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Julkaisun nimike
Tilintarkastuskertomukset ja osakemarkkinat

Tiivistelmä
Tässä tutkimuksessa tarkastellaan tilintarkastajan antaman toiminnan jatkuvuudesta (going concern) tai sisäisen valvonnan heikkouksista (internal control weakness) huomauttavan kertomusten aiheuttamia reaktioita osakemarkkinoilla. Ensiksi tarkoituksena on tutkia osakemarkkinoiden epänormaaleja tuottoja sekä volatiliteetin ja systemaattisen riskin muutoksia tilintarkastuskertomuksen julkaisemisen jälkeen. Kirjallisuuskatsaukseen perustuen osakemarkkinoiden reaktioita tarkastellaan ensisijaisesti tilintarkastuskertomuksen allekirjoituspäivämäärän ympärillä. Toiseksi tässä tutkimuksessa tarkastellaan kuinka (i) yritystä koskevan tiedon epätasainen jakautuminen omistajien ja johdon välillä, (ii) yrityksen informaatioympäristö sekä (iii) velkaan perustuvat agenttikustannukset vaikuttavat tilintarkastuskertomuksen aiheuttamiin osakemarkkinareaktioihin. Kirjallisuudessa ei ole aikaisemmin tutkittu osakemarkkinoiden reaktioita tilintarkastuskertomuksen allekirjoittamispäivämäärän ympärillä eikä edellä mainittujen kolmen tekijän (i–iii) vaikutusta reaktioihin.

Tutkimusaineisto koostuu Russell 3000 Indeksiin sisältyvistä yhdysvaltalaisista listatuista yrityksistä. Otokseen on koottu 237 toiminnan jatkuvuus –lausunnon saanutta ja 342 sisäisen valvonnan tehottomuus –lausunnon saanutta yritystä. Empiirisen tutkimuksen tulosten perusteella kyseisten mukautettujen tilintarkastuskertomusten julkaiseminen ei aiheuta tilastollisesti merkitseviä negatiivisia epänormaaleja tuottoja, mutta volatiliteetissa ja systemaattisessa riskissä on havaittavissa kasvua. Tämän lisäksi tulokset osoittavat että yrityksen informaatioympäristöllä ja velkaan perustuvilla agenttikustannuksilla on odotettu vaikutus epänormaaleihin tuottoihin sekä volatiliteetin muutokseen.

Tutkimuksen tulokset osoittavat että tilintarkastajan antamilla mukautetuilla kertomuksilla on jonkin verran vaikutusta osakemarkkinoilla, mutta reaktiot riippuvat yritysten johdon valvontaan ja informaatioympäristöön liittyvistä tekijöistä.

Asiasanat
tilintarkastuskertomus, osakemarkkinareaktio, informaatioasymmetria, informaatioympäristö, velkaan perustuvat agenttikustannukset

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Abstract

This thesis investigates the relevance of auditors' going concern and internal control reports to investors. The first purpose is to examine abnormal stock returns and changes in volatility and systematic risk around the audit report announcements. Based on the literature review the abnormal stock returns are analyzed primarily around the audit report date. The second purpose of this thesis is to examine the relationship between the relevance of the audit report information and (i) the information asymmetry between owners and management, (ii) information environment and (iii) agency costs of debt. Previous research has not studied market reactions around the audit report date or the effect of the three factors mentioned above (i–iii) on the relevance of audit reports.

The sample consists of Russell 3000 Index firms. It includes 237 firms with going concern audit reports and 342 firms with internal control weakness disclosures. The empirical analysis suggests that there are no statistically significant negative abnormal reactions to the announcement of the audit reports but there is evidence of an increase in volatility and systematic risk after the audit report date. Furthermore there is some evidence that the information environment and the agency costs of debt affect the abnormal returns and volatility and systematic risk changes.

This thesis confirms that the audit reports studied contain some relevant information to the investors. Moreover, factors related to the information environment and agency costs of debt of the firm are related to the abnormal returns.

Keywords
audit report, stock market reaction, information asymmetry, information environment, agency costs of debt

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1 INTRODUCTION

The informativeness of audit reports has been of interest for nearly thirty years. The discussion has focused on the role of auditing and the subsequent relevance of the audit report. Particularly after the events in 2001 the audit profession has been under enormous pressure and investors increasingly expect the auditors to provide warning signals on threats to client failure (Geiger, Raghunandan and Rama 2005).

Auditors, however, are not responsible for predicting failure and issuing a going concern audit report is not a prediction of impending failure. Interestingly, however, Chen and Church (1996), for example, find that going concern audit reports are useful in predicting bankruptcy, whereas Mutchler (1985) and Dopuch, Holthausen and Leftwich (1987) suggest that many going concern audit reports can be predicted using public information and they simply confirm a pattern of financial decline.

To restore and increase the reliability of accounting information after the scandals and corporate governance failures, and to protect the interests of investors the Sarbanes-Oxley Act (SOX 2002) was enacted in the U.S. It placed increased responsibilities on audit committees, management and auditors. Section 404 of the Sarbanes-Oxley Act (SOX 2002) together with Auditing Standard No.2 (PCAOB 2004) required that the annual report of public firms must contain a management's assessments of the internal control over financial reporting and an auditor's report on the effectiveness of internal controls and on the assessment made by the management. The auditor's report on the effectiveness of internal controls signals potential weaknesses and risks in the firm's control environment that may affect the reliability of the accounting information. In comparison to the going concern problems, internal control weaknesses are more difficult to foresee using financial information, but on the other hand the implications of such reports on the future viability of the firm are not as severe.

Does the audit report announcement convey new and important information for the decision-making of the investors and does this information have an affect on the stock markets? The opinions and the empirical evidence from prior research provide conflicting answers to this question. Auditing plays an essential role in the communication process between the firm and the owners or the financial markets as a whole. The auditors are contracted by the shareholders to monitor and ensure that the financial reporting provided by management fairly presents, in all material aspects, the financial position of the auditee. The financial statements of publicly traded firms are required by law to be audited before being filed. This is how the regulators want to ensure that the published financial information is reliable.

In the majority of firms all issues that the auditor highlights during the audit process, are solved and corrected before the financial statements are published, and thus the auditor usually has no reason to give any additional information in the audit report. In these cases the auditor issues a standard report with an unqualified opinion. There are, however, exceptions. In these firms the financial statements need to be accompanied by some additional information. There is a variety of report types that the auditor can issue, but in practice for publicly traded firms the audit report contains an unqualified opinion with additional information. The most typical reasons for deviations from standard reports are related to either some kind of uncertainties or changes in accounting principles applied in the firm.

Theoretically considered, the relevance of the audit report in such cases where the auditor decides to diverge from the standard report would seem obvious. But as Wallace (1980, 1987 and 2004) suggested, auditing can serve multiple roles, the auditor may be a monitor, a source of information or an insurer. The question of interest in this study, the relevance of audit reports to shareholders, has been approached in existing research in two ways: (i) experimental studies examining the relevance of audit opinions in the decision-making process which measure the claimed behavior of decision-makers, and (ii) archival studies focusing on actual behavior through financial market reactions around the audit report information announcement.

Experimental studies have most commonly used loan decision-makers as users of audited financial statements. Several experimental studies provide evidence that the audit reports have a significant influence on the financial conditions imposed by the lender (e.g. Bamber and Stratton 1997; LaSalle and Anandarajan 1997; Guiral-Contreras, Gonzalo-Angulo and Rodgers 2007). But on the contrary, Lin, Tang and Xiao (2003) and Bessel, Anandarajan and Umar (2003) do not find the information contained in a non-standard audit report to be of importance to the financial statement users' decision-making process. Generally, Guiral-Contreras et al. (2007) divide the research on the information content of audit reports into three fields. The first deals with how the level of auditor attestation affects the loan officers' decisions (Johnson, Pany and White 1983; Wright and Davidson 2000). The second line studies how the audit report format affects the loan officers' decision-making –processes (Miller, Reed and Strawser 1993). The third line of research focuses on differences in the relevance of qualified and unqualified audit reports (LaSalle et al. 1997; Bessell et al. 2003).

However, in this dissertation the main interest is on the actual behavior of the investors when a firm receives either a going concern audit report or an internal control weakness report. The behavior of investors can be considered to reveal whether auditing and the audit report serve the information role mentioned above and whether these two types of audit reports contain relevant information for investors' decision-making. The studies closely related to this dissertation can be divided into three categories according to their approach. First, studies examining the abnormal stock returns in a short event window around the expected audit

report announcement (Dodd, Dopuch, Holthausen and Leftwich 1984; Chen, Su and Zhao 2000; Pucheta, Vico and Garcia 2004; Beneish, Billings and Hodder 2008; Hammersley, Myers and Shakespeare 2008). Second, Taffler, Lu and Kausar (2004), Ogneva and Subramanyam (2007) and Herbohn, Ragunathan and Garsden (2007), Kausar, Taffler and Tan (2009) study whether the stock market underreacts in the 12-month period subsequent to the announcements of the audit reports. Third, studies approach the question from a different perspective, as for example Chen et al. (1996) who study the market reactions to bankruptcy filings for firms with and without a going concern audit report or Fields and Wilkins (1991) and Fargher and Wilkins (1998), who examine the market reactions after audit qualification withdrawal announcements.

The most consistent results on the relevance of audit reports have been found on the going concern audit reports. Fleak and Wilson (1994) and Jones (1996) examine the abnormal stock reaction to going concern audit reports when they are expected or unexpected. Unexpected audit reports are defined as those that are inconsistent with previously known information about the firm's financial position. Both papers find that unexpected going concern audit reports are associated with abnormal returns.

Chen et al. (1996) and Holder-Webb and Wilkins (2000) examine the reactions to bankruptcy filings between firms with going concern audit reports and firms without. The results are identical, firms receiving going concern opinions experience less negative abnormal returns after the bankruptcy filing. The findings are consistent with the hypothesis that going concern audit reports contain relevant information. Carlson, Glenzen and Benefield (1998) use a matched-pair sample to investigate the differences in abnormal returns between a group of going concern audit report firms and a group of non-going concern audit report firms. The difference in stock returns is found to be significant, again confirming the relevance of going concern audit reports.

Finally, Taffler et al. (2004) and Ogneva et al. (2007) study the stock market underreaction to going concern audit report disclosures in the following 12-month period. The results are inconsistent, Taffler et al. (2004) find a significant underreaction in the U.K., while Ogneva et al. (2007) (in the U.S. and Australia) and Herbohn et al. (2007) (in Australia) are unable to document the same. Herbohn et al. (2007) on the other hand find a significant reaction in Australia in the 12-month period prior to a first time going concern audit report. Finally, Kausar et al. (2009) find, contrary to Ogneva et al. (2007), that there is a stock market underreaction to going concern audit reports in the U.S.

1.1 Purpose, relevance and hypothesis of the study

This dissertation uses data from Russell 3000 Index firms listed in the U.S. This data is used because the U.S. market is the only market that has a sufficient num-

ber of going concern audit reports issued to publicly traded firms. Additionally, auditor's internal control weakness disclosures are mandated by the Sarbanes-Oxley Act (SOX 2002) and therefore available only for the firms listed in the U.S. stock exchanges.

The purpose of this study is two-fold. The first purpose is to investigate the relevance of going concern audit reports and auditors' internal control weakness disclosures by studying abnormal stock returns and changes in volatility and systematic risk around the audit report date. To test the robustness of the findings also the 10-K report filing date is applied as the event date. The second purpose of this study is to examine whether firm specific characteristics related to the conflict of interests, monitoring and accounting information affect the relevance of audit reports. The relationship between firm characteristics (information asymmetry, information environment and agency costs of debt) and stock market behavior (abnormal stock returns, volatility changes and systematic risk changes) around audit report announcements is studied.

Related to the first purpose of this dissertation, there are four hypotheses to be tested (in this list the numbering of the hypotheses (in parenthesis) follows the numbering of the hypotheses as they are developed in the latter part of this dissertation):

1. Going concern audit reports are associated with negative abnormal stock returns. (H_1)
2. Auditors' internal control weakness disclosures are associated with negative abnormal stock returns. (H_5)
3. Going concern audit reports are associated with an increase in volatility and systematic risk. (H_9)
4. Auditors' internal control weakness disclosures are associated with an increase in the volatility and the systematic risk. (H_{13})

Existing studies on abnormal stock returns to audit report information announcements use the event study method. In a short event-window examination, the identification of the event date or event period is one of the most fundamental questions. Since if the reaction is measured in the wrong period, it may actually measure some other event and thus the results lose their reliability. In audit report research this issue has been discussed extensively and several alternative event dates have been used, even in the same papers. The most obvious event date is the date when the annual report is filed with the stock exchange, in the U.S. the 10-K filing date. This date has consequently been used in the majority of the studies (e.g. Chow and Rice 1982; Ameen, Chan and Guffey 1994; Carlson et al. 1998; Beneish et al. 2008). The problem with this date is that the audit report accompanies the annual report, which also contains e.g. the annual earnings announcement.

Studies have attempted to solve this problem first by concentrating on audit reports attracting media attention (e.g. Dopuch, Holthausen and Leftwich 1986; Fargher et al. 1998). Media disclosure dates are considered to be relatively free from noise from simultaneous disclosures and thus the use of this date is warranted. Later the relevance of audit reports has been studied using an indirect approach to resolve the event date noise. Here the aim is to investigate the abnormal returns of some other related announcement with less noise. For example, Chen et al. (1996) study the reactions to bankruptcy filings and expect that a bankruptcy announcement for a firm that receives a going concern audit report results in a smaller negative stock market reaction if the audit report contains information relevant to the investors. Again, this is another approach to solving the problems associated with event date selection. In a similar vein, Fields et al. (1991) and Fargher et al. (1998) study the reactions around audit qualification withdrawals, which are expected to neutralize the qualified audit report and thus contain positive information. Finally, studies have approached the event date problem using estimates of when the first day of trade on the audit report information was (Soltani 2000; Pucheta et al. 2004).

The selection of the alternative event date (i.e. alternative to the 10-K report date) in this study follows the findings of Carter and Soo (1999) and Knechel, Naiker and Pacheco (2007), who show that the stock market reacts as early as on the date of the actual event (e.g. auditor switching in Knechel et al. 2007), while most other switching studies have concentrated on a less timely date, the filing date of the 8-K report. In this study the event date is consequently the date of the actual event, i.e. the date when the auditor has issued the audit report, rather than the date of the 10-K report, which is filed at a later date. Results applying this event date have not been reported previously. Soltani (2000) reported to have conducted the statistical tests also using this date, but did not report the results.

In addition to the abnormal stock returns, this dissertation also analyzes the market effects of audit reports by focusing on the change in volatility and systematic risk. First, the volatility of the stock returns measures the uncertainty surrounding the estimation of the firm's stock price. As Kim and Verrecchia (1991) show, volatility is a function of the precision of the information available and the amount of private information. The going concern audit report has the potential to affect volatility by either increasing the precision of the available information by emphasizing the underlying uncertainties or, as is more likely, increasing noise around the available information by introducing information which may have implications for the cost of capital of the firm or increase the likelihood of bankruptcy.

