

The Impact of Non-audit Services on Going Concern Opinions Revisited: The Case of Triennially Inspected Audit Firms

Ulrike Thürheimer

Supervisor: Caren Schelleman & Ann Vanstraelen

Abstract

The validity of information contained in financial statements is an important concern for users of these statements. Validity can only be achieved through independent attestation of financial statements by auditors. Hence, auditor independence has been a concern of regulators for a long time. Specifically, the provision of non-audit services by auditors is assumed to create economic dependence of auditors on clients and therefore impairs auditor independence. This paper examines whether the provision of non-audit services by triennially inspected audit firms impairs audit quality, measured as the propensity to issue a going concern opinion (GCO) for the time period 2004 - 2006. In addition, it is examined whether the association between non-audit service fees and the propensity to issue a GCO is stronger for triennially inspected audit firms that receive a deficient inspection report from the PCAOB than for triennially inspected audit firms that receive a clean inspection report from the PCAOB. This study does not find support for either of these hypotheses. The relationship between non-audit service fees and the likelihood of issuing a GCO is insignificant for the sample of triennially inspected firms. In addition, the going concern decision by triennially inspected auditors is not influenced by the outcome of their inspection report and the association between NAS and GCO is not stronger for firms with a deficient inspection report compared to those with a clean inspection report. The study does, however, find a significantly positive relationship between the magnitude of audit fees and total fees and the likelihood of a GCO.

1 Introduction

Regulators have long been concerned with auditor independence. As outlined by the Securities and Exchange Commission (SEC) (2000), regulators suspect that auditors providing audit services in combination with non-audit services (NAS) to their clients risk their independence by becoming financially dependent on clients and therefore less objective. In addition, the SEC (2000) argued that the provision of NAS put auditors in non-audit roles, which decreases their objectivity and professional skepticism. Prior research on whether the provision of NAS actually impairs independence and audit quality, measured as the propensity to issue a going concern opinion (GCO), has found mixed evidence in the U.S. (e.g. DeFond et al., 2002; Geiger & Rama, 2003; Li, 2009; Geiger & Blay, 2012). Nevertheless, regulators still seem to insist on a relationship between the provision of NAS and audit quality, as evidenced by the introduction of the Sarbanes-Oxley Act (SOX) in the U.S. in 2002, or more recently by a proposal on 'specific requirements regarding statutory audit of public-interest entities' in the EU in 2011, which suggests a prohibition for auditors to directly or indirectly provide NAS to public interest entities they are auditing (European Commission, 2011). For this reason, the question whether NAS actually impair auditor independence is still highly relevant for auditors, the firms that are being audited and especially users of financial statements, as they seek information validity of financial statements. Validity can only be achieved through auditors that attest financial statements independently. Previous studies on the relationship between NAS and the propensity to issue a GCO have included GCOs of audit firms of various sizes. However, it has been established that small audit firms generally have lower audit reporting quality than large firms (Geiger & Rama, 2006). Small audit firms are inspected on a triennial basis by the Public Company Accounting Oversight Board (PCAOB).

Hence, this paper examines whether the provision of NAS by triennially inspected audit firms impairs audit quality, measured as the propensity to issue a GCO. In addition, it is argued that the outcome of the PCAOB's audit quality inspection reports, clean or deficient, might be a factor that mitigates the relationship between provision of NAS and GCOs. For this reason, it is tested whether the association between non-audit service fees and the propensity to issue a GCO is stronger for triennially inspected audit firms that receive a deficient report from the PCAOB in the first inspection than for triennially inspected audit firms that receive a clean inspection report from the PCAOB in the first inspection. First, this paper provides a literature review on the importance of auditor independence and the current regulatory framework for auditor independence in the U.S.. Next, the literature on the relationship between NAS and GCOs is reviewed. This is

followed by the development of the research question and hypotheses to be tested. Then the methodology is described, specifically the sample selection method as well as the theoretical model used to test the hypotheses. Next, the results of the statistical analysis are presented and discussed, followed by an outline of the limitations of the study. Finally it is concluded that this study does not find support for the research question.

2 Literature Review

2.1 Importance of Auditor Independence

Due to information asymmetry between owners and managers, owners rely on auditors' reports for objective information about the reliability of financial statements prepared by management. Agency theory posits that independence of monitoring functions is important to managers (Jensen & Meckling, 1976), because managers are interested in bonding activities, i.e. audits, which provide a guarantee to shareholders that a manager limits opportunities for self-interested behavior. By incurring bonding costs, managers can guarantee owners a reduction of agency costs. In agency theory, the auditor takes on a monitoring role, in which independence is a key aspect. Only in case of independence will an auditor report a violation, if a violation occurred (DeAngelo, 1981) and only then will an audit be effective in reducing agency costs (Watts & Zimmermann, 1983). Hence, auditors are hired to serve the interest of shareholders by providing independent information and serve as a signaling mechanism for managers (Habib, 2012). However, auditors face conflicts of interest that may impair auditor independence, such as self-interest in audited firms (Goldman & Barlev, 1974), such as the joint provision of audit services and NAS which, on the one hand, is predicted to decrease independence of auditors. The primary reasons for this can be found in the fact that auditors can become financially dependent on clients and loose objectivity (SEC, 2000). On the other hand, it has been argued that the provision of NAS by auditors has positive effects on the client. Goldman and Barlev (1974) and Arruñada (1999) argue that a joint provision of NAS contributes to realizing economies of scope in the client-auditor relationship, due to knowledge spillovers. Additionally, market mechanisms promote auditors to remain independent, such as the threat of litigation from owners (DeFond, 2012) or the loss of clients and reputation capital in case owners are not satisfied with the auditor's performance (Watts & Zimmermann, 1983).

Overall, the theoretical framework is inconclusive as to whether the provision of NAS by auditors is an actual threat to an auditor's independence or whether it is even

beneficial due to knowledge spillover effects. In addition, it is not clear whether market-based incentives are sufficient for auditors to remain independent if they provide joint audit and non-audit services.

2.2 Impact of Regulation on Auditor Independence- SOX

Contrary to the previous argument based on market incentives that promote auditors to stay independent, regulators have tightened legislation on auditor independence in the last decade, most notably in the United States through the passage of SOX by the SEC. This section provides an overview of the impact of SOX on independence of auditors and the core mechanisms promoting auditor independence.

The overall goal of SOX was to revive investor confidence in the accounting profession and improve audit quality after auditing disasters in the early 2000s. This included extended disclosure requirements on compensation of auditors, i.e. a disclosure of audit, audit-related and non-audit fees (Coates, 2007) and the prohibition of nine NAS which, in the SEC's opinion, impaired auditor independence (Donaldson, 2003). To further improve audit quality and oversee auditor independence, SOX established the PCAOB as an oversight body for audit firms, replacing the previous system of self-regulation. An important function of the PCAOB is to monitor audit reports of public companies for correctness, informativeness and independence (PCAOB, 2013). Hence, the PCAOB has the duty to regularly inspect audit firms which audit public companies. Depending on the number of publicly listed companies (issuers) audited, an audit firm is inspected annually (more than 100 issuers) or triennially (less than 100 issuers). The objective of inspections is to assess whether audits are conducted in an effective manner and whether the audit firms established and follow policies and procedures regarding quality assurance including policies on independence (PCAOB, 2012).

The last decade has seen increased regulation of auditor independence, specifically the provision of NAS in an attempt to increase audit quality. Nevertheless, the question still exists, whether the remaining NAS fees received by auditors create economic dependence and therefore impair auditors' independence and ultimately adversely impact audit quality. The following section provides a literature review on the relation between independence, i.e. the provision of NAS and audit quality.

2.3 Impact of Non-audit Services on Audit Quality

Previous studies on the impact of independence on audit quality in the U.S. rely on different measures of audit quality. Following the definition of audit quality by DeAngelo (1981) audit quality is the joint probability that the auditor will uncover a breach and report a breach and depends on competence and independence of an auditor, where competence is necessary

to uncover a breach and independence is necessary for auditors to report this violation in an audit report (Ruiz-Barbadillo et al., 2004). Therefore, the propensity to issue a GCO as a measure of audit quality seems appropriate because this reflects both parts of the audit quality definition and is relevant in assessing the relation of independence to audit quality. This is supported by DeFond, et al. (2002) who argue that the GCO represents a direct and unambiguous assessment of auditor independence. Geiger and Rama (2003) also note that independence concerns are especially relevant in situations that require auditors' judgments, such as going concern decisions.

