, can be explained by independent variables in the regression model. Based on these figures, it can be said that variation in total accruals are explained comprehensively by the regression model. The percentage of variation explained by models 3 & 4 can be held acceptable, although, variation of dependent variable is not as comprehensively explained as in models 1 & 2.

Table 5. Regression results.

	TOTAL ACCRUALS (TACC)		DISCRETIONARY ACCRUALS (DA)	
Variable	Model 1 coeff.(p-value)	Model 2 coeff.(p-value)	Model 3 coeff.(p-value)	Model 4 coeff.(p-value)
CONSTANT	-.008 (.652)	-.009 (.618)	-.574 (.000)	-.561 (.000)
NASRATIO	.000 (.948)		-.007 (.798)	
LNAF		-.001 (.566)		.014 (.049)
LNTA	-.050 (.939)	.000 (.677)	.007 (.054)	-.003 (.628)
CFO	-.859 (.000)	-.860 (.000)	-.496 (.000)	-.473 (.000)
ROA	.008 (.000)	.008 (.000)	.004 (.000)	.004 (.000)
GROWTH	.004 (.545)	.004 (.527)	.399 (.000)	.395 (.000)
GEARING	-.030 (.070)	-.030 (.064)	-.100 (.240)	-.080 (.316)
BIG4	.008 (.188)	.008 (.178)	.022 (.457)	.019 (.512)
TENURE	-.002 (.501)	-.002 (.500)	.028 (.060)	.028 (.059)
LITIGATION	.004 (.238)	.004 (.208)	.026 (.100)	.021 (.171)
F-value (sig)	345.70 (.000)	346.17 (.000)	23.84 (.000)	24.62 (.000)
Adjusted R^2	.920	.920	.431	.440

6. CONCLUSIONS

The purpose of this thesis was to examine the effect of non-audit fees on audit quality. Specifically, the aim was to investigate whether the auditor independence is impaired by the presence of non-audit services. This is an issue also addressed by the regulators, both in the US and in Europe. Auditors' provision of certain non-audit services to their audit clients have been constrained in the US. Also, European Commission has proposed a prohibition of non-audit services to audit clients. (Securities and Exchange Commission 2000; Abbott et al. 2003a:23; Whisenant et al. 2003:723; Krishnan et al. 2005:112; Li 2009:201; European Commission 2011:8; Quick 2012:17–18.)

Currently, European parliament endorsed commissions' proposal that included e.g. mandatory rotation requirements and new requirements with respect to auditor independence. According to new rules, 'EU audit firms will be prohibited from providing several non-audit services to their clients, including tax advisory services that directly affect the company's financial statements or services linked to the client's investment strategy.' Also, 'a cap of 70%, calculated as a three-year average at the group level, on the fees generated for non-audit services was endorsed. New rules are yet to be approved by the European Council of Ministers. Once approved, these restrictions are to take effect within 3 years. (European Commission Memo 2013; European Commission Statement 2014; European Union Press Release 2014.)

As a result of regulators attention numerous studies have been conducted in order to study the relationship between non-audit fees and audit quality (Francis 2004:357; Lim & Tan 2008:200; Li 2009:202). These studies have typically used 'audit pricing, earnings management, or audit reporting' as a proxy for audit quality (DeAngelo 1981a:184–185; Firth 1997:7; Balsam et al. 2003:71; Eilifsen & Willekens 2008:3–4). Studies have revealed audit quality to depend upon several factors e.g. agency costs (DeFond 1992; Svanström 2012), auditor characteristics (Big 4 auditor) (Chan et al. 1993; Becker et al. 1998; Ireland & Lennox 2002; Carey & Simnett 2006; Van Tendeloon & Vanstraelen 2008; Li 2009), size (Giroux 1996; Abbot et al. 2003b; Whisenant 2003), tenure (Johnson et al. 2002; Gul et al. 2007; Chen et al. 2008; Gul et al. 2009; Li 2010), financial distress (DeFond & Jiambalvo 1994; Defond et al. 2002; Cameran 2005; Hogan & Wilkins 2008), leverage (DeFond 1992; Lim & Tan 2008), and litigation risk (Choi et al. 2008; Francis & Wang 2008). However,

empirical evidence over the association between non-audit services, audit quality and auditor independence is mixed (Pelham et al. 2001:3; DeFond et al. 2002:1248; Frankel et al. 2002:74; Krishnan et al. 2005:111; Svanström 2012:2). On one hand, studies like (Simunic 1984:696; Palmrose 1986:410–411; Chung & Kallapur 2003; Svanström 2012:22) found non-audit services to have a positive effect on audit quality. On the other hand, studies like (Hay et al. 2006:715; Hoitash et al. 2007:774; Svanström 2012:22) found non-audit fees to have a negative effect on audit quality. These results highlight the controversy over the issue.