Second, systematic risk provides more information on the potential effects of the audit reports. Systematic risk measures how sensitive the firm's stock is to market movements. If an audit report issued to a firm is considered to be firm specific information which does not affect the overall stock market performance, then it is expected that there is a change in the systematic risk of the particular firms stock

after the audit report announcement, assuming that the information is relevant. Fargher et al. (1998) study the systematic risk changes around audit qualifications and qualification withdrawals. They find changes in systematic risk to be significant for firms announcing audit qualification withdrawals and those firms with continuing uncertainties have significantly higher levels of systematic risk. However, they do not detect an increase in systematic risk to announcements of qualified audit reports.

The second purpose of this study is to investigate how firm characteristics affect the relevance of audit reports. Related to this purpose, the dissertation tests the following three sets of hypotheses (in this list the numbering of the hypotheses (in parenthesis) follows the numbering of the hypotheses as they are developed in the latter part of this dissertation):

1. The *information asymmetry* between the management and the owners has:
    a. a negative affect on the market reaction to going concern audit reports. (H_2)
    b. a negative affect on the market reaction to auditors' internal control weakness disclosures. (H_6)
    c. a positive affect on the change in volatility and systematic risk after the going concern audit reports. (H_{10})
    d. a positive affect on the change in volatility and systematic risk after the auditors' internal control weakness disclosures. (H_{14})
2. The *information environment* of the firm has:
    a. a positive affect on the market reaction to going concern audit reports. (H_3)
    b. a positive affect on the market reaction to auditors' internal control weakness disclosures. (H_7)
    c. a negative affect on the change in volatility and systematic risk after the going concern audit reports. (H_{11})
    d. a negative affect on the change in volatility and systematic risk after the auditors' internal control weakness disclosures. (H_{15})
3. *Agency costs of debt* have:
    a. a positive affect on the market reaction to going concern audit reports. (H_4)
    b. a positive affect on the market reaction to auditors' internal control weakness disclosures. (H_8)
    c. a negative affect on the change in volatility and systematic risk after the going concern audit reports. (H_{12})
    d. a negative affect on the change in volatility and systematic risk after the auditors' internal control weakness disclosures. (H_{16})

The question of whether conflict of interests is related to the relevance of audit reports has not been examined in the literature. According to the suggestions in Jensen and Meckling (1976) and Jensen (1986, 1989) there is more conflict in firms with low management ownership. In this study it is expected that low levels

of management ownership will increase the information asymmetry between the owners and the managers, making the relevance of auditing greater in these firms.

The implication of this expectation is that the greater the information asymmetry is between the management and the owners, the more relevant the audit report should be and consequently, the greater the reaction on the stock markets. This expectation is also supported by other studies in auditing. Chow (1982) finds some evidence that the level of asymmetries is positively related to demand for auditing. Later, Fan and Wong (2005) find that conflict of interests affects the likelihood of firms employing brand name auditors (Big 5 -auditors). Similarly, Gul and Tsui (1998, 2001) and Nikkinen and Sahlström (2004) find that the management ownership has a significant relationship with audit fees. Finally, Carey, Simnett and Tanewski (2000) find that the demand for auditing is smaller in family businesses where the conflict of interests is expected to be smaller. All these findings support the assumptions of this study, that the role of auditing and audit reports is affected by the level information asymmetry.

Information asymmetry between managers and investors is an essential concern for investors and other market participants. Insiders are able to make trading profits at the expense of outsiders if they have an information advantage. If investors are aware of the information asymmetry and the fact that insiders can profit on value relevant information before public disclosure, they can alternatively adapt their trading behavior (Admati and Pfeiderer 1988), leave the market (Merton 1987) or respond to the information asymmetry and the risk of insider trading by gathering information themselves or acquiring information from intermediaries (Barth, Kasznik and McNichols 2001). The information environment is closely related to the latter choice of action and refers to the richness of the information available concerning the firm. Specifically, for larger firms there is greater distribution of firm-specific information on the market from both accounting and non-accounting sources (Mitra and Cready 2005). In richer information environments, management is exposed to monitoring by a greater number of external agents.

Agency costs of debt refer to the conflict of interests between the shareholders and the bondholders. This conflict has an affect on investment and financing decisions (Jensen et al. 1976; Myers 1977; Smith, Clifford and Warner 1979), as well as the level of management discipline (Agrawal and Mandelker 1982; Sengupta 1998; Ahmed, Billings, Morton and Stanford-Harris 2002, Francis, LaFond, Olsson and Schipper 2005; Beatty, Weber and Jiewei 2008; Bharath, Sunder and Sunder 2008; Ertugrul and Hedge 2008). Two reasons are suggested here as to why the agency costs of debt have an affect on the relevance of audit reports. First, due to the increased monitoring, management opportunism and actions performed in self-interest are restricted. Second, debt financing is expected to increase the quantity and quality of information disclosed, and therefore the information risk of the investors is lower. As a result, the information content of annual and quarterly filings are of less relevance to the investors (Callen, Livnat and Segal 2006).

1.2 Contribution of the study

This study contributes to the existing literature in several respects. First, it examines market reactions to auditors' going concern and internal control weakness reports around the date of the audit report, while also testing the reaction around the 10-K report filing date. Existing studies have identified two problems concerning the direct measurement of abnormal market reactions to audit report announcements. The first issue is the difficulties in identification of the first day of trade on the audit report. This issue is discussed in the early studies by Dodd et al. (1984) and Craswell (1985), but still in the most recently published papers, e.g. Pucheta et al. (2004) and Herbohn et al. (2007), researchers continue to discuss this question. The second problem related to the measurement of abnormal returns is concurrent disclosures of relevant information. Most commonly the problem here is that the audit reports are filed with the stock markets together with the annual earnings information. Separating the proportion from the total abnormal reaction that is caused by the audit report is difficult if not possible.

The audit report date is the date up to which the auditor has taken account of all available information in forming the conclusions. Typically this is also the date on which the audit report is presented to the firm. In relation to the above mentioned problems, this event date is timelier than any of the event dates used in existing research to measure the direct impact of audit report announcements on the stock returns.

Timeliness here means that the audit report date is an earlier date than other dates used in existing studies. Furthermore, the other important benefit of this event date is that there are generally no concurrent disclosures of annual earnings information, or any other scheduled firm specific disclosures. Finally, the selection of this date is supported by the literature on abnormal reactions to various items contained in 8-K reports. Carter et al. (1999) and Knechel et al. (2007) find evidence of an abnormal market reaction on the date of the actual event rather than the 8-K report filing date. The question remains unanswered, however, whether the information is transferred publicly to the public market or if it measures informed trading. Informed trading is generally defined as the trading activities of all traders who are informed after an event occurs at a firm but before it is released to the market (see e.g. Tookes 2008, for a definition).

Second, this study contributes to the existing literature by investigating the volatility and systematic risk changes around the audit report announcements. Existing studies have mainly focused on analyzing abnormal stock returns associated directly or indirectly with going concern or internal control reports. However, stock price reactions may be a result of revisions in expected magnitude of future cash flows and in the risk of expected future cash flows. Change in volatility and change in systematic risk are useful for measuring whether the audit reports increase the uncertainty and riskiness of the firm. Fargher et al. (1998) examine the change in systematic and unsystematic risk after qualified audit report announce-

ments and announcements of qualification withdrawals. However, Fargher et al. (1998) use all types of qualifications for analyzing the change in risk. This study continues the work of Fargher et al. (1998) in three respects. First, audit report date is here considered to be an alternative date of the information release. Second, this study analyzes in addition the change in volatility. Third, only first time going concern audit reports are studied.

Finally, this study contributes to the literature on the stock market reactions to audit reports by investigating whether firm characteristics related to the information asymmetry, information environment or agency costs of debt are related to the market effects of audit report announcements (abnormal returns, change in volatility and change in systematic risk). Existing studies have not considered these factors that according to literature (Ryan 2005, Lennox and Park 2006; Callen et al. 2006) affect the relevance of accounting information announcements.

1.3 Structure and main results of the study

The remainder of this dissertation is structured as follows. In Chapter 2 the economic framework for auditing is presented. The main focus in this review is on conflict of interests, which suggests that auditing serves to monitor the behavior of management on behalf of the owners. Auditing is effective in managing the information asymmetry and conflicts of interest between managers and owners. It emerges that characteristics affecting the conflict of interests can be expected to be related to how relevant the audit report information is for the owners.

Chapter 3 presents a review of the literature on the relevance of audit reports. The question has been approached by two means. First, the market reaction to audit report announcements has been studied since the late 1970's. This branch has focused on measuring the relevance of audit reports using stock market reactions. The second branch has concentrated on experimental research, where the main question is whether the audit report affects the financial statement users' decisions or decision-making processes. The most important findings for the purposes of this dissertation are that since the mid-1980's there has been an ongoing discussion about the timing of transmitting audit report information to the stock markets and finally that issues affecting conflict of interests have not been studied in the context of the relevance of audit reports.

In Chapter 4 the data environment is presented. Initially, the chapter outlines the regulations on auditors' reporting of financial statements and on internal controls over financial reporting. Moreover, the conclusion from reviewing the legislation and practical evidence is that two main types of audit reports are issued to public firms which may be relevant to investors: going concern audit reports and the auditors' internal control weakness disclosures.

Chapter 5 presents new evidence concerning the event date problem, the relevance of going concern audit reports, and the relationship between going concern audit reports and firm characteristics. First, existing studies have recognized that a key issue for reliable results is the accurate identification of the event date. This study uses the findings from other types of information announcements and focuses on the dates of the audit report and the filing of the 10-K report. The analysis provides some evidence of statistically significant negative abnormal returns around the date of the 10-K report, but not around the audit report date.

Moreover, the results from the regression analysis in Chapter 5 confirm the hypothesis on the relationship between information environment, agency costs of debt, and the relevance of going concern audit reports. The richness of the information environment and the management discipline imposed by the agency costs of debt both reduce the negative abnormal returns around the going concern audit report date. This is consistent with the suggestion that these two factors may restrict the insiders of the firm from gaining on private information and increase investors' possibilities to foresee firm-specific problems.

Chapter 6 investigates the effect of internal control weakness disclosures on abnormal stock returns. The evidence from the univariate analysis suggests that the auditors' reports on internal controls do not result in negative abnormal returns, but rather a positive reaction is observed. Furthermore, more negative reactions are found for firms where the management has reported efficient internal controls and the auditor reports weaknesses in internal controls. Conflicting results from the internal control assessments may cast some doubt on the abilities of management, and therefore the reaction is more negative. Moreover, when firm characteristics are controlled for the results show that the information environment is negatively related to abnormal returns.

Chapter 7 presents first the results on the uncertainty and risk affects of going concern audit reports and second on the relationship of firm characteristics and uncertainty and changes in risk. The change in systematic risk after audit qualifications has been studied by Fargher et al. (1998). However they found no significant direct relationship between audit qualification announcements and changes in risk, but the relationship between qualification withdrawals and changes in risk was documented. The results of this dissertation reveal that there is a significant change in systematic risk after the going concern audit report date and the 10-K report date. The regression analysis does not support any hypothesis on the relationship between the relevance of going concern audit reports and firm characteristics.

Chapter 8 investigates the volatility and risk effects of auditors' internal control weakness disclosures. There is evidence suggesting that systematic risk increases significantly after the internal control report. The regression results show further that the information environment of the firm is negatively related to the change in volatility.

Finally, Chapter 9 concludes the study. First, the theoretical background used to develop the hypotheses is summarized. Next, the hypotheses and the main findings of the dissertation are presented and discussed. Finally, the implications are discussed.

2 ECONOMIC FRAMEWORK FOR AUDITING

This section describes and develops the economic framework for auditing in the business environment. The first focus is on the characteristics in firms behind why and how the need for auditing arises. Second, an explanation on what issues auditing is expected resolve is evinced. Finally, the demand for auditing and its various roles are reviewed.

2.1 Contracting view of the firm

In economic theory the term “firm” was first defined by Coase (1937) as consisting of a system of relationships which come into existence when the direction of resources is dependent on an entrepreneur. The paper suggests that operating in an open market and using the market price mechanism involves costs and that the costs of negotiating and concluding a separate contract for each exchange transaction are not eliminated when there is a firm, but rather that they are reduced. The paper thus concludes that the advantage of forming an organization to direct the resources is cost-saving. Jensen (1983) elaborates further that these contracts specify the performance evaluation system, the reward system and the decision rights within the organization.

Furthermore, Coase (1937) specifies in his research why some activities are handled by firms and others by open markets. This study led the way to research to further examine the characteristics of the firm. Alchian and Demsetz (1972) explain that there are circumstances or different kinds of organizational arrangements under which the cost of managing resources in a firm is lower than the cost of allocating resources through market transactions.

The firm is identified by Alchian et al. (1972) as a contractual structure with joint input production, several input owners and one party who is common to all the contracts of the joint inputs. This party last mentioned is empowered to renegotiate any contract independently of contracts with other input owners; additionally that party holds the residual claim and has the right to sell his/her central contractual status. This central party is the owner.

2.2 Agency theory

By definition, agency theory attempts to describe a relationship where one party (the principal) delegates work to another (the agent). Furthermore, it is concerned with resolving the problems in a relationship with conflict of interests and risk sharing when attitudes toward risk diverge (Eisenhardt 1989). The development of agency theory has resulted in two strands of literature which address the same problem: positive agency theory and principal-agent –theory (Jensen 1983). Ac-

cording to Jensen (1983) and Eisenhardt (1989), positivist research has focused almost exclusively on the relationship between the owner and the manager in public firms. Above all, positivist literature has aimed at identifying situations where the interests diverge and describing instruments that limit the agent's opportunistic behavior. Eisenhardt (1989) acknowledges the particular influence of three articles on the positivist agency literature: Jensen et al. (1976) on the ownership structure of the corporation, Fama (1980) on the role of efficient capital markets in controlling the behavior of managers and finally Fama and Jensen (1983) on the role of board of directors as a monitoring instrument.

The principal-agent literature has concentrated on modeling the general relationships between the principal and the agent (Jensen 1983). As a result the theory is more applicable e.g. to employer-employee, buyer-supplier and other agency relationships. Consequently, the literature is generally more mathematically orientated than is the positive agency literature (Eisenhardt 1989). Furthermore, Eisenhardt (1989) describes the heart of principal-agent theory as the trade-off between the cost of measuring the agent's behavior and the cost of measuring outcomes and transferring risk to the agent.