It is expected that the provision of NAS, a measure of independence, is negatively related to audit quality, because the probability of uncovering and reporting a violation (DeAngelo, 1981) is expected to be lower, the higher the level of NAS which impair auditor independence. Prior research on the impact of provision of NAS on audit quality measured as the propensity to issue a GCO in the U.S. has generally not found the expected negative association, as is examined below.

DeFond et al. (2002) investigate a sample of 2,428 financially distressed firms in the fiscal year 2000. They do not find an association between NAS and auditor's propensity to issue a GCO and no relation between total fees or audit fees and an auditor's propensity to issue a GCO. Hence, there is no indication that NAS impair auditor independence. The authors conclude that incentives created through an economic dependency are less important than market-based incentives, such as fear of litigation or loss of reputation.

Geiger and Rama (2003) utilize a matched-pair design sample of 66 financially distressed companies with and without a GCO, each for the fiscal year 2000. This design is chosen because it allows a better selection of the control sample. Geiger and Rama (2003) also do not find a significant relationship between NAS and NAS to audit fee ratio and the likelihood of receiving a GCO. Contrary to DeFond et al. (2002), Geiger and Rama (2003) find a significant positive association between audit fees and the likelihood of receiving a GCO which is attributed to a higher audit effort put forth by auditors when higher audit fees are paid.

Callaghan, Parkash and Singhal (2009) examine a sample of 92 bankrupt U.S. companies for the period 2001 to 2005. In this study bankrupt firms instead of financially distressed companies were analyzed because these firms should have received a GCO due to unambiguous signs of financial distress. Comparable to DeFond et al. (2002), using a sample of bankrupt U.S. firms does not yield a significant association between the likelihood of issuing a GCO and NAS, NAS to audit fee ratio, audit and total fees.

Robinson (2008) investigates the association of tax services provision and GCOs for a sample of 209 U.S. firms filing for bankruptcy in the years 2001 to 2004. Robinson (2008) finds a significant positive association between GCOs and the magnitude of tax NAS, but

not for audit fees or non-tax NAS. This finding is attributed to knowledge spillover effects from provision of tax services that positively influence audit quality.

Li (2009) examines auditor independence at the office level in the pre- and post-SOX era. Contrary to other studies presented here, Li (2009) chooses to investigate independence at the office level instead of national audit firm level because economic dependence in relation to independence might be better observed at the office level, because auditors at the office level are responsible for the audit decisions and a single client is economically more important at the office, compared to the national level (Li, 2009). Consistent with previous findings (DeFond et al., 2002; Geiger & Rama, 2003), there is no significant relationship between NAS and the likelihood of issuing a GCO for the sample of financially distressed firms at the office level pre-SOX. However, in the immediate post-SOX era (2003), Li (2009) does find a positive relationship between NAS to audit fee and NAS to total fee ratio and the likelihood to issue GCOs. This means that the provision of NAS in fact increases the likelihood to issue a GCO for Li's sample (2009), contrary to the conventional assumption that there is a negative relationship between these variables. This result might be attributable to auditor conservatism in the immediate post-SOX period.

For this reason, Geiger and Blay (2012) investigate a sample of financially distressed firms for the period 2004 to 2006, where financial distress is defined in a more stringent way than in previous studies. They find a significant negative relation between NAS fees of the current and subsequent years and the likelihood to issue a GCO. Hence, Geiger and Blay (2012) confirm the expectation that a higher magnitude of NAS fees received by auditors decreases the propensity to issue a going concern decision by these auditors.

To summarize, prior research has generally not found a significant negative association between audit quality, measured as the propensity to issue a GCO and provision of NAS within the U.S. regulatory framework for studies that include pre-SOX data (DeFond et al., 2002; Geiger & Rama, 2003; Callaghan et al., 2009). The only studies that find a significant relation between these variables find a positive relation for specific NAS (Robinson, 2008) or immediately following SOX (Li, 2009). The use of more recent post-SOX data, however, confirms a significant negative relationship between level of NAS fees and the likelihood to issue a GCO (Geiger & Blay, 2012). Overall, these findings provide mixed evidence about the relationship between the provision of NAS and audit quality. This study attempts to shed more clarity on the association between NAS and the propensity to issue a GCO in the post-SOX period (2004 to 2006) for a sample of small audit firms

2.4 Impact of Auditor Characteristics on Going Concern Reporting

The models used in prior research on the relation between NAS and GCOs usually acknowledge auditor size as a predictor variable, but no other auditor characteristics are considered. The studies above all include the size measure Big N, because prior research had asserted that large auditors are more likely to issue GCOs than smaller auditors. This is, DeAngelo (1981) and Mutchler et al. (1997) argue that large audit firms have more quasi-rents to lose compared to small audit firms if audit quality or independence is impaired and this information becomes public. Therefore, larger firms are more likely to issue a GCO than small firms in fear of losing more quasi-rents through litigation. The studies referred to above all find that Big N companies have a positive association with the propensity to issue a GCO, meaning that Big N audit firms have a higher likelihood of issuing a GCO than their smaller counterparts. It can thus be inferred that large auditors are of higher quality in terms of reporting decisions.

Hence, it might be interesting to examine a sample of small audit firms. Small audit firms are of lower quality in terms of a going concern reporting decision. For this reason, a relationship between NAS and the propensity to issue a GCO might be more pronounced for a sample of small firms which could confirm the predicted negative relationship between the two variables.

3 Research Question and Hypotheses

Based on the literature review above, this section develops the research question and hypotheses. Prior research on the impact of provision of NAS on audit quality in the U.S. has found mixed evidence regarding the association of NAS fees and impaired audit quality, measured as the propensity to issue a GCO. Auditor size was considered as a factor in modeling a going concern decision in prior models which concluded that large auditors are more likely to issue a GCO and hence have higher audit quality. A negative relationship between NAS and propensity to issue a GCO is more likely to be found for a sample of small auditors.

A way of discriminating small and large auditors is by the cycle of audit inspections by the PCAOB which inspects audit firms with more than 100 public clients annually and issuers with less than 100 issuers triennially since 2004 (PCAOB, 2013). Triennially inspected firms audit around 80% of companies with less than \$100 million in revenue, and are therefore essential for the audit market (Olson, 2008). Following the discussion on auditor size and going concern reporting quality, it is expected that these triennially inspected

firms have lower audit quality than annually inspected firms. Therefore, a negative association between NAS and propensity to issue a GCO is expected for a sample of triennially inspected firms, because the probability of uncovering and reporting a going concern issue is expected to be lower the higher the level of NAS.

- H1:** There is a negative association between the provision of non-audit services and the propensity to issue a going concern opinion for companies audited by triennially inspected audit firms.

The objectives of the PCAOB's inspection reports are to examine an audit firm's quality control policies and to evaluate how a firm executes selected audits. Key questions that are answered when evaluating selected audits are whether the firm followed the PCAOB's auditing standards, whether adequate effort was put forth, and whether there is an indication that the audit firm was not independent under SEC and PCAOB rules (PCAOB, 2012). Quality control policy inspections include the review of management structure and processes, including commitment to independence and review of the audit firm's processes for monitoring audit performance, including independence policies (PCAOB, 2012). The inspection results are summarized in an inspection report with a public and non-public part. The public portion, available on the PCAOB's website, states significant audit deficiencies, if present. The non-public portion describes quality control weaknesses (PCAOB, 2012). The publicly available report of the inspection clearly states whether the PCAOB's inspection found one or more deficiencies for the different assessment categories. For this reason, the inspection report can be classified as either clean, for audit firms without any deficiency or deficient, for audit firms with one or more deficiency (PCAOB, 2012).

Hence, the outcomes of inspection reports (deficient or clean) give an indication of auditor quality and effort. Auditor effort might have a large impact on going concern decisions which requires a lot of judgment from auditors and low effort of auditors which is reflected in a deficient report might lead to a lower likelihood of issuing a GCO (Geiger and Rama, 2003), and deficiencies can point to problems in independence of audit firms (PCAOB, 2012). Given that 60% of triennially inspected firms show a deficient result for the first inspection round (Hermanson et al., 2007) this variable might be important in predicting a relationship between NAS and GCOs for a sample of triennially inspected firms.

Prior research on the association between outcome of inspection reports and audit quality of triennially inspected firms finds mixed evidence. Gunny and Zhang (2013) investigate whether PCAOB inspection reports are associated with actual audit quality for the first two rounds of inspections from 2005 to 2009. Triennially inspected audit firms with

deficient reports are associated with significantly lower audit quality than audit firms with clean reports, when audit quality is measured as abnormal accruals and the propensity to restate audit reports, but not for the propensity to issue a GCO. Gramling et al. (2011) examine whether deficiencies in inspection reports of triennially inspected firms are associated with a change in going concern reporting decisions for financially distressed clients. For the first triennially inspected client reports from 2005 to 2007, Gramling et al. (2011) find that low quality auditors that receive a deficient report generally perform worse in terms of going concern reporting prior to the inspection report. For this reason, the period until the first-time inspection reports become available is especially interesting, as afterwards audit firms that received a deficient report perform better, on average.