The empirical part of this study was conducted in a Finnish publicly listed company environment. Data for the 4 regression models used was gathered through a time period of three years, between 2010 and 2012. A modified Jones model was utilized to define audit quality measures for the regression models. Regression models were constructed to measure the effect of non-audit fee ratio and natural logarithm of audit fees on total and discretionary accruals. In general, regression models explained 92 % and 43 % of the variation in total accruals and discretionary accruals, respectively.

Research hypotheses H_1 and H_2 were rejected and null hypothesis accepted with respect to relation between audit quality and audit fee measures used. An audit fee measure, *LNAF*, was significant with respect to fourth model, however, no correlation was discovered between *LNAF* and discretionary accruals. Control variables *CFO* and *GROWTH* had a strong correlation with audit quality. Unexpectedly, BIG 4 variable was not significant in any of the regression models used. Also, very weak positive correlation was discovered between auditor tenure and audit quality.

In the light of the above, it could be concluded that further studies are needed in order to establish a comprehensive understanding whether the provision of non-audit services to audit clients impair auditor independence. Also, due to a limited number of studies, one fruitful avenue for future research could consider the effect of specific type of non-audit services e.g. tax services on audit quality (Svanström 2012:2).

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APPENDICES

Appendix 1. Companies included in the final regression model.

Company	Year	Industry group
AHLSTROM OYJ	2011	1
AHLSTROM OYJ	2010	1
ALMA MEDIA OYJ	2012	1
ALMA MEDIA OYJ	2011	1
ALMA MEDIA OYJ	2010	1
AMER SPORTS OYJ	2012	1
AMER SPORTS OYJ	2011	1
AMER SPORTS OYJ	2010	1
APETIT OYJ	2012	1
APETIT OYJ	2011	1
APETIT OYJ	2010	1
ASPOCOMP GROUP OYJ	2012	1
ASPOCOMP GROUP OYJ	2010	1
ATRIA OYJ	2012	1
ATRIA OYJ	2011	1
ATRIA OYJ	2010	1
BIOHIT OYJ	2012	1
BIOHIT OYJ	2010	1
CENCORP OYJ	2011	1
COMPONENTA OYJ	2012	1
COMPONENTA OYJ	2011	1
COMPONENTA OYJ	2010	1
CRAMO OYJ	2012	1
CRAMO OYJ	2011	1
CRAMO OYJ	2010	1
EFORE OYJ	2012	1
EFORE OYJ	2011	1
EFORE OYJ	2010	1
ELECSTER OYJ	2012	1
ELECSTER OYJ	2011	1
ELECSTER OYJ	2010	1
ETTEPLAN OYJ	2012	1
ETTEPLAN OYJ	2011	1
EXEL COMPOSITES OYJ	2012	1

EXEL COMPOSITES OYJ	2011	1
EXEL COMPOSITES OYJ	2010	1
FISKARS OYJ ABP	2012	1
FISKARS OYJ ABP	2011	1
FISKARS OYJ ABP	2010	1
GLASTON OYJ ABP	2012	1
GLASTON OYJ ABP	2011	1
GLASTON OYJ ABP	2010	1
HKSCAN OYJ	2012	1
HKSCAN OYJ	2011	1
HKSCAN OYJ	2010	1
HONKARAKENNE OYJ	2011	1
HONKARAKENNE OYJ	2010	1
HUHTAMAKI OYJ	2012	1
HUHTAMAKI OYJ	2011	1
HUHTAMAKI OYJ	2010	1
ILKKA-YHTYMA OYJ	2012	1
ILKKA-YHTYMA OYJ	2011	1
ILKKA-YHTYMA OYJ	2010	1
KEMIRA OYJ	2012	1
KEMIRA OYJ	2011	1
KEMIRA OYJ	2010	1
KESKISUOMALAINEN OYJ	2012	1
KESKISUOMALAINEN OYJ	2011	1
KESKISUOMALAINEN OYJ	2010	1
KESLA OYJ	2012	1
KESLA OYJ	2011	1
KONE OYJ	2012	1
KONE OYJ	2011	1
KONE OYJ	2010	1
KONECRANES OYJ	2012	1
KONECRANES OYJ	2011	1
KONECRANES OYJ	2010	1
MARIMEKKO OYJ	2012	1
MARIMEKKO OYJ	2011	1
MARIMEKKO OYJ	2010	1
MARTELA OYJ	2012	1
MARTELA OYJ	2011	1
MARTELA OYJ	2010	1
METSA BOARD OYJ	2012	1