A general description of an agency relationship states that it is a contract under which one or more principals engage another person or persons as their agent(s) to perform some service on their behalf. To enable this performance, delegation of some decision making authority to the agent is needed (Jensen et al. 1976). As previously mentioned, the financial accounting literature focuses mainly on the positive agency literature, i.e. the relationship between the owner and the manager. However, as Wallace (1980) suggests, this relationship is also easy to observe between other actors such as employers-employees, creditors-shareholders, government-taxpayers, as the principal-agent theory illustrates.

The standard positive agency theory involves a principal (owner) contracting an agent (manager) to act on his/her behalf. As Jensen et al. (1976) explain, contracting involves delegating decision making authority to the agent. This distinguishes ownership from control. If both parties to the relationship strive to maximize their utility, there is the possibility that an agent will choose to act in his/her own interests, not in those of the principals, this results in conflict-of-interest problems (Jensen et al. 1976). To limit the divergences from his/her own interests, the principal has the option of setting up incentives for the agent and limiting the conflicting activities of the agent by establishing appropriate means of control to mitigate conflicts of interests (Jensen et al. 1976).

As a conclusion to the description above, it can be noted that agency theory views the firm as a network of contracts. This view constitutes one of the major foundations of theoretical accounting. The theory helps to understand and explain the behavior of business actors. Ross (1973) and Jensen et al. (1976) developed the theory of ownership structure of a firm. This theory is developed on the basis of a distinction between ownership and control. From this point of view, the positive

agency literature examines the use of information for contracting purposes, for example, how information can be used to persuade the manager to act in the interests of the owner (Ng 1978).

According to Eisenhardt (1989) agency theory focuses on resolving two problems occurring in the agency relationship: agency problems and the problem of risk sharing. An agency problem occurs when the interests of the principal and agent conflict and it is difficult or expensive for the principal to monitor the agent's actions. On the other hand, a problem of risk sharing occurs when the principal and agent have different attitudes towards risk.

Agency costs are the expenses incurred due to the contracting process (Adams 1994). The principal can, in general, reduce agency costs by monitoring. However, monitoring may also involve costs. Fama et al. (1983) define agency costs as the costs of structuring, monitoring and bonding a set of contracts among agents with conflicting interests. Agency costs also include the costs due to the fact that it is not appropriate to monitor all contracts perfectly (Jensen 1983). Adams (1994) observes that, in order to ensure the optimal level of interest alignment and information asymmetry, both principals and agents will incur contracting costs. For example, principals will incur monitoring costs from subjecting the financial statements to external audits. Agents, on the other hand, incur costs e.g. for external financial reporting and internal controls (Adams 1994).

Alchian et al. (1972) note that the theory of rational expectations underlies the demand for monitoring. This concept expects actors to take into account all available information that influences the outcome of their decisions, and that they use this information intelligently and therefore do not make systematic mistakes. In other words, principals cannot be consistently deceived by agents.

According to Alchian et al. (1972) the main implication of rational expectations theory for agents is that principals foresee the divergence between the interests of principals and agents. Therefore, the principals will insist on compensation for the risk of loss they perceive through adjustment of the agent's wage (Wallace 1980 and 1987). This causes the agent, rather than the principal, to reduce agency costs and the demand for monitoring activities (Alchian et al. 1972).

2.3 Conflict of interests

As noted, if in an agency relationship ownership is separated from control and both agent and principal strive to maximize their own utility, this will result in conflict of interests (Jensen et al. 1976). Studies on managerial compensation have generally found that firm size increases manager remuneration (Jensen and Murphy 1990; Conyon and Murphy 2000). This provides management with an incentive to focus on firm size growth, rather than growth in shareholder returns. Managers also tend to pursue growth by diversifying, which reduces manage-

ment's industry specific risk and strengthens their job security. However, Lang and Stulz (1994) find that shareholder returns are greater in undiversified firms and they also show that the value of the firms is reduced as they diversify further.

According to Jensen (1986, 1989), managers of low growth and high free cash flow firms in particular are involved in non value-maximizing activities. Managers increase perquisite consumption and compensation as well as manipulation of accounting numbers at the expense of shareholders (Jensen 1989; Shleifer and Vishny 1989; Lang, Stulz and Walking 1991; Christie and Zimmermann 1994). For a firm to operate efficiently and maximize shareholder value, free cash flow must be distributed to shareholders rather than retained (Jensen 1989). Accordingly, Jensen (1986) concludes that the agency costs are higher for firms with low growth and high free cash flow.

The free cash flow hypothesis is further extended by considering the effects of separating ownership from control. Following theories from Jensen et al. (1976) and Jensen (1986) on the separation of ownership and control, agency costs of free cash flow are more likely to occur in firms with low management ownership. This is because managers' interests are more aligned with shareholders' interests when they own shares in the firm. Agrawal and Jayaraman (1994) argue that the agency costs of free cash flow are a decreasing function of management ownership.

If agency costs are higher in low growth – high free cash flow firms, this would imply greater demand for monitoring on the part of the principal and therefore the relevance of auditing could also be greater. This phenomenon is expected to be present particularly in firms where ownership is separated from control as Gul et al. (1998, 2001) proposed.

High level of free cash flow is also suggested to affect the assessment of the inherent risk, i.e. the risk of a material misstatement in the unaudited financial statements by the auditor (Gul et al. 1998, 2001). Firms with agency problems caused by free cash flow are thus likely to pay higher audit fees (Gul et al. 2001; Nikkinen et al. 2004). Gul et al. (2001) also suggest that the positive association between free cash flow and audit fees is stronger for firms with low levels of management ownership. However, this association is weaker in firms with high levels of debt (Gul et al. 2001).

2.4 Information asymmetry, management ownership and information environment

An agency theory perspective also suggests that the principal-agent relationship may be associated with information asymmetry. The agent, as the party with greater involvement in the firm, has access to information which may not be available for the principal without cost. The agent has the opportunity to use this

information to his/her own advantage. This generates the need for regulated accounting and financial reporting.

Because of rational expectations the agent usually has incentives to publish the accounting figures. Accounting numbers are frequently used by owners to monitor whether contractual obligations have been met and to restrict managers' power to promote personal interests (Watts and Zimmerman 1979). However, financial reporting of accounting numbers is not usually considered an information system for managers, since the firm's internal management accounting is assumed to capture the firm's actual financial position for the purposes of management (Ng 1978).

Accounting and auditing are essential factors in monitoring the agency relationship. Healy and Palepu (2001) argue that the need for financial reporting and disclosure arises from information asymmetry and conflict of interests between managers and outside shareholders. Furthermore, the credibility of management disclosures is enhanced by regulation, auditing and capital market intermediaries (Healy et al. 2001). Accounting numbers are of little value unless they are prepared according to generally accepted standards (regulation) and unless compliance with these standards is monitored (auditing). Therefore, the role of auditing is associated with both conflict of interests and information asymmetry and thus it has indeed a significant role in monitoring agency contracts.

A unique feature in financial reporting is that the owner does not have full control over what accounting information system is being applied and what will be reported (Ng 1978). However, the generally accepted accounting principles guide to a certain extent the methods chosen by the manager and the existence of external auditing examines the application of these principals, but ultimately within those limitations the manager still decides, based on his/her own interests, what to report and at what frequency (Ng 1978).

As pointed out by Lennox et al. (2006), managers disclose value relevant information to owners and investors to reduce the information asymmetry. A reduction in information asymmetry increases the liquidity in the firm's stock and reduces the cost of capital (Diamond and Verrecchia 1991). Verrecchia (2001) uses a definition "information asymmetry component of the cost of capital", by which he means the discount that e.g. the firm provides to investors to accommodate the adverse selection problem, when there exists different degrees of informedness. A reduction in information asymmetry also reduces the opportunity to profit from informed trading (Diamond 1985). Information asymmetry can be reduced primarily by increasing disclosure activity (Verrecchia 2001; Brown, Hillegeist and Lo 2004).

Costs incurred from principals' monitoring actions are one component of agency costs (Jensen et al. 1976). Monitoring costs in a firm accrue when there is a difference between owners' and managers' interests. Since less monitoring is re-

quired when owners' and managers' interests are aligned, Jensen (1986) suggested that agency costs are lower for firms with high levels of management ownership. Studies show that audit fees, as a part of monitoring costs, are higher for firms with lower management ownership (e.g. Gul et al. 2001; Nikkinen et al. 2004). Similarly, Chow (1982) finds some support for the view that the level of agency problems is positively related to demand for auditing and later Fan et al. (2005) find that agency problems affect the likelihood of firms employing brand name auditors (Big 5 -auditors).

Information asymmetries between the firm and the investors can also be mitigated if the firm has a richer information environment. Information environment refers to the amount and the quality of firm and market-specific information available for investors. Information for decision-making may be gathered from various accounting and non-accounting sources. The primary sources of information are the regulated disclosures of the firm. One purpose of disclosure regulation is indeed the reduction of the information gap between the firm and its investors and between informed and uninformed investors (Healy et al. 2001).

In addition to the firm disclosures, the richness of the information environment is affected by private information production and disclosure. There are at least two significant sources in addition to the firm that produce and disclose information: analysts and news agencies. The disclosure regulation imposes more strict disclosure requirements on larger firms. And additionally, as public interest is greater in larger firms, the analysts and news agencies concentrate their information production on these. As a consequence, large firms have on average a richer information environment.

Recent evidence documents that the richer information environment of larger firms constrains managements' abilities to behave opportunistically, e.g. in managing abnormal accruals (Mitra et al. 2005). The profitability and the frequency of insider trades, both of which proxy for information asymmetry and private information, are documented to have a negative relationship with analyst following and firm size, and the informativeness of accounting information reduces the frequency of insider trades (Frankel and Li 2004; Ryan 2005). Piotroski and Roulstone (2004) suggest that informed trading and analysts forecasting activity all affect the amount of disclosure information that is impounded in the share prices, but the type of information that they impound depends on each party's information advantage. Insiders and institutions incorporate firm-specific information, while analysts convey industry-level information. All in all, this evidence indicates that the richness of the information environment is effective in reducing information asymmetries and constraining management's opportunistic behavior.

Finally, information environment is also documented to affect the information content of SEC filings. Disclosure information such as SEC filings that are value relevant causes investors to revise their expectations concerning discount rates and future free cash flows. However, Callen et al. (2006) find that SEC filings

contain less value relevant information at the SEC filing date for firms with a higher proportion of long-term sophisticated investors. This is consistent with the perception that sophisticated investors are likely to produce their own and use information disclosed by other sources to assess the firm before the SEC filings become available. In other words, in a richer information environment sophisticated investors are able to anticipate forthcoming disclosures.

2.5 Agency costs of debt

The benefits and costs of debt financing have been discussed in the literature for a long time. Jensen et al. (1976), Myers (1977) and Smith et al. (1979) suggest that the interests of shareholders and bondholders conflict over the firms investment and financing decisions. The typical conflict is that the bondholders apprehend that if not limited, the shareholders expropriate wealth from the bondholders by investing in projects that are riskier than the current projects. While shareholders capture most of the gains if such actions pay off, the bondholders bear most of the risks in case of failure (Jensen et al. 1976).

Bondholders have the option to limit the opportunistic behavior when engaging themselves in a debt contract. This can be done by insisting on increased monitoring (Jensen et al. 1976), writing restricting covenants (Smith et al. 1979), shortening the maturity time of debt (Myers 1977), demanding a higher interest rate (Bergman and Callen 1991) or demanding financial reporting conservatism (Ahmed et al. 2002). The costs of debt can be summarized to consist of two components: (i) the loss in firm value due to suboptimal investment decisions and (ii) the contracting costs that the firm uses to mitigate the shareholder-bondholder conflicts (Billett, King and Mauer 2007).

Shareholder-bondholder conflicts are likely to increase as the probability of debt payments diminishes. Bodie and Taggart (1978) show that underinvestment will increase during periods of financial distress because covenants will start increasing the payments from new investments' value to bondholders when default seems more likely. Beatty et al. (2008) provide evidence that as the probability of default increases lenders are more likely to demand financial reporting conservatism and conservative contract modifications. Similarly, Billett et al. (2007) find that more restricting covenants are increasingly used to control shareholder-bondholder conflicts in leveraged and growth firms, and less restricting covenants when the proportion of short-term debt is higher.

Several studies have examined the relationship between management monitoring and agency costs of debt. Agency costs of debt are likely to be lower when management discipline and direct monitoring are higher. Agrawal and Mandelker (1982) suggest that the monitoring imposed by capital markets and contractual methods both may help discipline managers and avoid expropriation of shareholder or bondholder wealth, and therefore align the interests of management and

shareholders/bondholders. Ertugrul et al. (2008) find that increasing the board members' incentives for more effective monitoring will discipline managers, decrease agency problems and thus result in decreased bond yield spreads. Anderson, Mansi and Reeb (2003) show that ownership structure is associated with agency costs of debt. In detail, they find that founding family firms have such organizational structures, which generate strong incentives for commitment of management to the firm and the family to monitor the firm, and this also protects the interests of bondholders.

Finally, there is considerable evidence that accounting information quality and quantity affects the debt financing conditions. Accounting information quality affects the information risk of bondholders and is therefore expected to affect debt financing. Sengupta (1998) finds a relationship between analyst-based evaluations of aggregate disclosure efforts and cost of debt. Francis et al. (2005) report that firms with lower accounting quality have higher interest expenses and lower debt ratings than firms with higher accounting quality. Bharath et al. (2008) find that the accounting quality affects the choice of debt market (private vs. public), with lower accounting quality firms preferring private debt (i.e. bank loans). Additionally, Bharath et al. (2008) report that in private markets the accounting quality affects the price as well as the maturity and covenants, whereas in the public debt the price is more likely to be affected.

2.6 Conflict of interests and the demand for auditing

Contracts between principals and agents will not reduce the costs of conflicts unless the parties can determine whether the contract has been breached. Therefore there is a natural demand for monitoring (Watts et al. 1986). The literature suggests that accounting plays an important role in contract terms and monitoring these terms. This establishes the demand for accounting. Reporting of accounting figures, i.e. financial reporting, represents an information system to the owner (Ng 1978).

It should be noted, however, that financial reporting does not add any information to the manager, because management is assumed to be able to observe the firm's performance through the internal management accounting information (Ng 1978). Accounting numbers are used e.g. in lending agreements between the firms and their financers. These agreements often include covenants which are tied to financial statement ratios. Also, management compensation and bonus plans are another example where accounting numbers are used to measure management performance. (Watts et al. 1986)

Moreover, it is important to recognize that management produced financial reports alone do not solve the agency problems that are due to information asymmetry or conflict of interests. Because management is responsible for reporting on the financial condition of the firm, management is also in a position to adjust the

figures if the owner is not able to directly observe the actions. Thus there is always an information risk present when financial information is made available to the owners.