H2: The association between non-audit service fees and the propensity to issue a going concern opinion is stronger for triennially inspected audit firms that receive a deficient report in the first inspection than for triennially inspected audit firms that receive a clean report in the first inspection.

4 Methodology

This section describes the sample selection procedure and the final sample, followed by a description of the logistic regression model that is used to model the probability of triennially inspected audit firms to issue a GCO to financially distressed clients.

4.1 Sample Selection

Going concern and fee data are retrieved from the Audit Analytics database for the fiscal years 2004 to 2006. This time span is chosen because first time inspections of triennially inspected firms fall within this time period. An emphasis on the first time inspections is taken because after the first inspection audit firms perform better and show a higher propensity to issue a GCO (Gramling et al., 2011). Data from the Big 6 auditors are excluded as these audit firms were inspected annually. Only companies with GCOs and audit fee data available from the Audit Analytics database are considered. This yields 12,635 observations in total for the reporting years 2004 to 2006. Following this, the COMPUSTAT database used to match financial data to the observations from the Audit Analytics database. This reduces the dataset to 1,211 data. In addition, market data are retrieved from the CRSP database which further reduces the dataset to 302 observations.

All companies that received a GCO are included and companies that did not receive a GCO are only considered if they are financially distressed, where financial distress is defined as either negative net operating cash flow or negative net income (Reynolds & Francis, 2000; DeFond et al., 2002; Li, 2009). This selection is made because a going concern decision is only important for financially distressed firms. The number of observations is decreased by 143 companies that neither received a GCO nor are in financial distress to 159 observations in total.

Finally, information from the PCAOB inspection reports for triennially inspected firms that are publicly available on the PCAOB's website (PCAOB, 2013) is retrieved. Only the first-round inspection reports are considered and issued between 2004 and 2006. In accordance with the procedure by the PCAOB which does not give an indication of the severity of deficiencies in its inspection reports and classifies reports as deficient when one or more failures to perform the appropriate audit procedures or to identify GAAP departures exist (PCAOB, 2012), the inspection reports are classified as either clean or deficient. Inspection reports for four of the pre-selected audit companies were not available on the PCAOB's website for the specified time period and therefore the final sample decreases to 155 observations in total. The final sample includes 25 observations with a GCO and 130 financially distressed firms without a GCO for the period 2004 to 2006. A total of 127 observations are associated with a deficient PCAOB inspection report and a total of 28 observations are associated with a clean PCAOB inspection report.

4.2 Going Concern Model

Following DeFond et al (2002), the going concern model to test the hypotheses is estimated by the following logistic regression model:

$$\begin{aligned}
 GCO = & \beta_0 + \beta_1(PROBANKZ) + \beta_2(\ln(ASSETS)) + \beta_3(\ln(AGE)) + \beta_4(BETA) \\
 & + \beta_5(RETURN) + \beta_6(VOLATILITY) + \beta_7(LEV) + \beta_8(CLEV) \\
 & + \beta_9(LLOSS) + \beta_{10}(INVESTMENTS) + \beta_{11}(FUTURE FINANCE) \\
 & + \beta_{12}(OP CASH FLOW) + \beta_{13}(REPORT LAG) + \beta_{14}(FEERATIO) \\
 & + \beta_{15}(\ln(TOTAL FEE)) + \beta_{16}(\ln(AUDIT FEE)) + \beta_{17}(\ln(NAS FEE)) \\
 & + \beta_{18}(DEFICIENCY) + \beta_{19}(DEFICIENCY \times \ln(NAS FEE)) \\
 & + \beta_{20}(DEFICIENCY \times FEERATIO) + \varepsilon
 \end{aligned}$$

where:		Exp. Sign
<i>GCO</i>	= indicator variable equal to 1 if a going concern opinion is issued and 0 otherwise	
<i>PROBANKZ</i>	= probability of bankruptcy score (Zmijewski, 1984)	+
$\ln(\text{ASSETS})$	= Natural logarithm of total assets at end of fiscal year measured in millions of dollars	-
$\ln(\text{AGE})$	= Natural logarithm of number of years since company was listed on a stock exchange	-
<i>BETA</i>	= the company's beta over the fiscal year	+
<i>RETURN</i>	= the company's average stock return over the fiscal year	-
<i>VOLATILITY</i>	= the standard deviation of the stock's return over the fiscal year	+
<i>LEV</i>	= the debt ratio at the end of the fiscal year (total liabilities/total assets)	+
<i>CLEV</i>	= change in LEV during the year, measured as difference between end of year LEV and beginning of year LEV	+
<i>LLOSS</i>	= indicator variable equal to 1 if the company reported a loss in the previous year and 0 otherwise	+
<i>INVESTMENTS</i>	= short and long-term investment securities divided by total assets at the end of the fiscal year	-
<i>FUTURE FINANCE</i>	= indicator variable equal to 1 if the company issues debt or equity in the following year and 0 otherwise	-
<i>OP CASH FLOW</i>	= net operating cash flow scaled by total assets at fiscal year end	-
<i>REPORT LAG</i>	= number of days between signature date of audit report and fiscal year end	+
<i>FEERATIO</i>	= ratio of non-audit service fees to total fees received by the auditor	-
$\ln(\text{TOTAL FEE})$	= Natural logarithm of total fees received by the auditor	-
$\ln(\text{AUDIT FEE})$	= Natural logarithm of audit fees received by the auditor	-
$\ln(\text{NAS FEE})$	= Natural logarithm of non-audit service fees received by the auditor	-
<i>DEFICIENCY</i>	= indicator variable equal to 1 if the auditor receives a deficient inspection report from the PCAOB and 0 otherwise	-
<i>DEFICIENCY</i> \times $\ln(\text{NAS FEE})$	= Interaction variable between <i>DEFICIENCY</i> and $\ln(\text{NAS FEE})$ to test H2	-
<i>DEFICIENCY</i> \times <i>FEERATIO</i>	= Interaction variable between <i>DEFICIENCY</i> and <i>FEERATIO</i> to test H2	-

DeFond et al. (2002) developed this model for a large sample of financially distressed firms, not restricted to clients of small auditors. This model is deemed relevant for the sample of financially distressed firms that are clients of small, i.e. triennially inspected auditors, because the considerations for the decision about a GCO should not change with the size of the audit firm (AICPA, 1988).

The dependent variable *GCO* is an indicator variable equal to 1 for firms that receive a going concern opinion and 0 otherwise. The independent variables of interest are *FEERATIO*, $\ln(\text{NAS FEE})$, $\ln(\text{AUDIT FEE})$ and $\ln(\text{TOTAL FEE})$, as well as *DEFICIENCY*. An association between the propensity to issue a GCO and NAS can be represented by the variable *FEERATIO*, the ratio of NAS fees to total fees, or variable $\ln(\text{NAS FEE})$. The variables $\ln(\text{AUDIT FEE})$ and $\ln(\text{TOTAL FEE})$ are included because an economic dependence which influences the propensity to issue a GCO can be created not only through NAS fees, but also through the magnitude of audit fees and hence total fees. The coefficients of these variables are expected to be negative and the variables are added to the model in different combinations in accordance with DeFond et al (2002) and Geiger and Blay (2012) to test hypothesis 1. The variable *DEFICIENCY* is included to test hypothesis 2. It is an indicator variable equal to 1 if the auditor receives a deficient report and equal to 0 if the auditor receives a clean report. The expected sign for the coefficient of variable *DEFICIENCY* is negative, as deficient auditors are expected to have a lower propensity to issue GCOs than clean auditors because deficient auditors generally perform worse with regard to going concern reporting than clean auditors (Gramling et al., 2011). In addition, hypothesis 2 examines the association between the propensity to issue a GCO and non-audit service fees for triennially inspected firms with and without a deficient report. It is hypothesized that the relation between NAS and GCOs is stronger for deficient firms than clean firms. To test this relation, the interaction variables *DEFICIENCY* \times $\ln(\text{NAS FEE})$ and *DEFICIENCY* \times *FEERATIO* are included separately in two different models.

The remaining predictor variables are included to control for situations where a GCO is appropriate. According to prior research (e.g. DeFond et al., 2002; Callaghan et al., 2009; Geiger & Bley, 2012), control variables should account for contrary and mitigating factors, where contrary factors are those that contribute to the issuance of a GCO and mitigating factors are those that prevent the issuance of a GCO.