METSA BOARD OYJ	2011	1
METSA BOARD OYJ	2010	1
METSO OYJ	2012	1
METSO OYJ	2011	1
METSO OYJ	2010	1
NOKIA OYJ	2012	1
NOKIA OYJ	2011	1
NOKIA OYJ	2010	1
NOKIAN RENKAAT OYJ	2012	1
NOKIAN RENKAAT OYJ	2011	1
NOKIAN RENKAAT OYJ	2010	1
NURMINEN LOGISTICS OYJ	2012	1
NURMINEN LOGISTICS OYJ	2011	1
NURMINEN LOGISTICS OYJ	2010	1
OKMETIC OYJ	2012	1
OKMETIC OYJ	2011	1
OKMETIC OYJ	2010	1
OLVI OYJ	2012	1
OLVI OYJ	2011	1
OLVI OYJ	2010	1
ORION OYJ	2012	1
ORION OYJ	2011	1
ORION OYJ	2010	1
OUTOKUMPU OYJ	2012	1
OUTOKUMPU OYJ	2011	1
OUTOKUMPU OYJ	2010	1
PONSSE OYJ	2012	1
PONSSE OYJ	2011	1
RAISIO OYJ	2012	1
RAISIO OYJ	2011	1
RAISIO OYJ	2010	1
RAPALA VMC OYJ	2012	1
RAPALA VMC OYJ	2011	1
RAPALA VMC OYJ	2010	1
RAUTARUUKKI OYJ	2012	1
RAUTARUUKKI OYJ	2011	1
RAUTARUUKKI OYJ	2010	1
RAUTE OYJ	2011	1
RAUTE OYJ	2010	1
SAGA FURS OYJ	2012	1

SAGA FURS OYJ	2011	1
SANOMA OYJ	2012	1
SANOMA OYJ	2011	1
SANOMA OYJ	2010	1
SIEVI CAPITAL OYJ	2012	1
SIEVI CAPITAL OYJ	2011	1
SIEVI CAPITAL OYJ	2010	1
STORA ENSO OYJ	2012	1
STORA ENSO OYJ	2011	1
STORA ENSO OYJ	2010	1
SUOMINEN OYJ	2012	1
SUOMINEN OYJ	2011	1
SUOMINEN OYJ	2010	1
TALENTUM OYJ	2012	1
TALENTUM OYJ	2010	1
TELESTE OYJ	2012	1
TELESTE OYJ	2011	1
TELESTE OYJ	2010	1
TIIMARI OYJ	2012	1
TIIMARI OYJ	2011	1
TIIMARI OYJ	2010	1
TIKKURILA OYJ	2012	1
TIKKURILA OYJ	2011	1
TULIKIVI OYJ	2012	1
TULIKIVI OYJ	2011	1
TULIKIVI OYJ	2010	1
UPM-KYMMENE OYJ	2012	1
UPM-KYMMENE OYJ	2011	1
UPM-KYMMENE OYJ	2010	1
UPONOR OYJ	2012	1
UPONOR OYJ	2011	1
UPONOR OYJ	2010	1
VAAHTO GROUP PLC OYJ	2011	1
VACON OYJ	2012	1
VACON OYJ	2011	1
VAISALA OYJ	2012	1
VAISALA OYJ	2011	1
VAISALA OYJ	2010	1
WARTSILA OYJ	2012	1
WARTSILA OYJ	2011	1