Auditing plays an important role in monitoring contracts and reducing the information risk (Watts et al. 1986). Without an external audit the accounting information used for decision-making by several internal and external parties lacks credibility. Therefore the most important requirement of the external audit is to increase the credibility of financial statements generated from accounting information (Lee 1972). Principals contract auditors to view the accounting numbers, procedures used in compensation and bonus plans and any breaches of contracts (Watts et al. 1986). The increased credibility of the financial information potentially benefits both owners and management.

The purpose of auditing, as Littleton (1933) pointed out in an early view, was "to verify the honesty of persons charged with fiscal rather than managerial responsibilities". At this time auditing was associated with monitoring government officials. Audits were designed to check upon accountability and stewardship (Littleton 1933). Later, Flint (1988) described auditing as "a social control mechanism for securing accountability". The view of auditing as a mechanism in securing stewardship and accountability of the agents has remained. However, today the audit function is seen more broadly and more structured. The American Accounting Association's (AAA) Committee on Basic Auditing Concepts (1973) summarized the criteria that create the demand for auditing:

1. The potential or actual conflict of interest. This conflict may exist between the user and the preparer of the information.
2. Consequence. The user may require information for decision-making purposes. Therefore the user needs to be confident of the quality of accounting information.
3. Complexity. The accounting information production process is so complex that the user has to rely on someone else to examine its quality.
4. Remoteness. Even if the user had the ability to analyze the quality of accounting information, it is unlikely that the user would have access.

The committee (American Accounting Association 1973) considered that these four conditions interact in such a way that as they increase in intensity they form the demand for auditing. Conditions 2–4 are based on the theory of rational expectations. The concept of rational expectations assumes that people take into account all available information that influences the outcome of their decisions. Further, it expects people to utilize their information intelligently and therefore they do not systematically make mistakes (i.e. they learn from the past). This means that principals will not be consistently misled by agents. (Wallace 1980)
The implication of rational expectations theory for agents is that principals will:

1. expect agents' self-interests to diverge from the principals' interests

2. be able to estimate the effect of such divergence
3. adjust prices (e.g. compensation offered) to reflect the related costs of the agents' expected activities.

The ability of principals to protect themselves through an adjustment of prices generates the agents' demand for monitoring activities. The agents rather than the principals can be seen as the source of demand for monitoring. Principals are basically unconcerned, because they can protect themselves from the risk of loss by reducing compensation for the agent's services. Agents demand monitoring in order to avoid the downward adjustment of their compensation. (Wallace 1980)

The committee of the American Accounting Association (1973) concluded that it becomes increasingly important that an informed, independent conclusion is reached by the user as to the quality of the accounting information received. Furthermore, it is increasingly difficult for the user of the information to reach an informed, independent conclusion without outside assistance (American Accounting Association 1973).

The monitoring of an agent can assume a variety of forms: owner-manager involvement, contingent compensation or bonus plans, periodic reports on performance etc. (Wallace 1980). Beaver (1989) suggests that one means to align the interests of management and shareholders is to use profit-sharing agreements or stock options as incentive contracts. The primary means for continuous performance reporting is a set of a firm's financial statements (Wallace 1980). Substantial evidence exists that earnings announcements by firms result in stock price adjustments (Ball and Brown 1968) or that accounting information is related to the market value of a corporation's shares (Beaver 1968), and that accounting ratios can be used to estimate the probability of bankruptcy (Beaver 1966) and the risk of owning a firm's stock (Beaver, Kettler and Scholes 1970).

These facts suggest that reported earnings have information content (Foster 1978) and are useful in the assessment of an agent's performance. The use of accounting information in management compensation and bond indenture contracts (Smith, Clifford and Warner 1979) demonstrates the use of reported earnings in performance evaluation. From the discussion on agency theory and the implications of rational expectations, incentives clearly exist for agents to provide financial statements to assist monitoring activities by principals (Wallace 2004).

However, if the principals do not trust the numbers provided by an agent they will insist on compensation (through adjustment of the agent's wage) for the risk of loss they perceive. Evidence exists that restatements of accounting numbers provided result in stock price adjustments (Palmrose, Richardson and Scholz 2004) and lower earnings response coefficient (Livnat and Tan 2004). This implies that when accounting numbers are found to be inaccurate, the investors' trust in accounting numbers will be impaired for future periods.

Therefore, in light of the above-mentioned factors the agent will, in addition to providing financial reports, agree to provide evidence that the reported numbers were carefully prepared and free from material errors. External auditing is the product which provides this assurance, taking into account the limitations of auditing on detecting material errors. (Wallace 1980 and 1987)

The audit literature has acknowledged that agency costs, caused by information asymmetry and conflict of interest are positively related to the demand for high quality auditing. Francis and Wilson (1988) find that agency costs affect the choice of a higher quality brand name ("Big 8") auditor. Similarly, DeFond (1992) finds that changes in agency costs are associated with changes in audit quality. However, Nichols and Smith (1983) do not find a positive abnormal stock market reaction to firms' announcements of switching to higher quality auditors. Both Francis et al. (1988) and DeFond (1992) explain that firms have different demands for audit quality based on the alignment of interests between the management and the owners. The divergence of interests consists of conflict of interests and information asymmetry and the degree of these determine the degree of auditing needed. Auditing is understood to make the management more credible to investors either in the absence of or in addition to other means to control agency conflicts.

Blouin, Grein and Rountree (2007) study two determinants of auditor selection, switching costs and agency costs. Blouin et al. (2007) used the collapse of Arthur Andersen to examine the effects of the client firm losing the agency benefits inherent in the relationship with the auditor. Client firms are perceived to have lost their agency benefits due to the reduction in perceived audit quality of Arthur Andersen, which has been documented in several studies (e.g. Chaney and Piplich 2002; Krishnamurthy, Zhou and Zhou 2006). Blouin et al. (2007) found that firms with higher agency problems were more likely to start a new audit relationship instead of following the incumbent Arthur Andersen audit team to the audit firm that took over the operations of Arthur Andersen. Accordingly, this further confirms that auditing is an important means of reducing agency costs and therefore the firms' agency problems are a key determinant in the auditor selection process.

In some later studies, the effect of divergence of interests on the informativeness of earnings was first studied by Warfield, Wild and Wild (1995). They find that managerial ownership is positively related to informativeness of earnings on the stock markets and negatively related to the magnitude of discretionary accruals. The reasoning behind this is that as the demand for accounting-based management constraints is higher when management ownership is lower, management is expected to respond to this in their self-interest. The study of Warfield et al. (1995) was extended by Yeo, Tan, Ho and Chen (2002) as they show that at higher levels of management ownership the informativeness of earnings does not have a positive relationship with management ownership, but the relationship has reversed. This would suggest that the entrenchment effect becomes effective at high levels of management ownership.

However, Gul, Lynn and Tsui (2002) develop the study by Warfield et al. (1995) by looking at how audit quality affects the positive relationship between the informativeness of earnings and management ownership and the negative association between discretionary accruals and management ownership. The results of Gul et al. (2002) support the conclusion that agency problems have an effect on the demand for auditing.

The audit fee literature has also extended the findings of Warfield et al. (1995) and Yeo et al. (2002). Gul, Chen and Tsui (2003) find that management ownership weakens the positive relationship between discretionary accruals and audit fees; however, in firms with high accounting-based management compensation the negative effect of management ownership is found to be weaker. The audit fee literature proposes that there is a relationship between agency problems and audit fees (see Hay, Knechel and Wong 2006 for a review). The relationship is expected to be positive, because of the auditor's increased exposure to liability.

Consistent with this, Gul et al. (1998) finds first that for low growth firms the positive relationship between free cash flow and audit fees is weaker for firms with high debt. Later, Gul et al. (2001) added that like debt, management ownership also affects the positive relationship between audit fees and free cash flow. Finally, Nikkinen et al. (2004) report that management ownership has a negative effect and free cash flow a positive effect on audit fees and thus the agency costs can be used to some extent in explaining audit fees. The studies by Gul et al. (1998, 2001) and Nikkinen et al. (2004) further support the theory that the agency costs of the firm have an effect on the demand and supply of audit services.

2.7 The role of the audit

Wallace (1980) suggests three parallel hypotheses for explaining the role of the audit in free and regulated markets: the monitoring hypothesis, the information hypothesis and the insurance hypothesis. Next these three roles will each be described to provide an overview of the different roles auditing can take in different environments.

2.7.1 The monitoring hypothesis

The monitoring hypothesis assumes that when delegating decision-making power to one party, as suggested in agency theory, the agent is motivated to agree to be monitored if the benefits from such activities exceed the related costs. As mentioned before, this hypothesis is applicable to all co-operative relationships in any organization, not only relationships between owners and managers, but also in relationships between employers and employees, creditors and shareholders, different levels of management in firms and government and taxpayers. (Wallace 1980 and 1987)

Beaver (1989) pointed out that the monitoring theory strives to solve problems due to moral hazard and information asymmetry between the agent and the principal. Moral hazard is the problem of the agent possessing superior information and thus having the opportunity to use it self-interestedly at the expense of the principal (Beaver 1989). Arrow (1985) calls these two types of principal-agent problems hidden action (moral hazard) and hidden information (information asymmetry).

Public disclosures have been seen as one way of controlling the monitoring hypothesis. They have been seen as restricting the superior information position of management. Further, an independent actor can be contracted to inspect the information environment. From this point of view, auditing is one form of controlling for the monitoring hypothesis. The audit reduces the agent's chances to withhold material information from the shareholders (Beaver 1989).

The relationship between the auditor and the board of directors is one factor that affects the monitoring of management. The auditor and the board of directors usually have a relationship, which is considered to increase the monitoring power of the owners. Furthermore, the independent audit committees are considered to be a mechanism that enhances the auditor's independent position in negotiations and increases the effectiveness and quality of the audit engagement (Ng and Tan 2003). Recent updates in control environment regulation for public firms have imposed higher demands on the independence and expertise of board members. Similarly, the auditors and the management are now mandated to issue internal control reports, which again increases and strengthens the monitoring role of the auditor over the management.

Wallace (1980, 1987 and 2004) brings forward many factors implying that auditing is a highly valued monitoring system among stockholders, creditors, and top management. For example, Chow (1982) finds that firms with a higher ratio of total debt to total assets or firms with more accounting based covenants are more likely to hire an auditor, presumably to address the agency relationship of management to creditors. Additionally, evidence suggests that the likelihood of voluntarily hiring an auditor increases with the number of employees. (Hay and Davis 2004)

2.7.2 The information hypothesis

Financial reporting was earlier seen to be central to the monitoring purposes, but since the 1960's the focus moved to needs and the provision of information to enable users to take economic decisions (Higson 2003). Therefore, an alternative or complement to the monitoring hypothesis is the information hypothesis. One argument regarding the demand for audited financial statements is that they provide information that is useful in investors' decision-making. Investment decision models in the finance literature value a firm by calculating the net present value

of future cash flows. For example, future cash flows have been observed to be highly correlated with financial statement information. Therefore, the audit is valued by investors as a means of improving the quality of financial information. (Wallace 1980, 1987 and 2004)

Some of the same information that is used in monitoring contracts is also useful in making investment decisions. The difference from monitoring purposes, however, is that installing means of monitoring usually requires explicit contracting, as is the case when the agent commits to providing audited financial statements. However, the information hypothesis emphasizes that financial information is needed by investors to determine market values, which are means of making rational investment decisions, even in the absence of an explicit contract with the agent. (Wallace 1980)

Fama and Laffer (1971) discuss three major benefits of information: reduction of risk, improvement of decision-making and earnings of trading profits. Audited financial statements can be related to each benefit. Investors tend to be risk adverse, so they will demand a higher return for higher levels of risk or they will pay a higher price in the form of a risk premium to reduce the level of uncertainty or risk (Fama et al. 1971). For a simple example let us assume that the risk premium represents an individual assessment of how much an audit will reduce uncertainty concerning reported financial information. The audit can be regarded as cost-effective if the risk premium of each individual investor exceeds the cost of the audit to the firm. (Wallace 1980, 1987, 2004)

An audit is also valued as a means of improving the financial data used by managers in decision-making. An auditor can improve the quality of the input data by finding errors and by making employees more careful in preparing records. More accurate data will improve internal decision-making. External use of more accurate data for credit and investment analysis, labor negotiations or regulation decisions will also improve managers' performance. (Wallace 1980, 1987, 2004)

The third use of information refers to gains from trade by investors with private information. According to the efficient market hypothesis asset prices reflect all publicly available information. Hence, no abnormal returns can be gained by using publicly available information. The information benefit of profits from trading is only realized by investors with private access to new information. The Securities Act require that audited financial statements are made publicly available. At the public announcement of the audit results, the price of the securities will adjust to the information (e.g. Chen et al. 2000; Taffler et al. 2004) if the information is relevant and not already known or expected. It may also be that no price adjustment results from the announcement of audit results, the same conclusions could have been reached by outsiders at an earlier date or the audit results could be replaced by available surrogate information. Therefore, the audit function can be evaluated with respect to the benefit of trading gains. In other words the announced audit findings may only confirm investors' expectations and existing

market valuations. However, the absence of gains from trade on audit results does not imply lack of value for audited information. (Wallace 1980, 1987)

The role of the audited data is confirmed by research results (Beaver et al. 1970) which demonstrate an improvement in the estimation of risk through the use of accounting information. The improved estimation of risk does not mean that abnormal earnings could be gained, but suggests that investors have more accurate information for evaluating investments (Wallace 1980 and 2004). The perceived credibility of accounting information has been observed to have an effect on interest costs (Wallace 2002), underpricing of initial public offerings (Menon and Williams 1991; Hogan 1997; Willenborg 1999) and bankruptcy (Menon and Williams 1994).

2.7.3 The insurance hypothesis

The third hypothesis on how the demand for audits evolves relates to management's liability exposure (Wallace 1980). Under the Securities Act, the auditor and the auditee are jointly and severally liable to third parties for losses attributable to defective financial statements. The ability to shift financial responsibility for reported data to an auditor lowers the expected loss from litigation or related settlements to managers, creditors and other professionals involved in the securities market. As potential litigation costs increase the insurance demand from managers and professional participants for an audit can be expected to grow. (Wallace 1980, 1987, 2004)

To the question why managers and other professionals look for insurance from auditors rather than an insurance company, four possible explanations have been proposed. First, the audit function is so firmly established in society that the decision of management not to hire an auditor would strongly imply negligence or fraud on the part of the managers of other professionals. Second, accounting firms have established in-house legal departments to defend them in professional liability suits. Audits have been seen as possibly providing more efficient insurance coverage as a co-defendant, than the insurance company as a third party. Third, the auditor facing a litigation suit is concerned about his/her reputation. Similarly, managers are concerned about their own reputation and the firm's reputation as a well-run firm. The insurance company on the contrary will make decisions on a litigation suit as a cost-benefit choice between out of court settlement of legal defense. Thus, the auditor and the manager share a common interest in properly considering the effect of the litigation on the reputation of the parties involved.