Firstly, contrary variables in the going concern model are *PROBANKZ*, $\ln(\text{AGE})$, *BETA*, *RETURN*, *VOLATILITY*, *LEV*, *CLEV*, *LLOSS*, *OP CASH FLOW* and *REPORT LAG*. *PROBANKZ* is Zmijewski's (1984) probability of bankruptcy score. High values indicate high financial distress, which is associated with a higher likelihood of receiving a GCO. The variable $\ln(\text{AGE})$ is included to account for the fact that young firms are more likely to fail and therefore the likelihood of receiving a GCO is higher for younger firms (Mutchler et al., 1997). Next, market related measures are *BETA*, *RETURN* and *VOLATILITY*. *BETA* and *VOLATILITY* are measures of market and total risk of a security, respectively. The higher these risk measures, the higher the probability that the stock price and key financial ratios are negatively affected which could indicate a substantial doubt about the continuance

as a going concern (AICPA, 1988). For this reason a positive association of *BETA* and *VOLATILITY* with GCO is expected (DeFond et al, 2002). A positive *RETURN* indicates stable financial results and therefore reduces the likelihood for client firms to receive a GCO from auditors. *LEV* and *CLEV* are contrary factors because a high and increasing leverage are contributing to the possibility of a violation of debt covenants which is associated with a higher likelihood to receive a GCO (AICPA, 1988). *LLOSS* is included because firms with prior year losses are more likely to receive a GCO because a recurring negative trend increases doubtfulness about the continuance of an entity as a going concern (AICPA, 1988). The cash flow measure *OP CASH FLOW* is included because low operating cash flows indicate a higher probability of failure and therefore a negative association is expected between *OP CASH FLOW* and *GCO*. Moreover, an audit of a financially stressed company takes more time than an audit of a financially healthy company and report lags were found to be positively related to the likelihood of receiving a GCO (McKeown et al., 1991). Hence, *REPORT LAG* is included as longer reporting delays indicate a higher likelihood of receiving a GCO (DeFond et al., 2002; Geiger & Bley, 2012).

Secondly, mitigation factors included in the model are variables *ln(ASSETS)*, *INVESTMENTS* and *FUTURE FINANCE*. *ln(ASSETS)* is a size measure for the audited companies where larger companies are more likely to avoid bankruptcy as they have more possibilities to react in case of financial distress indicating a negative relationship between *ln(ASSETS)* and *GCO* (DeFond et al., 2002; Callaghan et al., 2009; Geiger & Blay, 2012). The variable *INVESTMENTS* is another mitigating factor which measures liquidity and therefore the possibility to avoid bankruptcy in case of financial difficulties. Higher liquidity leads to a lower probability of receiving a GCO from an auditor, hence a negative coefficient is expected. Lastly, *FUTURE FINANCE* is included as this variable measures the ability to raise new financing in case of financial difficulties (DeFond et al., 2012). Hence, a negative coefficient for the variable *FUTURE FINANCE* is expected.

Overall, the above model includes a variety of control variables that should account for situations in which a GCO is expected. A size measure for the audit firm is not included because the sample at hand is homogenous in that it only consists of triennially inspected audit firms. The variables of interest are fee data as well as the presence or absence of a deficiency in the audit firms' inspection reports.

5 Results and Discussion

This section presents the analysis and results of the tests of the hypotheses. Firstly, descriptive statistics for the full sample and the subsamples of firms with and without a GCO are shown. Secondly, the multivariate analysis and discussion of the results of the going concern model are presented.

5.1 Descriptive statistics

Table 1 reports descriptive statistics for the full sample of 155 triennially inspected firms, including 25 firms that received a GCO and 130 financially distressed firms that did not receive a GCO. Firstly, 16% of firms in the sample at hand received a GCO. This percentage is relatively higher than the ones reported in DeFond et al. (2002) and in Geiger and Blay (2012). The higher percentage of firms receiving a GCO in this sample might be attributable to the fact that small firms have less negotiation power in case of financial distress and are therefore more likely to receive a GCO. Secondly, the means for *AUDIT FEE* (\$253 thousand), *NAS FEE* (\$45 thousand) and *TOTAL FEE* (\$297 thousand) are much lower than the values reported in any other study (DeFond et al., 2002; Geiger & Rama, 2003; Callaghan, 2009; Geiger & Blay, 2012). This is because the sample at hand consists of firms audited by small, triennially inspected audit firms which are likely to audit small firms, which is supported by the fact that the mean of variable *ASSETS* (\$53 million) is only a fraction of the mean assets reported in other studies (e.g. \$813 million in DeFond et al., 2002; \$218 million in Geiger & Blay, 2012). Variable *FEERATIO* with a mean of 16% has a similar mean value as the larger sample in Geiger and Blay (2012), but is of course much smaller than values pre-SOX (DeFond et al., 2002; Geiger & Rama, 2003). This indicates that SOX reduced the magnitude of NAS fees relative to total fees substantially. Thirdly, the *REPORT LAG* is 78 days on average for this sample of financially distressed firms which is comparable to the 76 days reported in DeFond et al. (2002). Next, the mean of *PROBANKZ* is -4.63 and indicates that the sample at hand has a low probability of bankruptcy, on average, which is similar to values reported in Callaghan et al. (2009). None of the companies in this sample had short or long term *INVESTMENTS*. This might be the case because the sample includes very small firms compared to all other studies. As the variable *INVESTMENTS* will not have any predictive power in the following analyses it will be excluded from here onwards. Next, the variable *OP CASH FLOW* has a negative mean (-0.26) due to the fact that the sample consists of financially distressed clients who are defined as either having negative net income or negative net operating cash flow. This sample of small financially distressed firms falls in between the large sample of financially distressed firms in DeFond

et al. (2002) and the large sample of bankrupt firms in Callaghan et al. (2009) comparing variable *OP CASH FLOW*. Therefore, small financially distressed firms perform worse than larger counterparts in terms of net operating cash flow. The companies in this sample have a mean debt ratio (*LEV*) of 0.46 and the debt ratio is decreasing (*CLEV*) from one to the next period by 0.04 on average. These values are comparable to those in DeFond et al. (2002) and Geiger and Blay (2012) who also use a sample of financially distressed firms. The market risk measure *BETA* is 0.7 on average and average *VOLATILITY* is 0.05. This volatility is higher than the ones reported in DeFond et al. (2002), Callaghan et al. (2009) and Geiger and Blay (2012), indicating that the firms' stocks in this sample are riskier. The variable *RETURN* over the fiscal year is very high and positive on average (0.12). The average *AGE* (years since listing) of the firms in this sample is 15 years which is comparable to the average age of firms reported in Geiger and Blay (2012). The likelihood of receiving future financing (*FUTURE FINANCE*) in terms of equity or debt is on average 22% which falls in between the sample of financially distressed firms in DeFond et al. (2002) and the sample of bankrupt firms in Callaghan et al. (2009). Hence, small financially distressed firms secure a higher level of new financing than larger counterparts. The likelihood of a prior year loss is 75% in the sample at hand which is comparable to DeFond et al (2002) and Callaghan et al. (2009). Lastly, the likelihood of an audit firm being deficient is 82% for the full sample for the years 2004 to 2006 which is very similar to the 81% reported in Gramling et al. (2011) for a large sample in the same time period.

Overall, this sample of small firms represents financially distressed firms and replicates previous studies in terms of many variables proving the relevance of the data. A difference in variables naturally exists in terms of size, as well as fee data paid to auditors due to the sample selection.