WARTSILA OYJ	2010	1
YLEISELEKTRONIIKKA OYJ	2012	1
YLEISELEKTRONIIKKA OYJ	2011	1
YLEISELEKTRONIIKKA OYJ	2010	1
ASPO OYJ	2012	2
ASPO OYJ	2011	2
ASPO OYJ	2010	2
KESKO OYJ	2012	2
KESKO OYJ	2011	2
ORIOLA-KD OYJ	2012	2
ORIOLA-KD OYJ	2011	2
ORIOLA-KD OYJ	2010	2
PANOSTAJA OYJ	2012	2
PANOSTAJA OYJ	2011	2
PANOSTAJA OYJ	2010	2
STOCKMANN OYJ ABP	2012	2
STOCKMANN OYJ ABP	2011	2
STOCKMANN OYJ ABP	2010	2
TAKOMA OYJ	2012	2
TAKOMA OYJ	2011	2
TAKOMA OYJ	2010	2
WULFF-YHTIOT OYJ	2012	2
WULFF-YHTIOT OYJ	2011	2
WULFF-YHTIOT OYJ	2010	2
AFFECTO OYJ	2012	3
AFFECTO OYJ	2011	3
BASWARE OYJ	2012	3
BASWARE OYJ	2011	3
BASWARE OYJ	2010	3
COMPTEL OYJ	2012	3
COMPTEL OYJ	2011	3
COMPTEL OYJ	2010	3
DIGIA OYJ	2012	3
DIGIA OYJ	2011	3
DIGIA OYJ	2010	3
DOVRE GROUP OYJ	2012	3
DOVRE GROUP OYJ	2011	3
DOVRE GROUP OYJ	2010	3
ELEKTROBIT OYJ	2012	3
ELEKTROBIT OYJ	2011	3

ELEKTROBIT OYJ	2010	3
F-SECURE OYJ	2012	3
F-SECURE OYJ	2011	3
F-SECURE OYJ	2010	3
INNOFACTOR OYJ	2012	3
INNOFACTOR OYJ	2011	3
IXONOS OYJ	2012	3
IXONOS OYJ	2011	3
ORAL HAMMASLAAKARIT OYJ	2012	3
ORAL HAMMASLAAKARIT OYJ	2011	3
ORAL HAMMASLAAKARIT OYJ	2010	3
POYRY OYJ	2012	3
POYRY OYJ	2011	3
POYRY OYJ	2010	3
QPR SOFTWARE OYJ	2012	3
QPR SOFTWARE OYJ	2011	3
RAMIRENT OYJ	2012	3
RAMIRENT OYJ	2011	3
REVENIO GROUP OYJ	2011	3
SOLTEQ OYJ	2012	3
SOLTEQ OYJ	2011	3
SSH COMMUNICATIONS SECURITY OYJ	2012	3
SSH COMMUNICATIONS SECURITY OYJ	2011	3
SSH COMMUNICATIONS SECURITY OYJ	2010	3
STONESOFT OYJ	2012	3
STONESOFT OYJ	2011	3
STONESOFT OYJ	2010	3
TECHNOPOLIS OYJ	2012	3
TECHNOPOLIS OYJ	2011	3
TECHNOPOLIS OYJ	2010	3
TIETO OYJ	2012	3
TIETO OYJ	2011	3
TIETO OYJ	2010	3
TRAINERS' HOUSE OYJ	2012	3
TRAINERS' HOUSE OYJ	2011	3
TRAINERS' HOUSE OYJ	2010	3
CARGOTEC OYJ	2012	4
CARGOTEC OYJ	2011	4
CARGOTEC OYJ	2010	4
ELISA OYJ	2012	4

ELISA OYJ	2011	4
ELISA OYJ	2010	4
FINNAIR OYJ	2012	4
FINNAIR OYJ	2011	4
FINNAIR OYJ	2010	4
FINNLINES OYJ	2012	4
FINNLINES OYJ	2011	4
FINNLINES OYJ	2010	4
FORTUM OYJ	2012	4
FORTUM OYJ	2011	4
FORTUM OYJ	2010	4
LASSILA & TIKANOJA OYJ	2012	4
LASSILA & TIKANOJA OYJ	2011	4
LASSILA & TIKANOJA OYJ	2010	4
LEMMINKAINEN OYJ	2012	4
LEMMINKAINEN OYJ	2011	4
LEMMINKAINEN OYJ	2010	4
NESTE OIL OYJ	2012	4
NESTE OIL OYJ	2011	4
NESTE OIL OYJ	2010	4
OUTOTEC OYJ	2012	4
OUTOTEC OYJ	2011	4
OUTOTEC OYJ	2010	4
SRV YHTIOT OYJ	2012	4
SRV YHTIOT OYJ	2011	4
SRV YHTIOT OYJ	2010	4
TECNOTREE OYJ	2012	4
TECNOTREE OYJ	2011	4
TECNOTREE OYJ	2010	4
TURVATIIMI OYJ	2012	4
TURVATIIMI OYJ	2011	4
TURVATIIMI OYJ	2010	4
VIKING LINE ABP	2012	4
VIKING LINE ABP	2011	4
VIKING LINE ABP	2010	4
YIT OYJ	2012	4
YIT OYJ	2011	4
YIT OYJ	2010	4