Fourth, auditors have "deep pockets" relative to a bankrupt or failing firm that cannot pay. Based on court decisions to hold auditors liable for inaccurate financial reporting, auditors are apparently viewed as a means of socializing the risk. This means that auditors spread the cost of client's business failures to other

clients through higher fees and to the society through higher prices and lower returns on investment.

O'Reilly, Leitch and Tuttle (2006) show that the going concern audit report information is assessed less negatively when the environment perceives the auditor to provide some insurance. Similarly, Lennox (1999) concludes that the larger auditors with "deeper pockets" are more prone to litigation despite the higher quality that they provide, and thus this is interpreted as confirming the existence of an insurance effect on the demand for auditing. Finally, Menon et al. (1994) also find evidence that auditors are seen by investors as guarantors of financial statement quality and of their investments. Furthermore, investors also appear to be willing to pay a premium for the right to recover losses from the auditor.

2.8 Concluding remarks

This chapter provides a theoretical examination of the relevance and role of auditing from an economic perspective. The first part examines the key issues behind the demand for audit services. The primary explanation here for the demand for auditing is that the relationship between management and shareholders is such that monitoring is needed. First of all, the agency relationship between management and owners is affected by information asymmetry and conflict of interests and these make for agency problems. The costs deriving from the control of agency problems are agency costs.

Management has the incentive to let their self-interest affect their decisions. For instance, in the absence of a proper monitoring mechanism, management has the opportunity to provide accounting figures that they can benefit from. However, owners are expected to be able to anticipate this and they will lower, for instance, the management's remuneration. This implies that it is in fact in management's interest to provide some means for owners to control for agency problems. In addition, in an environment where a firm is subject to intense public interest, more public information is produced and disclosed, which together with the informativeness of firm disclosures make up the information environment of the firm. According to the studies previously discussed, the richness of the information environment restricts management's opportunistic behavior and decreases the value relevance of firm disclosures.

The second type of agency costs, the agency costs of debt, stem from the conflict of interests between shareholders and bondholders. Lenders protect themselves from the risk that the debt conditions are not fulfilled. The protection may assume various forms: higher interest rates, increased monitoring, shorter maturity of the debt, restricting covenants. Based on the literature, the consequences of increased leverage are that management monitoring and discipline increase in one form or the other.

Audited financial statements are widely viewed as a mechanism to mitigate agency costs. The empirical evidence is consistent with this view. It indicates that the agency problems or agency costs in a firm affect the demand for auditing services. Firms with higher agency costs are more likely to appoint high quality or brand name auditors. They are also likely to pay a fee premium for the auditors' increased risk of litigation. Furthermore, there is evidence that higher quality auditing in fact increases the informativeness of accounting information to investors and also by restricting the use of accruals the actual quality of financial statements is regarded to improve as well. This is important for the audit profession, since one could expect that accounting information users and providers are expected to turn to more monitoring mechanisms that are perceived to be more reliable if auditing is not able to provide assurance and communicate the expected level of information quality.

Finally, auditing has been seen to assume different roles in different firms. The suggested roles are monitoring role, information role and insurance role. These roles may be concurrent, i.e. auditing can assume several roles at a time. From the perspective of this dissertation, the most interesting roles are the information and insurance roles, because these can be affected by the information in the audit report.

The hypotheses of this study are later developed on the theory presented here. First, in this study it is important to understand the role of auditing from the information and insurance perspective, because this is relevant when evaluating the impact that the announcement of an audit report could have on the stock markets. The information role postulates that auditing improves the quality of financial information and provides additional information if required. The insurance role of auditing, on the contrary, could be assumed to be weaker if the auditor issues a qualified audit report, because this report reduces the likelihood of litigation losses of the auditor.

Second, identifying the reasons underlying information asymmetries and agency costs is essential for this dissertation when developing the hypotheses. The analysis in this chapter provides substantial evidence of how information asymmetry affects the level of monitoring demanded, i.e. auditing. Likewise, it is assumed later in this study that the relevance of information provided by the auditor is also effected first by the extent of information asymmetries and secondly by the alternative means of reducing information asymmetries, i.e. information environment or debt monitoring. This can be illustrated simply by the example of information asymmetry between management and owners. The greater the information asymmetry is, the more important the information in the going concern audit report could be considered to be to the outsider. However, the information asymmetry can be reduced by either obtaining and assessing information from other sources or relying on management discipline induced by the agency costs of debt.

3 EARLIER RESEARCH ON OWNER AND USER REACTIONS TO AUDIT OPINIONS

In this chapter, the main issues regarding the demand and supply of information are presented and key studies on the relevance of audit reports to financial statement users are reviewed. The studies on audit report relevance can be divided into two categories according to the research approach: archival market reaction studies and experimental user perception studies. The main focus in this chapter is on the market reaction studies and most importantly on the event date issues that still seem to puzzle researchers.

3.1 Demand and supply of financial information

Financial accounting information, including audit reports, is useful if it helps the users in their decision making. Useful information has at least the following three characteristics: quality, relevance and timeliness. Naser, Nuseibeh and Al-Hussaini (2003) found that credibility and timeliness are the most important features of useful information.

Quality of the information typically implies that the information has been generated in accordance with generally accepted principles, such as IAS in accounting or ISA in auditing, for example. Relevance of the information suggests that information should be useful in making a particular decision, as, for example, an investor and bank loan manager require different information for accurate decisions. Timeliness of information indicates that the information is current and future events are dealt with according to generally accepted principles.

Financial accounting information has two major purposes. First, financial accounting is a way to transfer information from managers to interested parties external to a firm, reducing the information asymmetry between internal and external parties. Information asymmetry indicates that managers have access to information that people outside the firm do not have. Financial accounting provides a way for managers to communicate private information to interested parties that do not otherwise have access to it. Having access to the financial information helps interested parties make more accurate assessments of the firm. (Guenther 2005)

Second, financial accounting information is often used in contracts between the firm and other parties such as lenders, managers, business partners, government etc. Basing contracts on accounting information computed with generally accepted accounting principles helps reduce the cost of contracting by reducing risk. (Guenther 2005)

Privately owned firms differ from publicly owned firms in their ownership, governance, financing, management and compensation structures. These differences

affect the demand and supply of financial information in privately and publicly owned firms. In publicly owned firms, the demand for financial reporting arises from reducing information asymmetry between managers and other parties, e.g. investors. Tax, dividend, compensation and payment policies affect the demand for financial reporting in privately owned firms. The ownership in privately owned firms is typically more concentrated and shareholders have a more active role in management. Therefore, it could be expected that private firms are more likely to communicate privately with shareholders, creditors, employees and other interested parties than are publicly owned firms. However, no empirical evidence on this is available. It is proposed that the demand for public financial reporting quality is reduced in private firms (Ball and Shivakumar 2005). Conversely, higher quality financial reporting is demanded from publicly owned firms.

Ball et al. (2005) expect higher demand for financial reporting quality in publicly owned firms to be a consequence of the higher legal obligations of managers and auditors and higher risk of litigation. In private firms reducing information asymmetry is not the primary goal. Tax, dividend and compensation policies are more important in private firms as the flexibility of accounting rules can be utilized to benefit the smaller group of interested parties. Ball et al. (2005) show that insider access and high quality financial reporting are substitutes for reducing information asymmetry and they expect private and publicly owned firms to follow a similar pattern.

The objective of the financial statements audit is to enable the auditor to express an opinion as to whether an identified financial statement framework has been implemented in the preparation of financial statements (IFAC 2003). Audit engagements are thus intended to increase the credibility of financial information. Audit opinions are public documents used by auditors as a method in communicating the results of the work to the principal and other users of the report.

Over the past three decades several studies have examined the informational value of audit opinions. The framework of this dissertation is based on earlier research, which can be divided into two categories: (i) archival studies explaining the importance of audit opinions to investors through its impact on stock prices and (ii) experimental research concerning user responses to audit opinions. The main goal in both categories is to test the information value of an audit opinion to different interest groups. The studies differ in the research approach, data settings and methods.

3.2 Market reactions to audit report announcements

The first approach in studying the information content of audit opinions is the capital market approach. This line of research studies the relevance of information contained in audit opinions by analyzing the direct stock market reaction to audit opinion or indirectly the market reaction to audit opinion related announcements.

Considerable evidence supports the simultaneous or delayed correlation between earnings information and stock price changes (Ball et al. 1968; Bernard and Thomas 1989; Jegadeesh and Livnat 2006). However, as Lev (1989) reports, earnings explain only a fraction of the change in returns on the earnings announcement date. Due to this, accounting research explored models with other financial information (Ou and Penman 1989; Livnat and Zarowin 1990; Sloan 1996). One such source of information is the audit report. Audit reports have the potential to change the market responsiveness to earnings by adding noise or reducing the persistency of reported earnings (Choi and Jeter 1992).

The audit report can be expected to potentially affect stock prices mainly for two reasons. First, the audit report may contain information that affects either the estimation of the magnitude of future cash flows and/or the riskiness of future cash flows. Any information that can result in revisions of these components is relevant to the stock prices. Second, the audit report can contain substantial information about the viability of the firm, e.g. the going concern audit report. The report should at all times reflect the auditor's access to inside information such as forecast data and management plans, and, taking this into account, the auditor's reporting decision also reveals some private information (Mutchler 1984). However, Mutchler (1985) explains that e.g. the going concern audit report is a function of publicly available information, and suggests that such reports can be predicted.

Melumad and Ziv (1997) proposed in their theoretical model of market reactions to qualified audit reports that the reaction to avoidable and unavoidable qualified audit reports is different. An avoidable audit report, which the management could have avoided by making a change in reporting, could result in either a positive or a negative reaction. Whereas an unavoidable qualified audit report, which the management could not have avoided, is expected to result in a negative reaction.

The reaction of financial markets to audit report announcements has been extensively studied in the accounting literature. The fundamental question addressed in these empirical studies is whether the audit reports affect investors' pricing decisions. A list of the most relevant studies for this dissertation is presented in Table 1.

Table 1. Studies on the relevance of audit reports in the stock markets.

Authors	**Year**	**Journal***	**Observed market**
Audit reports on financial statements:			
Baskin	1972	TAR	U.S.
Firth	1978	TAR	U.K.
Chow and Rice	1982	AJPT	U.S.
Banks and Kinney	1982	JAR	U.S.
Davis	1982	AJPT	U.S.
Elliot	1982	JAR	U.S.
Dodd, Dopuch, Holthausen and Leftwich	1984	JAE	U.S.
Dopuch, Holthausen and Leftwich	1986	JAE	U.S.
Fields and Wilkins	1991	AJPT	U.S.
Choi and Jeter	1992	JAE	U.S.
Loudder, Khurana, Sawyers, Cordery, Johnson, Lowe and Wunderle	1992	AJPT	U.S.
Mittelstaedt, Regier, Chewning and Pany	1992	AJPT	U.S.
Ameen, Chan and Guffey	1994	JBFA	U.S.
Fleak and Wilson	1994	JAAF	U.S.
Frost	1994	AJPT	U.S.
Chen and Church	1996	TAR	U.S.
Jones	1996	JAPP	U.S.
Carlson, Glenzen and Benefield	1998	QJBE	U.S.
Fargher and Wilkins	1998	JBFA	U.S.
Chen, Su and Zhao	2000	CAR	China
Holder-Webb and Wilkins	2000	JAR	U.S.
Soltani	2000	IJA	France
Schaub and Highfield	2003	JAM	U.S.

Table 1. Continued

Authors	**Year**	**Journal***	**Observed market**
Pucheta, Vico and Garcia	2004	EAR	Spain
Taffler, Lu and Kausar	2004	JAE	U.K.
Ogneva and Subramanyam	2007	JAE	U.K./U.S./ Australia
Herbohn, Ragunathan, Garsden	2007	AF	Australia
Kausar, Taffler and Tan	2009	JAR	U.S.
Audit reports on internal control weaknesses:			
Ashbaugh-Skaife, Collins, Kinney and LaFond	2009	JAR	U.S.
Ogneva, Subramanyam and Raghunandan	2007	TAR	U.S.
Beneish, Billings and Hodder	2008	TAR	U.S.
Hammersley, Myers and Shakespeare	2008	RAST	U.S.

* AF= Accounting and Finance, AJPT= Auditing: a Journal of Practice and Theory, CAR= Contemporary Accounting Research, EAR= European Accounting Review, IJA= International Journal of Auditing, JAAF= Journal of Accounting, Auditing and Finance, JAE= Journal of Accounting and Economics, JAM= Journal of Asset Management, JAPP= Journal of Accounting and Public Policy, JAR= Journal of Accounting Research, JBFA= Journal of Business Finance & Accounting, QJBE= Quarterly Journal of Business and Economics, RAST= Review in Accounting Studies, TAR= The Accounting Review.

Audit reports on financial statements

The event date problem becomes evident when the event date selection in the literature is reviewed. The first observation is that several studies have used a choice of dates. This is illustrated by how e.g. Loudder et al. (1992) describe their sample selection: “The qualification disclosure date was defined as the earliest of (1) the publication date of a media story, if one was found, (2) the annual report date, or (3) the 10-K stamp date”. Multiple event dates have also been used by several other studies and this is clearly an indication of the difficulty to identify or determine the first day of trade on the information contained in the audit opinion.

In the U.S. studies the most frequently used announcement date is the form 10-K (10-K) filing date (see e.g. Chow et al. 1982, Ameen et al. 1994, Carlson et al. 1998). Traded firms must file their annual reports with the SEC on the 10-K. The problem with this report and event date is that the 10-K provides in addition an overview of the firms' business and financial condition. This means that a large amount of information is released on that particular day, of which the audit opinion information is only a part.

Another frequently applied announcement date is the media disclosure date (e.g. Dopuch et al. 1986, Loudder et al. 1992, Fleak et al. 1994). The choice of this event date may resolve may of the problems with concurrent other information releases associated with the 10-K date, because there is no concurrent announcement from the firm at that point in time. The media disclosure date may also in many cases be earlier than the 10-K filing and, as stated earlier, it is essential to identify the first day trade takes place with the audit report information. The problem with the media disclosure date is that for research purposes there are so few observations.

In an Australian setting Herbohn et al. (2007) study the market reactions on the date of the final annual report. They recognize that Australian firms were required first to release a preliminary annual report with the earnings information and later they publicize the final annual report. Herbohn et al. (2007) are thus able to restrict the influence of earnings information from the abnormal returns on the day of the final annual report. However, as they note, the final annual reports may still contain amendments to the earnings or other relevant non-earnings information and, furthermore, the preliminary report may already contain information that creates an expectation of a going concern audit report, which would reduce the reaction on the final annual report announcement date.

Moreover, Loudder et al. (1992), Fleak et al. (1994), Ameen et al. (1994), Carlson et al. (1998) among others use the annual report announcement day in their analysis. This event date can be regarded as the ultimate date when the audit report is announced (of course the audit report can later be withdrawn or amended), because the firms must publish their annual reports and the annual reports must contain an audit report.