Table 1:

Descriptive Statistics for 155 firms audited by triennially inspected audit firms, including 25 with a going concern opinion and 130 financially distressed firms for the fiscal years 2004-2006

Variables	Full sample (N=155)		GCO=0 (N=130)		GCO=1 (N=25)		t-test
	Mean	Std. Deviation	Mean	Std. deviation	Mean	Std. deviation	P-value
<i>GCO</i>	.16	.37					
<i>AUDIT FEE</i> (\$)	252724.53	286834.02	259616.38	301334.14	216886.88	195616.84	.50
<i>NAS FEE</i> (\$)	44759.10	78724.35	47243.73	83515.71	31839.00	45499.19	.37
<i>TOTAL FEE</i> (\$)	297483.63	298176.78	306860.12	311359.45	248725.88	215572.56	.37
<i>FEERATIO</i>	.16	.17	.17	.18	.12	.12	*.09
<i>REPORT LAG</i>	78.42	50.73	77.96	53.95	80.80	29.21	.70
<i>PROBANKZ</i>	-4.63	22.77	-3.78	2.18	-9.04	57.25	.65
<i>ASSETS</i> (\$ millions)	53.34	78.36	60.07	83.64	18.33	16.75	**0.00
<i>INVESTMENTS</i>	.00	.00					
<i>OP CASH FLOW</i>	-.26	.86	-.14	.27	-.87	1.96	*.07
<i>LEV</i>	0.46	31.53	.39	.31	0.88	0.93	.32
<i>CLEV</i>	-0.04	34.33	.04	.22	-0.45	2.32	.19
<i>BETA</i>	.70	.62	.65	.61	.92	.61	**0.04
<i>VOLATILITY</i>	.05	.04	.04	.03	.07	.09	.19
<i>RETURN</i>	.12	1.77	.05	1.04	.48	3.77	.58
<i>AGE</i> (years since listing)	15.05	5.39	14.62	5.42	17.28	4.70	**0.02
<i>FUTURE FINANCE</i>	.22	.42	.19	.40	.36	.49	.12
<i>LLOSS</i>	.75	.43	.73	.45	.88	.33	*.06
<i>DEFICIENCY</i>	.82	.39	.84	.37	.72	.46	.23

Independent t-test with equal variances assumed (Levene's test for equal variances) for variables *AUDIT FEE*, *NAS FEE*, *TOTAL FEE*, *REPORT LAG*, *BETA* and *AGE*. For all other variables equal variances not assumed.

All p-values are two-tailed.

Comparing variable measures for the 25 firms with GCO and 130 firms without a GCO reported in Table 1, reveals that GCO recipients have smaller means for the variables of interest *AUDIT FEE*, *NAS FEE*, *TOTAL FEE* and *DEFICIENCY*, however, these differences are not significant. This is not the case for the variable *FEERATIO* which is significantly different for the two groups (p-value=.09) and higher for the non-going concern group. Overall, the univariate results provide some evidence that the provision of NAS reduces the likelihood of issuing a GCO, as the ratio of non-audit service fees to total fees is higher for the group of firms that did not receive a GCO. However, this result does not account for control variables, therefore multivariate analysis needs to be conducted. For this sample, it is not confirmed that deficient firms perform worse in terms of the propensity to issue a GCO (p-value=.23).

The control variables show that firms that receive a GCO have a higher probability of a prior year loss (*LLOSS*; p-value=.06), a lower net operating cash flow (*OP CASH FLOW*; p-value=.07), a higher *BETA* (p-value=.04) and lower *ASSETS* (p-value=.00), consistent with expectations. A significant difference also exists for variable *AGE* (p-value=.02) which is higher on average for the 25 going concern recipients. This is contrary to the expectation that younger firms are more likely to fail than older firms (Mutchler, et al. 1997). The variables *REPORT LAG*, *PROBANKZ*, *LEV*, *CLEV*, *VOLATILITY*, *RETURN* and *FUTURE FINANCE*, are not significantly different for the two groups.

This indicates a decent control sample, as most of these variables reflect factors that according to SAS No. 59 (AICPA, 1988) are considered by auditors in a going concern decision, such as key financial and market ratios, as well as financial stress.

To check for multicollinearity between the dependent variables, Pearson correlations for continuous variables and Spearman correlations for categorical variables are examined. High and significant correlations are found for variables *TOTAL FEE* and *AUDIT FEE* ($r=.965$), as well as *TOTAL FEE* and *NAS FEE* ($r=.273$), *FEERATIO* and *AUDIT FEE* ($r=-.278$) and *FEERATIO* and *NAS FEE* ($r=-.746$). Low and insignificant correlations are found for *AUDIT FEE* and *NAS FEE* ($r=.010$) and *TOTAL FEE* and *FEERATIO* ($r=-.071$). This supports the decision for adding the combinations of fee data in four different models to test hypothesis 1 (i.e. Model 2: only feeratio; Model 3: only total fee; Model 4: feeratio and total fee as these two variables are not correlated; Model 5: audit fee and NAS fee, as these two variables are not correlated). Multiple linear regressions with these variables show that no variable has a Variance Inflation Factor (VIF) of higher than 10. (Sharpe, De Veaux & Velleman, 2012; Li, 2009). Overall, there is little indication that multicollinearity problems arise for the going concern model and the sample at hand.

To summarize, the descriptive statistics show that the sample at hand is representative for small financially distressed firms and that the control sample is acceptable. In addition, there is some evidence for the fact that the provision of NAS reduces the likelihood of issuing a GCO, as the ratio of non-audit service fees to total fees is higher for the group of firms that did not receive a GCO, but this result does not control for other effects.

5.2 Multivariate Analysis

Table 2 reports the result of the first five models that test hypothesis 1 which investigates whether there is a negative association between the provision of NAS and the propensity to issue a GCO for companies audited by triennially inspected audit firms. Models 2 to 5 add fee data in different combinations to the baseline model to test this relationship. The coefficients of the variables, odds and p-values are reported, as well as statistics on the model fit (Pseudo R-square and classification percentage).

The overall classification percentage of the intercept-only model is 83.9% which is very high due to the sample characteristics, with only 16% of firms receiving a GCO. Overall, an increase in classification percentages can be found for all models, which indicates that the independent variables have predictive power and provide an improvement to the intercept-only model. In addition, the pseudo R-squares for the different models are high (58% to 69%), indicating a good fit of the five models. The Hosmer and Lemeshow test is also highly insignificant for any of the models, indicating that the goodness of fit between observed and predicted values is large. This confirms the appropriateness of the models to predict a GCO. Model 1, the baseline model where no fee data are added, shows that six variables are significant in predicting the likelihood that an entity receives a GCO for this sample. These are $\ln(ASSETS)$ (p-value=.04), $OP\ CASH\ FLOW$ (p-value=.04), $BETA$ (p-value=.08), $RETURN$ (p-value=.01), $\ln(AGE)$ (p-value=.01) and $FUTURE\ FINANCE$ (p-value=.00). The significance of these variables is in the predicted direction, except for $BETA$, $\ln(AGE)$ and $FUTURE\ FINANCE$. The age variable has a positive coefficient, meaning that older firms are more likely to receive a GCO. The coefficient for variable $FUTURE\ FINANCE$ is in the positive direction, meaning that the presence of future financing through debt or equity increases the likelihood of receiving a GCO for audited firms. Auditors might not have this information available when making the going concern decision, as this variable is measured retrospectively. All other variables in the model, $PROBANKZ$, LEV , $CLEV$, $VOLATILITY$, $LLOSS$, $DEFICIENCY$ are insignificant. Importantly, whether a firm receives a deficient or clean report from the PCAOB inspection ($DEFICIENCY$) does not predict a GCO, similar to Gunny and Zhang (2013) who also cannot confirm a relationship between the outcomes of inspection reports and GCOs for triennially inspected firms.

Model 2 adds variable *FEERATIO* to the baseline model which increases the fit of the model slightly (Pseudo R-square=59%). The ratio of non-audit fees to total fees is insignificant (p-value=.38) and therefore provides no indication that NAS fees influence the likelihood of issuing a GCO. The same control variables as in model 1 stay significant.

Model 3 introduces variable $\ln(TOTAL\ FEE)$ to the baseline model 1. Overall, this causes a large increase in the pseudo R-square (66%). Total fees are highly significantly positive in predicting the likelihood of a GCO. This means that the higher the total fees received by the auditor the higher the odds that a client receives a GCO (odds=7.35). This result contradicts the notion that economic dependence from high total fees impairs auditor independence, which is supported by model 4.

Model 4 which introduces a combination of *FEERATIO* and $\ln(TOTAL\ FEE)$ to the first model also does not find a statistically significant coefficient for the ratio of NAS fees to total fees (p-value=.16) and provides a similar result as model 2. Interestingly, the coefficient for the total fees an auditor receives is again highly significant (p-value=.00). This means that \$1 more in total fees paid increases the odds of receiving a going concern for client firms by 8.27. This again calls into question the notion that high fees impair auditor independence.

Finally, model 5 introduces $\ln(AUDIT\ FEE)$ and $\ln(NAS\ FEE)$ to the baseline model, to test whether the absolute level of NAS fees influences the likelihood of a GCO, when the variable $\ln(NAS\ FEE)$ is highly insignificant with a p-value of 0.95 which does not provide evidence that non-audit fees influence the going concern decision, similar to model 2 and 4. The variable $\ln(AUDIT\ FEE)$, however, is highly significant (p-value=.01) and has a positive coefficient. This means that high audit fees increase the likelihood of a GCO, which is contrary to the expectation that high fees create economic dependence and therefore impair auditor independence. Overall, this does not lend any support to hypothesis 1. Neither of the variables $\ln(NAS\ FEE)$ and *FEERATIO* which account for NAS fees are significant in predicting the likelihood of a GCO. An additional analysis which adds the ratio of NAS fees to audit fees to the baseline model also does not find a significant relationship.

Table 2: Going concern logistic regression models including fee data for a sample of 25 going concern (GCO=1) and 130 non-going concern (GCO=0) financially distressed firms audited by triennially inspected audit firms (Full sample size=155) for the fiscal years 2004-2006

Exp. sign	Model 1 (baseline)			Model 2 (FEERATIO)			Model 3 (TOTAL FEE)			Model 4 (FEERATIO & TOTAL FEE)			Model 5 (NAS FEE & AUDIT FEE)		
	β	odds	p-value	β	odds	p-value	β	odds	p-value	β	odds	p-value	β	odds	p-value
INTERCEPT	-11.26	0.00	**0.01	-10.74	0.00	**0.01	-29.68	0.00	**0.00	-29.89	0.00	**0.00	-32.00	0.00	**0.00
REPORT LAG	0.00	1.00	0.93	0.00	1.00	0.89	-0.02	0.98	0.18	-0.02	0.98	0.15	-0.02	0.98	0.14
PROBANKZ	0.04	1.04	0.81	0.01	1.01	0.94	0.06	1.06	0.76	0.01	1.01	0.97	0.03	1.03	0.89
ln(ASSETS)	-0.81	0.45	**0.04	-0.88	0.42	**0.03	-2.20	0.11	**0.00	-2.58	0.08	**0.00	-2.61	0.07	**0.00
OP CASH FLOW	-2.57	0.08	**0.04	-2.48	0.08	**0.05	-2.34	0.10	*0.09	-1.95	0.14	0.15	-1.63	0.20	0.23
LEV	1.82	6.16	0.18	2.08	7.98	0.14	2.06	7.86	0.20	2.64	14.01	0.11	2.12	8.33	0.20
CLEV	-1.37	0.25	0.15	-1.58	0.21	0.10	-1.36	0.26	0.21	-1.97	0.14	*0.10	-1.66	0.19	0.14
BETA	0.95	2.59	*0.08	0.90	2.45	*0.10	1.40	4.04	**0.03	1.38	3.99	**0.03	1.04	2.82	*0.09
VOLATILITY	5.15	173.09	0.30	5.14	171.03	0.29	5.99	400.25	0.28	5.60	271.53	0.31	2.89	17.94	0.60
RETURN	0.32	1.38	**0.01	0.35	1.41	**0.01	0.29	1.34	**0.02	0.34	1.40	**0.01	0.32	1.37	**0.01
ln(AGE)	3.42	30.58	**0.01	3.48	32.33	**0.01	2.67	14.48	*0.06	2.74	15.41	*0.06	2.75	15.65	**0.05
FUTURE FINANCE	2.04	7.66	**0.00	1.84	6.29	**0.01	3.36	28.92	**0.00	2.99	19.88	**0.00	2.95	19.14	**0.00
LOSS	-0.11	0.89	0.91	-0.15	0.86	0.87	0.33	1.39	0.78	0.19	1.21	0.88	0.70	2.02	0.56
DEFICIENCY	-0.93	0.39	0.17	-1.06	0.35	0.13	-1.04	0.35	0.17	-1.30	0.27	0.11	-1.08	0.34	0.19
FEERATIO				-2.42	0.09	0.38				-4.50	0.01	0.16			
ln(TOTAL FEE)							1.99	7.35	**0.01						
ln(NAS FEE)															
lnAUDIT FEE															
Pseudo R-square		58.43%			59.05%			65.57%			67.10%			65.68%	
Classification percentage		91.61%			91.61%			89.68%			90.32%			90.97%	

Classification percentage constant only model = 83.9%

all p-values are two-tailed

*significance at 10% α ; ** significance at 5% α

Similar to Geiger and Rama (2003), this study finds a significantly positive association between audit fees and the likelihood of a GCO, and total fees and the likelihood of a GCO. In addition, receiving a deficient report does not predict the likelihood of a GCO in any of the models 1 to 5. These results call into question the viability of hypothesis 2 which tests whether the association between non-audit service fees and the propensity to issue a GCO is stronger for triennially inspected audit firms that receive a deficient report in the first inspection, than for triennially inspected audit firms that receive a clean report in the first inspection.

Table 3 reports the result of models 6 and 7 to test hypothesis 2. These two models add an interaction term between variable *DEFICIENCY* and $\ln(\text{NAS FEE})$ and *FEERATIO* respectively, to model the interaction effect that is hypothesized in H2. Overall, the model fit is only slightly higher than for the baseline model with a pseudo R-square of 59% for model 6 and 7.

Table 3:

Going concern logistic regression models including interaction terms for a sample of 25 going concern (GCO=1) and 130 non-going concern (GCO=0) financially distressed firms audited by triennially inspected audit firms (Full sample size=155) for the fiscal years 2004-2006

	Exp. sign	Model 6 (<i>DEFICIENCYxln(NAS FEE)</i>)			Model 7 (<i>DEFICIENCYxFEERATIO</i>)		
		coefficient	odds	p-value	coefficient	odds	p-value
INTERCEPT		-15.98	0.00	*0.08	-10.99	0.00	**0.01
<i>REPORT LAG</i>	-	0.00	1.00	0.91	0.00	1.00	0.87
<i>PROBANKZ</i>	+	0.05	1.05	0.79	0.01	1.01	0.97
<i>ln(ASSETS)</i>	-	-0.80	0.45	**0.05	-0.88	0.41	**0.03
<i>OP CASH FLOW</i>	-	-2.60	0.07	**0.05	-2.51	0.08	**0.05
<i>LEV</i>	+	1.67	5.29	0.26	2.16	8.68	0.13
<i>CLEV</i>	+	-1.38	0.25	0.16	-1.63	0.19	*0.10
<i>BETA</i>	-	0.86	2.35	0.12	0.89	2.43	*0.10
<i>VOLATILITY</i>	-	4.86	128.9	0.32	5.21	182.7	0.29
<i>RETURN</i>	+	0.32	1.38	**0.01	0.36	1.43	**0.01
<i>ln(AGE)</i>	-	3.36	28.89	**0.01	3.48	32.53	**0.01
<i>FUTURE FINANCE</i>	-	1.98	7.25	**0.01	1.83	6.26	**0.01
<i>LLOSS</i>	+	0.06	1.07	0.95	-0.18	0.83	0.85
<i>DEFICIENCY</i>	-	4.24	69.7	0.57	-0.77	0.46	0.51
<i>FEERATIO</i>	-				-1.12	0.32	0.82
<i>ln(NAS FEE)</i>	-	0.48	1.61	0.51			
<i>DEFICIENCYx ln(NAS FEE)</i>	-	-0.51	0.60	0.47			
<i>DEFICIENCYx FEERATIO</i>	-				-1.89	0.15	0.75
Pseudo R-square		59.12%			59.35%		
Classification %		90.97%			90.97%		

Classification percentage baseline = 83.9%

All p-values are two-tailed

*significance at 10% α ; ** significance at 5% α

The same control variables as in models 1 to 5 are significant, except variable BETA which is insignificant in model 6. Additionally, the variable CLEV, the change in leverage from beginning to year end, becomes marginally significant in model 7. Model 6 adds the interaction term *DEFICIENCYxln(NAS FEE)*, as well as both variables separately to the baseline model. None of these variables of interest are significant in the regression (p-value=.57 for *DEFICIENCY*, p-value=.51 for *ln(NAS FEE)*, p-value=.47 for *DEFICIENCYxln(NAS FEE)*).

Model 7, which adds the interaction term *DEFICIENCY* \times *FEERATIO*, and both variables separately to the baseline model also does not find any significance for these variables (p-value=.51 for *DEFICIENCY*, p-value=.82 for *ln(NAS FEE)*, p-value=.75 for *DEFICIENCY* \times *ln(NAS FEE)*).

Other combinations of these variables, for example leaving out variable *DEFICIENCY* and *ln(NAS FEE)* or *FEERATIO* also does not provide a significant result for any of the variables of interest. Hence, as the interaction terms are insignificant a relationship between non-audit services of deficient companies and the likelihood of issuing a GCO cannot be found. Overall, there is no indication that the association between non-audit service fees and the propensity to issue a GCO is stronger for triennially inspected audit firms that receive a deficient report in the first inspection than for triennially inspected audit firms that receive a clean report in the first inspection. Consequently, hypothesis 2 cannot be supported based on the data at hand.

To check the robustness of these results a subsample with a stricter definition of financial distress is used for the regression analyses, following the procedure in Geiger and Blay (2012). Financial distress in this study was defined as either negative net operating cash flow or net income. This strict selection of financial distress decreases the sample size by 30 to 125 observations, with 22 observations with a GCO and 103 observations without a GCO. This analysis does not provide a different result from above, and hypotheses 1 and 2 are also not supported for a subsample of firms with negative net operating cash flow and net income.