Soltani (2000) in his French and Pucheta et al. (2004) in their Spanish study use an estimation of the date when the audit report is publicly announced. They both use the 15th day before the annual general meeting as the event date. As alternative event dates, Soltani (2000) also suggests the date of the auditor's signature on the audit report and an average between the date of the auditor's signature and 15 days before the general meeting, but results are reported only using the first mentioned date.

More recent studies have proposed means to circumvent the event date -problem. Fields et al. (1991) acknowledge that "The main difficulty in most of these prior

studies was the lack of precision in identifying the date upon which information, if any, was revealed to the markets. In their study, Fields et al. (1991) examine the share price reactions to public announcements of withdrawn qualifications. The withdrawn qualification can be used to measure the information content of audit reports in exactly the same way as the underlying audit report is used. The use of qualification withdrawals announcements in this line of research can further be motivated by the fact that the withdrawals are not anticipated and may therefore result in a reaction in the stock prices and that they are more timely and less noisy than e.g. 10-K announcement (Fargher et al. 1998). Fargher et al. (1998) examine the shifts in systematic risk around the publicly announced qualification withdrawals. They hypothesized that the announcement of a qualification withdrawal would decrease the systematic risk of equity, i.e. the equity beta.

Chen et al. (1996) propose another alternative means to avoid the event date - problem of audit report announcements. They study whether going concern audit reports are useful in predicting bankruptcy. They focus on the excess returns in the period surrounding bankruptcy filings and find that firms receiving going concern audit reports experience less negative excess returns around the bankruptcy filing. A plausible interpretation is that going concern opinions have information value, at least in the case of bankruptcy.

Finally, Taffler et al. (2004), Ogneva et al. (2007) and Herbohn et al. (2007) approach the question of the relevance of audit reports to the stock markets using a long-term perspective. This approach is less sensitive to the selection of the event date since it examines the stock returns in a 12-month period following the publication of the going concern audit report. Taffler et al. (2004) find a significant reaction in the U.K. following the going concern audit report. Ogneva et al. (2007) are unable to find a reaction on the U.S. and Australian markets, whereas Herbohn et al. (2007) find in Australia only a significant market reaction in the 12-month period prior to the going concern report announcement and Kausar et al. (2009) demonstrate a significant 12 month stock market reaction to first-time going concern audit reports in the U.S.

Audit reports on internal controls

The passing of the Sarbanes-Oxley Act (SOX 2002) Section 302 and Section 404 changed the requirements for making public disclosures regarding internal controls. In the pre-SOX period there were no requirements for management or auditors regarding disclosures of internal control effectiveness. Prior to SOX (2002) firms could voluntarily assess and report on the effectiveness of internal controls, but only few did so (see McMullen, Raghunandan and Rama (1996) for a review on pre-SOX reporting activity).

Section 404 of the SOX (2002) requires that public firm annual filings (10-K) contain management's assessment of the design and the effectiveness of the

firm's internal controls. Moreover, it also requires the auditor to provide a separate opinion on management's assessment and the auditor's evaluation of the internal controls. The auditors' reports on internal control deficiencies are usually referred to as the auditors' Section 404 disclosures. Closely related to these reports where the Section 302 reports by the management. Before the implementation of SOX (2002) Section 404, Section 302 first required management to evaluate the internal controls over financial reporting and report results of their evaluation. Whereas Section 404 reports accompany annual reports, the Section 302 reports could be filed separately.

Research on both Section 302 and Section 404 disclosures shows that internal control weaknesses are associated with firms that are smaller, financially weaker, rapidly growing, more complex, and which have ongoing restructuring (Doyle, Ge and McVay 2007a; Ashbaugh-Skaife et al. 2007). As expected, weaknesses in internal controls are also related to significantly decreased financial statement quality. Doyle, Ge and McVay (2007b) and Ashbaugh-Skaife, Collins, Kinney and LaFond (2009) find that internal control weaknesses are associated with lower quality accruals. Weaknesses in internal controls can affect the quality of financial statements by either allowing more intentional earnings management or unintentional errors. The evidence (Ashbaugh-Skaife et al. 2008) suggests however, that weaknesses are more likely to lead to unintentional errors

As the evidence of the effect of internal control weaknesses on financial reporting quality seems convincing, it is of interest to look closer at the market and capital effects of these disclosures. In general, the negative effect of internal control weaknesses on financial information quality increases the information risk and uncertainty of equity or debt holders. Therefore, investors should demand a higher risk premium. Regarding the Section 302 disclosures, there is evidence that there is a negative abnormal reaction to the announcement of internal control weaknesses (Beneish et al. 2008; Hammersley et al. 2008). However, Beneish et al. (2008) report that the auditor quality and client size attenuates the reaction to Section 302 disclosures, and Hammersley et al. (2008) find that the reaction depends on the characteristics of the weakness. This evidence suggests first that the richness of the information environment may affect the reaction, and secondly that specific types of weaknesses are more difficult to anticipate even in a richer environment.

Section 404 reports are filed most commonly with the annual 10-K reports. The empirical evidence implies that auditors' Section 404 internal control weakness disclosures are not associated with abnormal returns around the announcement (Ogneva et al. 2007; Beneish et al. 2008). Beneish et al. (2008) conclude that the information environment of firms that are required to report under Section 404 is richer and that this attenuates the surprise or that Section 404 reports may reflect a low materiality threshold for disclosure. In an additional analysis Beneish et al. (2008) study the cost of capital effects of internal control weakness disclosures. They report that Section 302 reports increase the cost of capital, whereas Section

404 reports do not. However, Ashbaugh-Skaife, Collins, Kinney and LaFond (2009) find a significant negative market reaction to Section 404 reports, and their cross-sectional test also indicates that the systematic risks are higher for firms disclosing internal control weaknesses.

These studies suggest that disclosed Section 404 internal control weaknesses may represent risk that is meaningful to investors. This being so, it would be fair to assume that the audit fees are higher for firms with internal control weaknesses. The empirical evidence confirms that firms with weaknesses pay higher audit fees (Hoitash, Hoitash and Bedard 2008).

Trading activities of informed market participants

The literature reviewed above revealed that the event date used in this research is the typically the 10-K report filing date. However, as studies on market reactions to other firm-specific information announcements reveal, the actual date of the event may also be a relevant point of time to measure the reactions. For instance, Knechel et al. (2007) and Carter et al. (1999) study the market reactions to 8-K report announcements around the date of the actual event. In the study of Knechel et al. (2007) the event date used was the date of the dismissal of the incumbent auditor, rather than the filing date of 8-K the report indicating that the incumbent auditor was dismissed and a new auditor appointed.

Using the date of the actual event raises an important question. The question is why should there be a market reaction before some new information has been announced to the stock markets. Generally it is understood that stock prices incorporate all relevant publicly available information and firms are required to publicly announce all new and relevant information. This implies that before the public announcement only some market participants have access and an opportunity to use this information.

Informed market participants are by definition all those traders who are informed when an information event occurs at a firm. Tookes (2008) informed traders as corporate insiders, employees, analysts, and others who have access to information before it is released to the market. Piotroski et al. (2004) includes, in addition to insiders and analytics, also institutional investors with significant ownership as informed market participants. Jayaraman (2008) defines informed traders as those who have acquired private information or who have access to private information due to his/her association with the firm.

The information advantage of informed market participants is the greatest when the precision of public information is lower, information asymmetry between insiders and outsiders is greater, uncertainty about the value of the firm is higher, and the informed traders' information is more accurate. Tookes (2008) proposes also that informed traders have the opportunity to extract higher excess returns in

small firms' stock that are less competitive and have higher sensitivity to shocks. Huddart and Ke (2007) find evidence that abnormal returns after insiders' trades are lower for firms with richer information environment. Similarly, Frankel et al. (2004), Lakonishok and Lee (2001), Seyhun (1986), and Finnerty (1976) find that the profitability of insider trades is positively related to information environment, measured by analyst following or firm size. Jayaraman (2008) finds that informed trading is more active when public information is less informative.

The literature examining informed or insider trading supports the selection of the event date in this dissertation. The content of the audit report is privately available when the auditor presents it to the firm and publicly available when it is filed publicly announced as a part of the 10-K report. The financial literature, however, has found considerable evidence of informed trading. In particular, as briefly reviewed above, the literature concludes that informed trading is more likely to occur in smaller firms with less competitive stocks and firms with high information asymmetry or poor information environment. This evidence suggests that when using the audit report date as the event date, then the effects of information asymmetry and information environment need to be controlled for. In addition, informed market participants have a greater benefit from private information when uncertainty about the price of the stock is greater and the private information is accurate. In the case of going concern audit reports or internal control weakness disclosures, the firms receiving these reports are typically smaller, financially distressed or going through restructuring and due to these factors the uncertainty around these firms is likely to be high. Thus, the conclusion is that the conditions after the audit report date are favorable for informed market participants' trading activities.

3.3 Relevance of audit reports in users' decision making

The professional auditor is assigned by the annual general meeting. This means that the auditor works for and reports to the shareholders. However, the target group or user group of audit reports can be seen as much broader. External investors, bank loan officers, authorities, financial analysts, i.e. users of financial statements, can all be considered users of audit reports.

The impact of audit reports on users has been studied over a long period in many papers (e.g. Libby 1979; Houghton 1983; Gul 1987; Bamber et al. 1997; LaSalle et al. 1997; Lin et al. 2003). This research trend is based on the question of how professionals in different positions perceive the information contained in the audit opinion to affect the reliability of the financial statement information and their decision-making.

Most of the studies on the relevance of audit reports in user decision-making are experiments. In these studies the decision made by the user is monitored when

he/she is exposed to a specific type of audit report and a scenario of request for financing. Guiral-Contreras et al. (2007) divide these studies into three types. The first addresses how the level of auditor attestation affects loan officers' decisions (Johnson et al. 1983, Wright et al. 2000). The second type studies how the audit report format affects the loan officers' decision-making processes (Miller et al. 1993). The third type focuses on differences in the relevance of qualified and unqualified audit reports (LaSalle et al 1997, Bessell et al. 2003).

The experimental method used in this type of research is designed so that the effect of the auditors' report on the loan officers' decision-making process can be measured. The results from both earlier studies and more recent studies yield inconclusive results regarding the relevance of audit report information in lending decisions. According to the findings of Estes and Reimer (1977), Libby (1979), Abdel-Khalik, Graul and Newton (1986), Houghton (1983), Bessell et al. (2003) and Lin et al. (2003) the audit report does not have an effect on the loan officers' decisions. However, Firth (1979), Gul (1987), Bamber et al. (1997), LaSalle et al. (1997), Durendez (2003) and Guiral-Contreras et al. (2007) show that the audit report indeed may have an effect on the loan decision.

Some studies have addressed user groups other than loan officers. Bailey, Bylinski and Shields (1983) experimented with knowledgeable and less knowledgeable audit report readers, whereas Robertson (1988) and Durendez (2003) studied financial analysts dealing with financial statement information when making investment decisions.

3.4 Concluding remarks

This chapter examined studies on the relevance of audit reports. The first section outlined the demand and supply for financial information. The primary function of financial information announcements is for the management to communicate the firm's financial position to the interest groups of the firm, in other words reduce the information asymmetry between management and outsiders. There is considerable empirical evidence reporting a stock market reaction to both management produced earnings and other financial information as well as information produced by others with the potential to affect the perceived credibility of financial information or announcements affecting the firm in some other way.

Next the chapter analyzed the earlier research on market reactions to announcements of audit opinions on financial statements. This is essential in order to understand the context and determine the contribution of this dissertation. Audit report information is expected to affect the share prices by conveying information that affects either the amount of future cash flows or the riskiness of future cash flows. This assumption depends, however, on the assumption that the audit report contains new information that is not already available from any other source.

The key finding in the analysis of the existing literature is that the selection of the event date is still considered a major challenge in determining the stock market reactions to audit report information. The key question is when the audit information becomes available for the traders. The determination of the event date is important for the functioning of the empirical models used in these studies. The analysis of the existing literature shows that several different event dates have been applied, some of them relying on various announcement dates while some of them are estimations of when the information is expected to be available.

Next, the literature on internal control efficiency disclosures was reviewed. The Sarbanes-Oxley Act (SOX 2002) requires public firms to disclose management and auditor assessments on the effectiveness of internal controls. The literature suggests that from the investors' point of view internal control weaknesses increase information risk due to inferior accounting information quality. In addition, market effects of material weaknesses in internal controls have also been reported, e.g. abnormal stock market reactions and increased systematic risk.

The audit literature indicated that normally the event date used has been the public announcement date of the audit report. However, the finance literature reviewed in this chapter indicated that there is considerable evidence of trading activities of participants who have access to relevant firm-specific information prior to its release. The activities of these participants has been found to depend on factors related to the information asymmetry of insiders and outsiders, and the information environment of the firm.

Finally, in the last part of this chapter the literature on the claimed behavior of financial information users to qualified audit reports is presented. These studies are fairly conclusive in reporting that financial statement users perceive that the audit report contains valuable information for their decision-making. In particular, bank loan officers' responses indicate that both the decision to grant a loan as well as the terms of the loan and additional information required is affected by the content of the audit report.

Connecting the key observations from this chapter to the previous chapter it is appropriate to consider other theoretical explanations for why and in which circumstances the information in audit reports is relevant. First, as explained in the previous chapter, the purpose of financial statement auditing is to reduce the information asymmetry. From the perspective of the information role of auditing, the qualified audit report fulfils its purpose, because this role assumes that auditing improves the quality of management produced financial information and, if necessary, the auditor supplements this information by qualifying the audit report. Therefore, the audit report can be a relevant source of information for investors. In addition, the audit report can also be relevant from the perspective of insurance role. A qualified audit report significantly reduces the auditor's risk of litigation losses and thus reduces the investors' chances of covering their losses in case of

bankruptcy. Also, from this perspective, the announcement of a qualified audit report could result in a share price reaction.

The effect of firm specific characteristics affecting information asymmetry has not been analyzed in the context of stock market reactions to audit reports. The literature discussed found considerable evidence that agency problems are an important determinant of choice of auditor, quality of auditing demanded and audit fees paid, for example. This literature clearly indicates that the significance of auditing is affected by agency problems, and in this study it is assumed that the information asymmetry and conflict of interests also affect how important the audit report information is.

4 DATA ENVIRONMENT

This section describes the regulation and practice around going concern audit reports and auditors' internal control weakness disclosures. First, the backgrounds, contents and potential reasons for the audit reports are introduced. The second key issue in this chapter is the dating and filing of the audit report. This is important in order to be able to find support for any selection of event date. Above all, as noted in the previous chapter the selection of event date is essential for the findings of the empirical study to be reliable.