5.3 Discussion and Implications

This section discusses the results of this study and provides interpretations for the findings. Firstly, this study does not find any support for a relationship between the provision of NAS and the likelihood of issuing a GCO for a sample of firms audited by triennially inspected audit firms in the period 2004 to 2006. Therefore hypotheses 1 cannot be supported and the result does not provide evidence that the provision of NAS by auditors impairs auditor independence and audit quality for triennially inspected audit firms, in the period 2004 to 2006. This study can also not confirm the conclusion of Geiger and Blay (2012) who find a relationship between these factors for the same time period (2004 - 2006), but use a large sample of financially distressed firms audited by triennially and annually inspected firms. Overall, a consistent negative relationship between provision of NAS and GCOs cannot be confirmed for different samples in the post-SOX period. This calls into question the viability of regulators' concerns about the provision of NAS by small auditors, when considering independence in fact. However, as was argued in the literature review, the SEC

is particularly concerned with perceived independence (SEC, 2000), which is not tested for in this study. Therefore, regulators might have a valid point in regulating the provision of NAS to assure perceived independence of auditors.

As no significant negative impact of NAS on audit quality was found for triennially inspected firms, these auditors are likely to have other incentives to remain independent. For triennially inspected auditors, market-based incentives, such as maintaining a high reputation, threat from litigation and fear of loss of clients might be factors that facilitate independence (DeAngelo, 1981). However, it has been shown that litigation threats and client losses are less important for small auditors than large auditors, because a client loss results in relatively small losses of quasi-rents for small auditors and small auditors have little to lose in case of a class-action lawsuit (Lennox, 1999). Therefore reputation incentives might be the driving force for small auditors to remain independent even though they provide NAS. In general small auditors have lower reputation than large auditors (Lennox, 1999) and thus it might be even more important to maintain reputation capital for small auditors. Secondly, the going concern decision by triennially inspected auditors is not influenced by the outcome of their inspection report. This confirms the conclusion by Gunny and Zhang (2013) who also do not find a relationship between going concern reporting performance and outcome of inspection reports. Hypothesis 2 can hence not be supported and the association between NAS and GCOs is not stronger for firms with a deficient inspection report compared to those with a clean inspection report.

Lastly, this study does find a positive relationship between total fees and audit fees received by the auditor and the likelihood of issuing a GCO. The significance of total fees is likely due to the audit fee portion of total fees. Hence, the higher the audit fees received by the auditor the higher the likelihood of issuing a GCO. This means that audit fees do not create an economic dependence between auditors and clients, but rather increase audit quality. This result is similar to Geiger and Rama (2003) who also find that audit fees are positively related to the propensity to issue a GCO for a small sample of 66 non-going concern and 66 going concern companies in the pre-SOX era. The similarities of these results might be due to the lack of statistical power because of the small samples in both studies. Geiger and Rama (2003) attribute their result to the fact that high audit fees lead to higher audit effort and in turn a higher likelihood of issuing a GCO. Other authors have also found similar relationships between audit fees, effort and quality (e.g. Simunic, 1980; Palmrose, 1986; Davis, Ricchiute & Trompeter, 1993).

Overall, auditor independence and quality does not seem to be impaired by NAS fees for triennially inspected firms in the post-SOX period, contrary to the expectations by regulators.

6 Conclusion and Limitations

This study empirically investigates whether NAS fees impair auditor independence and therefore the likelihood of auditors to issue a GCO, and whether this relationship is influenced by the outcome of an auditor's inspection report. A sample of firms audited by triennially inspected audit firms in the post-SOX period 2004 to 2006 is chosen. For this time span the first-time inspection reports for triennially inspected firms are available. A logistic regression model is utilized to measure the impact of fees on the going concern decision. This study does not find support for the hypothesis that the provision of NAS decreases the likelihood for auditors to issue a GCO. The relationship between non-audit service fees and the likelihood of issuing a GCO is insignificant for the given sample of firms audited by triennially inspected auditors. It can be inferred that the magnitude of NAS fees does not result in a lower likelihood of GCOs, but no causality can be established. The reason for this is that financially distressed firms that receive a GCO might simply not have funds available to spend on NAS. In addition, the going concern decision by triennially inspected auditors is not influenced by the outcome of their inspection report and the association between NAS and GCOs is not stronger for firms with a deficient inspection report, compared to those with a clean inspection report. The study does, however, find a significantly positive relationship between the magnitude of audit fees and total fees and the likelihood of a GCO.

Overall, this study finds no indication that fees paid to auditors are a cause for an economic dependence between triennially inspected auditors and their clients and thus do not impair audit quality. On the contrary, audit fees and total fees paid to triennially inspected auditors increase an auditor's likelihood for a financially distressed firm to receive a GCO, and therefore their independence. This last finding can most likely be attributed to the fact that higher audit fees increase the level of auditor effort during an audit, which results in improved decisions about a GCO. These findings question regulators' concerns about triennially inspected auditors providing audit services in combination with NAS to their clients, as this is argued to impair independence (SEC, 2000). However, this study investigates the impact of independence in fact on audit quality and not perceived independence, which is the SEC's main concern.

Finally, this study faces limitations with regard to sample selection, methodology as well as lack of statistical power. The sample at hand is small with only 155 observations in total and has asymmetric group sizes for the going concern and non-going concern subsamples. The rule of thumb for sample sizes of logistic regression analyses is ten events per variable (Vittinghoff, & McCulloch, 2007). With 13 variables in the smallest model

requiring approximately 130 observations and the fact that subsamples are of dissimilar size the results of the analysis might not be meaningful. As the classification percentage of the intercept-only model shows, already 83.9% of GCOs are classified correctly without the predictive power of all other variables. Hence, the findings might be attributable to the fact that the sample is not representative. Research on the relation between NAS fees and audit quality of triennially inspected audit firms should utilize a larger sample in future, i.e. including more than one round of inspection reports (Geiger & Blay, 2012).

Secondly, it was not controlled for unexpectedly low or high fees which are argued to create dependence of auditors on clients instead of actual fees received (DeFond et al., 2002; Callaghan et al, 2009; Li, 2009; Geiger & Blay, 2012). Even though DeFond et al. (2002), Callaghan et al, (2009), Li (2009) and Geiger and Blay (2012) do not find different results for unexpected and actual fees, a dependence in terms of unexpected fees cannot be ruled out in this study and a future study should control for expected fees which potentially have a large impact on the results.

Thirdly, causality between provision of audit and non-audit fees and the likelihood to issue GCOs cannot be established. This is because during the audit of a financially distressed company a decision about a GCO has to be made. This decision requires high professional judgment and large effort from auditors (AICPA, 1988) and therefore it is likely that higher audit fees are charged. Hence, the higher the financial distress, the higher the expected fees because higher audit effort is required. Financially distressed firms might also be less likely to spend high NAS fees than their counterparts, because these services might not be affordable. Therefore no relationship might be found between NAS fees and the likelihood of issuing a GCO. Some studies argue that these endogeneity issues might arise for the going concern model (DeFond et al, 2002; Li, 2009; Geiger & Blay, 2012) because fee data as well as GCOs are related to financial distress. This is not controlled for in this study and therefore no causality can be established for the significant association between audit fees and the propensity to issue a GCO.

Due to the three limitations presented above, the unrepresentative sample, failure to control for unexpected fees and failure to control for endogeneity, the results of this study have to be interpreted with great caution and conclusions that are drawn might not be reliable.