4.1 Reports on audited financial statements

The audit report is the main visible product of the audit. It communicates the findings to the financial statement users. Butler, Leone and Willenborg (2004) define the audit report as the observable output from an unobservable process. The auditor should plan the engagement in such a manner that he/she can obtain reasonable assurance whether the financial statement is free from material misstatements. The audit report must contain an opinion on whether the firm's financial statement presents fairly, in material respects, the financial position of the firm. However, if such an opinion cannot be issued, the auditor should give the reasons in the report. The auditing profession has adopted a standard structure and wording for the audit report. The standard form is to help the financial statement users in determining the degree of responsibility taken by the auditor.

In certain circumstances the auditor may be required to depart from the standard report and provide explanatory guidance. These circumstances are of such a nature that they do not affect the auditor's unqualified opinion. These include, according to AU 508.11 (AICPA 1988b), when 1) the auditor's opinion is based in part on another auditor's report, 2) the auditor prevents the financial statement from being potentially misleading due to unusual circumstances, 3) there is substantial doubt about the entity's ability to continue as a going concern, 4) there is a material change in accounting principles, 5) certain circumstances relating to reports on comparative financial statements exist 6) selected quarterly financial data required by SEC have not been filed or reviewed, 7) regulation concerning supplementary information has been neglected or 8) other information in a document containing audited financial statements is materially inconsistent with information appearing in the financial statements.

In addition to the unqualified opinion and the opinion with explanatory language, the auditor may be confronted with circumstances that require a qualified opinion, adverse opinion or disclaimer of opinion. The auditor may issue a qualified opinion because of a scope limitation or departure from GAAP. A disclaimer of an opinion means that the auditor does not express an opinion. This may be the case when there is an insufficient amount of evidence for forming an opinion. Finally,

in the adverse opinion the auditor states that the financial statements are not presented fairly in conformity with the GAAP. (AICPA 1988b)

4.2 Going concern reporting

According to the auditing standard AU 341.2 (AICPA 1988a), one of the auditor's main responsibilities is to evaluate whether there is substantial doubt that the firm will be able to continue as a going concern for a reasonable period of time. However, here the reasonable period should not be more than one year from the audit report date. The auditor should decide whether all conditions and events in aggregate indicate that there could be substantial doubt about the firm's ability to continue as a going concern for a reasonable period of time.

According to the standard AU 341 (AICPA 1988a) the auditor should follow three steps when considering whether a going concern opinion should be issued. First, the auditor needs to evaluate whether planning procedures, evidence gathering and completion of the audit on aggregate indicate that the going concern conditions of the firm are under doubt. The evaluation process may, before forming a conclusion, also entail obtaining additional evidence about conditions and events that support or mitigate the auditor's doubt.

Second, the auditor should initially discuss the matter with management and determine whether management has identified the events or conditions that constitute a threat to the going concern assumption. When there are plans in place that management has implemented or considered implementing in order to mitigate the threats to the going concern assumption, the auditor should evaluate the likelihood of the success of such plans. If no such plans exist, the auditor should request management to make such an assessment. The auditor should also initiate communication with those charged with governance responsibilities. The discussion should include identification of matters that constitute a material uncertainty, evaluation whether the use of the going concern assumption is appropriate in the preparation and presentation of the financial statements.

Third, after evaluating the evidence and the management plans, the auditor should assess whether there is substantial doubt about the firm's ability to continue as a going concern. If there is substantial doubt the auditor must first decide whether the firm's disclosures have adequately discussed the reasons and consequences that jeopardize the going concern ability. If the disclosures with respect to the firm's ability to continue as a going concern are adequate, then the auditor should include an explanatory paragraph in the audit report, otherwise conditions for issuing an "except for" or "adverse opinion" exist.

The following is as an example of an explanatory paragraph, where the auditor Ernst & Young LLP has disclosed concerns related to going concern issues in the audit report of AMR Corporation (March, 31, 2003)

"The accompanying financial statements have been prepared assuming the Company will continue as a going concern. As more fully described in Note 2, the Company's recent history of significant losses, negative cash flows from operations, uncertainty regarding the Company's ability to reduce its operating costs to offset the declines in its revenues, the potential failure of the Company to satisfy the liquidity requirements in certain of its credit agreements, and its diminishing financial resources, raise substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 2. The financial statements do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classification of liabilities that may result from the outcome of this uncertainty."

As previously described, the auditor has a range of different reports in different situations. However, in listed US firms the financial statements are usually accompanied by a standard report with an unmodified opinion. The second type of report is the modified report with an explanatory paragraph for either going concern uncertainties or consistency issues (e.g. adoption of a different accounting principle). According to Butler et al. (2004), the two abovementioned reasons account for about 98 percent of the non-standard audit reports issued in the U.S. from 1994 to 1999. Other types of audit reports are effectively restrained by regulation. Based on SEC (1980) Regulation S-X "Rules of general application", the consequence of an audit qualification due to GAAP violations is that the financial statement will be presumed to be misleading or inaccurate. Due to this it is likely that public firms resolve the issues in the financial statements that the auditor considers to result in a qualified, disclaimed or adverse opinion.

4.3 SOX 404 and auditors' disclosures on internal control weaknesses over financial reporting

Section 404 of the Sarbanes-Oxley Act (SOX 2002) stipulates that the management of public firms must include in its annual disclosure a report of the firm's internal control over financial reporting. The report of management must, according to the Auditing Standard No. 2 (PCAOB 2004), contain at least a management's assessment of the effectiveness of the internal controls. Additionally, Section 404 (SOX 2002) specifies that the auditor's report over financial reporting must also include the auditor's opinion on management's assessment of the effectiveness of internal controls, as well as the auditor's independent assessment of the effectiveness of internal controls.

Before the implementation of Section 404, management was required to evaluate the effectiveness of disclosure controls and procedures, report the findings of their evaluation and indicate if there has been any change in internal controls. From management's point of view the difference between Section 302 and Section 404 disclosure is that under Section 302 the review of internal control was subject to

less regulation and the disclosure rules were less specific compared to those of Section 404.

In detail, Auditing Standard No. 2 (PCAOB 2004) requires that management include in its annual report its assessment of the effectiveness of the firm's internal control over financial reporting in addition to its audited financial statements as of the end of the most recent fiscal year. The report must include a statement on management's responsibility over internal controls, identification of the internal control framework used and an assessment of the effectiveness of internal controls. Management may not report that the firm's internal control over financial reporting is effective if there are one or more material weaknesses. Finally, management must mention that the auditor has evaluated management's assessment and issued a report thereafter.

The auditor's evaluation of management's internal control report should, according to the Auditing Standard No. 2 (PCAOB 2004), first include an evaluation of management's statement of responsibilities with regard to internal controls. In addition, the auditor must evaluate the appropriateness of the internal control framework used and then review management's internal control efficiency assessment and disclosure.

To form a basis for expressing the report, the auditor must plan and perform the audit in such a manner that there is reasonable assurance about whether the firm maintained effective internal control over financial reporting. The auditor also must also audit the firm's financial statements because, according to Auditing Standard No. 2 (PCAOB 2004), the information the auditor obtains during a financial statement audit is relevant to the auditor's conclusion about the effectiveness of the firm's internal control. The auditor should evaluate the significance of a deficiency in internal control by determining the potential that a deficiency, or a combination of deficiencies, could result in a misstatement in the financial disclosures.

Auditing Standard No. 2 (PCAOB 2004) paragraphs 8–10 indentify three types of internal control deficiencies that differ in the probability that misstatements in the disclosures are not detected and prevented by the internal controls:

- A control deficiency exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect misstatements on a timely basis.
- A significant deficiency is a control deficiency, or combination of control deficiencies that adversely affects the firm's ability to initiate, authorize, record, process, or report external financial data reliably in accordance with generally accepted accounting principles such that there is more than a remote likelihood that a misstatement of the firm's annual or interim financial statements that is more than inconsequential will not be prevented or detected.

-A material weakness is a significant deficiency, or combination of significant deficiencies that results in more than a remote likelihood that a material misstatement of the annual or interim financial statements will not be prevented or detected.

This wording is commonly used in both management's and auditor's disclosures on internal controls. The purpose of this is to classify the seriousness of the deficiencies and to harmonize the terminology used in the disclosures.

4.4 Dating and signing the audit report

The audit report is always concluded with the manual or printed signature of the audit firm and the date of the report. Under AU 103 (AICPA 2005), the audit report should be dated when sufficient evidence to support the report has been obtained. To the user the audit report date indicates the last day up to which the auditor has taken account of all significant events that have occurred after the date of the financial statements. The audit report date will typically be close to the date that the auditor delivers the audit report to the firm (AICPA 2007).

Auditing Standard No. 2 (PCAOB 2004) states that the when the auditor issues separate reports on internal controls and on financial statements, the date of both reports must be the same. This is because the view of the PCAOB is that the auditor cannot audit internal control over financial reporting without also auditing the financial statements.

5 GOING CONCERN AUDIT REPORTS AND STOCK RETURNS

After examining the theoretical framework for auditing and reviewing studies on the relevance of audit reports to stock markets, this section presents the first part of the empirical analysis of this dissertation. The purpose of this chapter is to empirically investigate first whether there is a stock market reaction to the going concern audit report announcement and then whether firm specific characteristics affecting the information asymmetry are related to the stock reactions. Next the hypotheses to be tested are developed, then the data and methodology are introduced and finally the results from the empirical analysis are presented.

5.1 Hypothesis development

A simultaneous or delayed relationship between earnings information and stock price changes has been documented in innumerable empirical studies since Ball et al. (1968) and Bernard et al. (1989). Moreover, it is equally obvious that, as Lev (1989) reports, earnings information explain only a fraction of the change in returns on the earnings announcement date. Ryan and Taffler (2004) show that firms' formal accounting releases account for less than 20 percent of economically significant stock price changes.

The auditing of financial statements *per se* is not usually considered a source of information to the stock markets. The function of auditing is rather to ensure the reliability and sufficiency of the financial information that is issued by the firms. In some cases however, the audit report may contain relevant and new information. This, for example, is when the auditor questions, after assessing both public and private information, the firm's ability to continue as a going concern or when the auditor reports that the earnings information in the financial statement issued by the firm does not fairly present the financial position of the firm. Audit reports in these cases have the potential to change the market responsiveness to earnings or affect the estimation of future cash flows.

5.1.1 Abnormal returns around auditors' going concern audit report dates

Crashwell (1985) concluded over 20 years ago that "because the evidence is contradictory and inconsistent, it is not possible to make general statements about the information content of audit qualifications". Mutchler (1985) shows that the going concern audit report disclosures are a function of publicly available information, confirming the financial deterioration of the firm and therefore are predictable. Several studies have been presented since this conclusion, but nearly two decades later Pucheta et al. (2004) argue in their review that research has still not provided any absolutely conclusive results. Pucheta et al. (2004) also propose that

the market is able to anticipate the information disclosed in an audit report before it becomes public and thus the information is already discounted in the stock prices when it arrives (Pucheta et al. 2004).

However, taking into account the complexity of the signals that the financial information may communicate and the fact that the audit reports reflect the auditors' views after also considering all available private information, such as management plans and forecast data, the audit reports could be expected to contain information valuable to investors. In addition, the demand for auditing is based on the trust that auditors facilitate market transactions by providing an opinion on financial statements, which should help reduce the agency problems between the management and the investors (Titman and Trueman 1983) and thus the audit reports are considered to be informative.

A wide range of studies have devoted considerable effort to trying to identify the dates when the investors had knowledge of the auditor's report. Dodd et al. (1984) concentrate on analyzing the public announcement date of the audit qualification. Based on their investigation they decided to focus on the announcement of the 10-K or annual report. Dopuch et al. (1986) find evidence of a significant negative stock market reaction to media disclosures of qualified audit reports, which was considered a timelier disclosure and because it attracted more attention it was also considered to have more severe effects. Chen et al. (1996) investigate the association between going concern audit reports and market reactions to bankruptcy filings. The results indicated that going concern audit reports contain information that is useful in predicting bankruptcy. Carlson et al. (1998) use a matched pair -method to analyze differences in stock market performance of firms receiving a going concern audit report and firms with no going concern audit reports. They found significant differences in mean stock returns for the two groups.

Soltani (2000) reports significant negative abnormal returns for French firms around the estimated announcement dates of audit reports. Soltani (2000) defines the event date as the fifteenth day before the annual general meeting of each firm. Pucheta et al. (2004) use the earlier of the two dates: the fifteenth day before the annual general meeting or the date when the Spanish Stock Exchange Commission makes the financial statement and audit report available. They found that qualified audit reports have no information value for investors.

To conclude, a going concern audit report may contain information that shifts owners' perceptions of a firm's risk and therefore decreases owners' expectations of future cash flows and stock performance. By conveying incremental information to the financial statement users, the issuance of a going concern audit report is likely to have a negative effect on that firm's stock price.

The choice of the event date here is based on suggestions in existing audit reports and accounting literature. In this study the empirical analysis is performed using

two alternative event dates. First, the audit report date (i.e. the date typed by the auditor on the audit report) is considered to be the first possible day when the auditor's assessment of the firm is known by anyone else than the auditor. As a consequence, it is also considered to be the first possible trading day using this information. It is a timelier date than the dates used in earlier studies. In fact, according to the analysis of the sample in this study, the audit report is dated on average 25 days before the 10-K report is filed with the SEC. Second, the latter part of the empirical analysis is a test for the robustness of the results and uses the standard 10-K report filing date as the event date. This date is most commonly used in studies because on this date the annual report is filed with the SEC and the information contained in it, including the audit report, is readily available for everyone.

Although the audit report date has been discussed by Soltani (2000), no results have been reported regarding it. The selection of the audit report date is supported by findings from studies on the relevance of 8-K reports reporting e.g. auditor switches. Carter et al. (1999) investigate the stock price reaction to 8-K reports filed with the SEC. They found a reaction of about 9 percent one day before the event date but little response on the filing date. They also find that 8-K reports containing bad news are more likely to be filed with a longer delay. They conclude that using the 8-K report stamp date as the event date could be one reason why literature have failed to constantly detect a significant reaction to the 8-K report filings.

In a recent study by Knechel et al. (2007) the authors find a significant stock market reaction to firms switching to and from brand name auditors (i.e. Big 8/6/5/4-auditors). In contrast to the early auditor switching studies (e.g. Fried and Schiff 1981; Johnson and Lys 1990) which typically used the 8-K filing date as the event date, Knechel et al. (2007) use the date of the actual event as the event date, i.e. the date when the relationship with the predecessor officially ended and a successor was appointed.

Based on the findings from the literature presented above, the following hypothesis is tested around the audit report date, and as a robustness test the same hypothesis is tested around the the 10-K report filing date:

H_1: Going concern audit reports are associated with negative abnormal stock returns

5.1.2 Do information asymmetry, information environment and agency costs of debt affect stock market reactions to audit reports?