References

- American Institute of Certified Public Accountants (AICPA). (1988). The Auditor's Consideration of an Entity's Ability to Continue as a Going Concern. Statement on Auditing Standards No. 59. Retrieved June 17, 2013 from <http://www.aicpa.org/Research/Standards/AuditAttest/DownloadableDocuments/AU-00341.pdf>
- Arruñada, B. (1999). The Provision of Non-Audit Services by Auditors: Let the Market Evolve and Decide! *International Review of Law and Economics*, 19(4), 513-31. Retrieved April 22, 2013 http://papers.ssrn.com/sol3/papers.cfm?abstract_id=224744&download=yes
- Callaghan, J., Parkash, M., Singhal, R. (2009). Going-concern audit opinions and the provision of Nonaudit Services: Implications for Auditor Independence of Bankrupt Firms. *Auditing: A Journal of Practice & Theory*, 28 (1), 153-169. DOI: 0.2308/aud.2009.1.153
- Coates, J.C. (2007). The Goals and Promise of the Sarbanes-Oxley Act. *The Journal of Economic perspectives*, 21(1), 91-116. Retrieved from <http://www.jstor.org/stable/30033703>
- Davis, L.R., Ricchiute, D.N. & Trompeter, G. (1993). Audit effort, audit fees, and the provision of nonaudit services to audit clients. *The Accounting Review*, 68 (1), 135-150. Retrieved from <http://www.jstor.org/stable/248370> .
- DeAngelo, L.E. (1981). Auditor Size and Audit Quality. *Journal of Accounting and Economics*, 3, 183-199. DOI: 10.1016/0165-4101(81)90002-1
- DeFond, M.L. & Lennox, C.S. (2011). The effect of SOX on small auditor exits and audit quality. *Journal of Accounting and Economics*, 52, 21-40. doi: 10.1016/j.jacceco.2011.03.002
- DeFond, M. L., Raghunandan, K. & Subramanyam, K. R. (2002). Do Non-Audit Service Fees Impair Auditor Independence? Evidence From Going Concern Audit Opinions. *Journal of Accounting Research*, 40 (4), 1247-1274. DOI: 10.1111/1475-679X.00088
- Donaldson, W.H. (2003, September 9). *Testimony Concerning Implementation of the Sarbanes-Oxley Act of 2002*. Retrieved from <https://www.sec.gov/news/testimony/090903tswhd.htm>
- European Commission (2011). Proposal for a Regulation of the European Parliament and of the Council on specific requirements regarding statutory audit of public-interest entities. (COM(2011) 779/3). Retrieved from http://ec.europa.eu/internal_market/auditing/docs/reform/COM_2011_779_en.pdf
- Fargher, N.L. & Jiang, L. (2008). Changes in the Audit Environment and Auditors' Propensity to Issue Going-Concern Opinions. *Auditing: A Journal of Practice & Theory*, 27 (2), 55-77. DOI: 10.2308/aud.2008.27.2.55

- Feldmann, D.A. & Read, W.J. (2010). Auditor Conservatism after Enron. *Auditing: A Journal of Practice and Theory*, 29 (1), 267-278. DOI: 10.2308/aud.2010.29.1.267
- Geiger, M.A. & Blay, A.D. (2012). Auditor Fees and Auditor Independence: Evidence from Going Concern Reporting Decisions. *Contemporary Accounting Research. Advance online publication*. DOI: 10.1111/j.1911-3846.2012.01166.x
- Geiger, M.A. & Rama, D.V. (2003). Audit Fees, Nonaudit Fees, and Auditor Reporting on Stressed Companies. *Auditing: A Journal of Practice & Theory: September 2003, Vol. 22 (2)*, 53-69. doi: 10.2308/aud.2003.22.2.53
- Geiger, M.A. & Rama, D.V. (2006). Audit Firm Size and Going-Concern Reporting Accuracy. *Accounting Horizons*, 20 (1), 1-17. Retrieved from <http://aaajournals.org/doi/abs/10.2308/acch.2006.20.1.1>
- Goldman, A. & Barlev, B. (1974). The Auditor-Firm Conflict of Interests: Its Implications for Independence. *The Accounting Review*, 49 (4), 707-718. Retrieved from <http://www.jstor.org/stable/245049> .
- Gramling, A.A., Krishnan, J. & Zhang, Y. (2011). Are PCAOB-Identified Audit Deficiencies Associated with a Change in Reporting Decisions of Triennially Inspected Audit Firms?. *Auditing: A Journal of Practice & Theory*, 30 (3), 59-79. DOI: 10.2308/ajpt-10048
- Gunny, K.A. & Zhang, T.C. (2013). PCAOB inspection reports and audit quality. *Journal of Accounting and Public Policy*, 32, 136-160. DOI: 10.1016/j.jaccpubpol.2012.11.002
- Habib, A. (2012). Non-Audit Service Fees and Financial Reporting Quality: A Meta-Analysis. *ABACUS*, 48 (2), 214-248. doi: 10.1111/j.1467-6281.2012.00363.x
- Hermanson, D. R., Houston, R.W., Rice, J.C. (2007). PCAOB Inspections of Smaller CPA Firms: Initial Evidence form Inspection Reports. *Accounting Horizons*, 21 (2), 137-152. doi: <http://dx.doi.org/10.2308/acch.2007.21.2.137>
- Lennox, C.S. (1999). Audit Quality and Auditor Size: An Evaluation of Reputation and Deep Pockets Hypotheses. *Journal of Business Finance & Accounting*, 26 (7), 779-805. DOI: 10.1111/1468-5957.00275
- Li, C. (2009). Does Client Importance Affect Auditor Independence at the Office Level? Empirical Evidence form Going-Concern Opinions. *Contemporary Accounting Research*, 26 (1), 201-230. DOI: 10.1506/car.26.1.7
- McKeown, J., Mutchler, J. F. and Hopwood, W. (1991). Towards an explanation of auditor failure to modify the audit opinions of bankrupt companies. *Auditing: A Journal of Practice & Theory*, 10 (1), 1-13. Retrieved from <http://search.ebscohost.com/>
- Mutchler, J.F., Hopwood, W. & McKeown, J.M. (1997). The Influence of Contrary Information and Mitigating Factors on Audit Opinion Decisions on Bankrupt Companies. *Journal of Accounting Research*, 35 (2), 295-310. Retrieved from <http://www.jstor.org/stable/2491367>
- Olson, M. W. 2008. Speech at the Association of Audit Committee Members: Remarks on PCAOB Inspections, Audit Risks and Standard-Setting Priorities. Philadelphia, May 21st.

- Palmrose, Z. (1986). The effect of nonaudit services on the pricing of audit services: further evidence. *Journal of Accounting Research*, 24 (2), 405-411. Retrieved from <http://www.jstor.org/stable/2491144>
- Public Company Accounting Oversight Board – PCAOB
 PCAOB (2012). Guide to PCAOB Inspections. *Center for Audit Quality*. Retrieved June 28, 2013 from <http://www.thecaq.org/resources/pdfs/GuidetoPCAOBInspections.pdf>
- PCAOB (2013). <http://pcaobus.org/Pages/default.aspx>
- Reynolds, K. & Francis, J. (2000). Does Size Matter? The Influence of Large Clients on Office-Level Auditor Reporting Decisions. *Journal of Accounting and Economics*, 30, 375-400. DOI: 10.1016/S0165-4101(01)00010-6
- Robinson, D. (2008). Auditor Independence and Auditor-Provided Tax Service: Evidence From Going-Concern Audit Opinions. *Auditing: A Journal of Practice and Theory*, 27 (2), 31-54. Ol: 10.2308/aud.2008.27.2.31
- Ruiz-Barbadillo, E., Gómez-Aguilara, N., De Fuentes-Barberáb, C. & García-Benaub, M.A. (2004). Audit quality and the going-concern decision process: Spanish evidence. *European Accounting Review*, 13(4), 597-620. DOI:10.1080/0963818042000216820
- Securities and Exchange Commission (2000). Final Rule: Revision of the Commission's Auditor Independence Requirements. Washington, DC: SEC, 2000. Retrieved April 12, 2013 from <http://www.sec.gov/rules/final/33-7919.htm>
- Securities and Exchange Commission (2003). Final Rule: Strengthening the Commission's Requirements Regarding Auditor Independence. Washington, DC: SEC, 2000. Retrieved April, 12, 2013 from <http://www.sec.gov/rules/final/33-8183.htm>
- Sharpe, N.R., De Veaux, R.D. & Velleman, P.F. (2012). *Business Statistics*, 2nd ed. New York: Pearson Education International
- Simunic, D.A (1980). The Pricing of Audit Services: Theory and Evidence. *Journal of Accounting Research*, 18 (1), 161-190. Retrieved from <http://www.jstor.org/stable/2490397> .
- Vittinghoff, E. & McCulloch, C.E. (2007). Relaxing the rule of ten events per variable in logistic and Cox regression. *American Journal of Epidemiology*, 165 (6), 710-718. doi:10.1093/aje/kwk052
- Watts, R.L. & Zimmermann, J.L. (1983). Agency Problems, Auditing and the Theory of the Firm: Some Evidence. *Journal of Law and Economics*, 26 (3), 613-633. Retrieved April 12, 2013 from <http://www.jstor.org/stable/725039> .
- Zmijewski, M.(1984).Methodological Issues Related to the Estimation of Financial Distress Prediction Models. *Journal of Accounting Research* 22, Supplement, 59–82. Retrieved April 12, 2013 from <http://www.jstor.org/stable/2490859>
- <http://auditanalytics.com/>
- <https://wrds-web.wharton.upenn.edu/wrds/>