An essential purpose of auditing is to provide owners with the information required by the accounting standards in case the financial statement information is not sufficient or accurate. Therefore, the auditor's report is an essential part of the

audit system, since the audit report is the instrument that auditors use to communicate the results of their work to the owners.

The existing auditing and accounting literature suggests that the information asymmetry and factors affecting it have a strong influence on various aspects of accounting and auditing issues. Warfield et al. (1995) find that agency problems have a negative relationship with the informativeness of accounting. Moreover, agency costs affect the demand for audit quality and choice of the auditor (Francis et al. 1988; DeFond 1992; Blouin et al. 2007), and firms demand external auditing due to managements' and owners' conflict of interests (Chow 1982).

Information asymmetry

Audit quality has been shown to affect the relationship between informativeness of earnings and management ownership and additionally management ownership is found to affect the relationship between discretionary accruals and audit fees (Gul et al. 2002). Furthermore, firms with a high level of conflict of interests are associated with higher audit fees (Gul et al. 1998, 2001; Nikkinen et al. 2004). Therefore, the conclusion from these studies is that the relevance of auditing is significantly affected by agency problems.

The outside shareowners do not have access, resources or incentives to acquire relevant information to evaluate the quality of the firm's financial information, whereas the management is in a position to do so. This creates an information asymmetry between management and outside owners. The more diffused the ownership is, the greater the information asymmetry is. Auditing, in particular the auditor's report, reduces information asymmetry, because the auditor evaluates whether the financial reports are produced and reported according to existing regulation. For management the audit report is of less relevance in this sense, because using the information available to them, the same conclusions may be made. In firms with higher management ownership the information asymmetry is lower, because a higher proportion of the owners have access to insider information and the interests of management is more aligned with the owners' interests. As a consequence, the audit report is less important in firms with higher management ownership, due to the aligned interests and because owners are likely to be better informed in these firms.

As a consequence, it can be hypothesized that monitoring provided by the auditor, including the audit report information, is more relevant in firms with low management ownership and high information asymmetry. This is because in these firms the monitoring of management is more important for the owners and the owners are in a weaker position to monitor by themselves. Based on this logic, information asymmetry is negatively related to the market reaction to going concern audit reports, indicating that as the managements' and owners' interests are more diffused (higher information asymmetry), the audit report information is

more relevant and more surprising, and the market reacts more negatively. Also, since it is possible that a stock market reaction around the *audit report date* is a result of activities of informed traders the effect of information asymmetry on informed trading needs to be recognized as well. The literature reviewed in Section 3.2 is consistent that informed traders are more likely to be active when information asymmetry is high. Consequently, it is more likely that negative abnormal reactions occur for firms with high information asymmetry, i.e. the information asymmetry is negatively related to the market reaction around the audit report date. The following hypothesis is tested around the audit report date, and as a test for robustness also around the 10-K filing date:

H_2: The information asymmetry between management and owners has a negative affect on the market reaction to going concern audit reports.

Information environment

As mentioned previously, it has been documented in several studies that unexpected qualified audit reports result in more notable stock reactions (e.g. Loudder et al. 1992). Furthermore, other studies have concluded that qualified audit reports can be predicted using financial and non-financial information (Dopuch et al. 1987). It is expected that the accuracy of such predictions increases for firms with richer information environment, i.e. more analyst following or media coverage, simply because more information is available. As a consequence, the qualified audit reports could be assumed to be less unexpected for firms with richer information environment, and thus result in a less notable market reaction.

Firm size is considered to be one simple and relevant determinant of the richness of the information environment (Mitra et al. 2005). Smaller firms have lower visibility in the markets and a weaker information environment. As a result, in the absence of other non-management produced information, the relevance of the audit report information is of greater value to the investors of firms with weak information environment. Additionally, smaller listed firms are, besides receiving less attention from analytics and media, also potentially monitored less closely by the authorities. This could enable informed traders of firms with weaker information environment to engage themselves in trades on inside information and gain profits or cut losses.

Consequently, it is hypothesized that firms with a richer information environment experience a less negative market reaction around the going concern audit report date. As a robustness test the identical hypothesis is also tested around the 10-K filing date.

H_3: The information environment of the firm has a positive affect on the market reaction to going concern audit reports.

Agency costs of debt

One relevant feature of corporate finance policy that affects the information asymmetry and management's abilities to act in their own interests is the choice of debt level. Debt financing involves costs and benefits. One essential cost of debt is the potential conflicts between stockholders and bondholders. The literature suggests that interests may conflict over investment and financing decisions (Jensen et al. 1976; Myers 1977; Smith et al. 1979), but because bondholders recognize these issues in advance they strive to limit such opportunistic behavior that could negatively affect the debt payments. Bondholders can insist on increased monitoring (Jensen et al. 1976), restricting covenants (Smith et al. 1979; Billett et al. 2007), shorter maturity time (Myers 1977), higher interest rate (Bergman et al. 1991) or reporting conservatism (Ahmed et al. 2002; Beatty et al. 2008).

All these above mentioned demands by bondholders incur agency costs of debt to the firm. Substantial empirical evidence exists suggesting that agency costs of debt can be reduced by increasing management discipline and monitoring, and moreover increasing the quality of financial information (Agrawal et al. 1982; Sengupta 1998; Francis et al. 2005; Bharath et al. 2008; Ertugrul et al. 2008).

Debt financing has a potential effect on the relevance of audit report information for two reasons. First, because management is under closer monitoring, it is also likely that management will be more restricted from initiating trades using insider information before the public announcement. Second, debt financing is likely to increase the amount of information and the quality of the information available on the market, and therefore increase the possibilities of investors to foresee going concern issues. It may also be that, due to covenant protection, the behavior of bondholders may give investors early warning signals about potential financial difficulties.

As a consequence, the literature discussed above suggests that mechanisms set up due to the agency costs of debt may affect the relevance of audit report information. Specifically, in firms with higher agency costs of debt, i.e. more debt monitoring, higher quality requirements for financial information, and more management discipline, the going concern audit report is less surprising and the market reaction is consequently less negative. The following hypothesis is tested around the audit report date (as a robustness test also around the 10-K filing date):

H_4: Agency costs of debt have a positive affect on the market reaction to going concern audit reports.

5.2 Data

The sample used in the empirical analyses consists of the Russell 3000 Index firms. The Russell 3000 includes the 3000 largest and most liquid firms listed in the U.S. and aims to capture the return of the overall market.

A search in the Thomson Financial Worldscope database identified 636 firms that have received a non-standard audit report, coded "05 qualified" from financial years ending 2002–2007. This code contains all reports classified as departing from the standard unqualified opinion, i.e. unqualified opinions with explanatory paragraphs and qualified opinions. This data period has been chosen in order to include only audit reports dated after the uncovering of the events around Enron and Arthur Andersen, which may have affected the auditors reporting practices and, on the other hand, investors' responsiveness to bad news. As a consequence, all audit reports in the sample are dated within the period February 2002 – February 2008.

Following prior studies, two restrictions are imposed in defining the final sample. First, only first time going concern audit reports are included in the sample, because successive going concern audit reports may reduce the information content of the announcement (e.g. Jones 1996, Herbohn et al. 2007). By using first time going concern audit reports only, the markets' ability to predict the forthcoming report is restricted. First time going concern audit reports are verified by manually examining the audit report from the previous year. Second, all financial institutions (SIC codes 6000-6900) are excluded from the sample due to unique features in their regulation.

After applying filters as mentioned above, a first time going concern audit report and stock price data are located for 237 firms from public sources. These 237 audit reports are manually verified that they indeed are going concern reports. As previously pointed out, a first time going concern audit report is defined in this study as the audit report with the previous period audit report being unqualified. Table 2 illustrates the distribution of the going concern audit reports used in this sample across the year of the audit report date and across industries.

Table 2 clearly shows the effect that the Enron and Arthur Andersen scandal had on the frequency of going concern audit reports. Almost 40 percent of the first time going concern audit reports in this sample, are dated in year 2003 and over 70 percent between 2002 and 2004. Furthermore, the majority of the going concern reports are concentrated on two industries, manufacturing and services. However, comparing the proportions of industries in the sample versus the representations in the Russell 3000, it is worth noting that the services industry (7000-8900) is heavily overrepresented in the sample.

The going concern audit reports containing the audit report dates are manually collected from the SEC Edgar database and the Thomson One Banker library. The

Thomson Financial Datastream database contains the information needed for estimating the dependent variable and the information of the agency variables as well as control variables are from Thomson Financial Worldscope. The number of firms with independent variables data available for the regression analysis is tabulated in Table 3.

Table 2. Number of firms by SIC codes and years.

TABLE 2.
Number of firms by SIC codes and years

SIC Code	Industry description	% of firms in sample	% of firms in Russell 3000	# of firms in 2002	# of firms in 2003	# of firms in 2004	# of firms in 2005	# of firms in 2006	# of firms in 2007	# of firms in 2008
0-1999	Agriculture, Mining and Construction	6.75	6.92	1	9	3	1	1	0	1
2000-3999	Manufact.	39.66	45.49	21	31	15	14	5	2	6
4000-4999	Transport., Communic., Electric, Gas, and Sanitary services	6.33	11.82	2	5	3	4	0	0	1
5000-5999	Wholesale and retail trade	8.02	12..82	5	6	4	3	0	0	1
7000-8999	Services	39.24	22.92	13	42	12	7	6	5	8

The table presents the number of firms by standard industry classification (SIC) codes divided across year of first-time going concern audit report. The sample consists of 237 firms, Financial institutions (SIC codes between 6000 and 6900) are excluded from the sample.

5.3 Methodology

The market reactions to the going concern audit report information are investigated during the event period. The empirical analysis of this dissertation uses two alternative event dates: the audit report date and the 10-K report filing date. The event period begins one trading day before and ends one trading day after the event date. The results of event studies may be sensitive to the length of the event period. Accordingly, following earlier studies (e.g. Knechel et al. 2007; Chen et al. 2000; Holder-Webb et al. 2000; Beneish et al. 2008; Hammersley et al. 2008)

this study uses a short event period. The one day standardized abnormal return periods used are SAR [0], SAR [-1] and SAR [1] and the cumulative standardized abnormal return periods are CSAR [-1,+1], CSAR [-1,0] and CSAR [0,+1]. The short event period is used to restrict the influence of possible concurrent information releases. The audit report date is the day that is printed on the audit report and the 10-K report date is the date that SEC Edgar database reports that the 10-K has been filed.

In order to estimate abnormal returns, an estimation period of 200 days preceding the event date is used. Therefore, stock price data must be available for both the event period and the preceding estimation period for the observation to be selected for the analysis.

Initially, abnormal returns are here defined as the market model adjusted daily abnormal returns (AR_{it}), with the return of the Russell 3000 Index used as a proxy for the market return (R_m). Daily stock returns (R_{it}) are calculated as differences in logarithmic price indices using closing price data.

(1) $$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$$

Where:

AR_{it} = Abnormal return for firm i at time t

R_{it} = Return for firm i at time t

R_{mt} = Return of the market at time t (Russell 3000)

The parameters α_i and β_i in the market adjusted model are estimated for each firm using daily stock returns for the previous 200-day period.

Daily standardized abnormal stock returns around the audit report date are determined for each event day by dividing each stock's market model adjusted abnormal returns by the standard deviation of the estimation period's abnormal returns.

(2) $$SAR_{it} = \frac{AR_{it}}{\hat{S}(AR_{it})}$$

Where:

SAR_{it} = Abnormal return for firm i at time t

AR_{it} = Return for firm i at time t

$\hat{S}(AR_{it})$ = Standard deviation of estimation period abnormal returns for firm i at time t

In addition to the standardized abnormal returns (SAR) on individual days in the event period, the cumulative standardized abnormal returns (CSAR) are also in-

vestigated. The cumulative abnormal returns are calculated for the three different event windows in the event period, CSAR [-1,+1], CSAR [-1,0] and CSAR [0,+1].

$$CSAR_{it} = \sum_{t=d-e}^{d} SAR_{it} \quad (3)$$

To test whether the mean standardized abnormal returns in the event window are statistically significantly different from the expected abnormal return, which is zero (Hypothesis 1), the test statistic proposed by Boehmer, Masumeci and Poulsen (1991) is applied. This test statistic is obtained by dividing the average of standardized abnormal returns of the sample firms by its cross-sectional standard deviation.

$$t = \frac{\frac{1}{n}\sum_{i=1}^{n} SAR_{it}}{s/\sqrt{n}} \quad (4)$$

Where:

SAR = mean standardized abnormal return
s = standard deviation
n = number of observations

The Boehmer et al. (1991) test statistic has the advantage of giving relatively smaller weights to returns of firms with larger volatility and hence the test is more robust even if the event is associated with volatility changes. The Boehmer et al. (2001) test statistic relies on the assumption that the abnormal returns are cross-sectionally uncorrelated. Since there is not a single common event day for all firms in the sample, but rather firms have individual event dates, the returns are most likely uncorrelated.

To empirically test hypotheses H_2, H_3 and H_4 the following regression model is estimated:

$$SAR_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_i + e_i \quad (5)$$

Where:

MOWN = percentage of closely held shares
SIZE = logarithm of total assets
DA = percent of total debt to total assets
Z = Altman's Z-score (1-year lagged) re-estimated by Grice (1997)
e = error term

Management ownership (MOWN) is the closely held shares percent. Management ownership measures the information asymmetry between the owners and the management. SIZE is the logarithm of total assets and is here used to proxy the richness of the information environment of the firm. Total debt to total assets ratio (DA) measures the agency costs of debt. A one-year lagged Altman's (re-estimated by Grice 1997) Z-score (Z) is used to control for the financial distress the financial report in the previous year has signaled to the markets, and thus the surprise of the going concern audit report (Citron, Taffler and Uang 2008). Additionally, the Z-score correlates strongly with the typical control measures of profitability and liquidity, and therefore the Z-score also controls for the riskiness (e.g. risk of bankruptcy) of the investment, which is the most important factor for the owners when evaluating the audit report information. A Z-score below 1.10 is considered a "troubled firm" in the Altman's model re-estimated by Grice (1997).

To control for the influence of outliers all tests are also conducted after winsorizing the variables at two standard deviations from the mean (see e.g. Bernard and Thomas 1990). The winsorized statistics are reported in Panel B of each table.

5.4 Results on the abnormal stock reaction around the audit report date

This section presents the results from the empirical analysis. The early part of the section reports the findings on the abnormal returns around the going concern audit report date, whereas the latter part uses the 10-K report date as the event date. Here the hypothesis is that there is a negative abnormal stock reaction to going concern audit reports around the audit report date. The second part provides the results on the relationship between information asymmetry, information environment, agency costs of debt and abnormal returns around the event date. Based on existing research it is hypothesized that information asymmetry has a positive relationship with abnormal returns to going concern audit reports and the properties of information environment and agency costs of debt are positively related to the relevance of disclosed information.

5.4.1 Descriptive statistics

Table 3 presents descriptive statistics for the variables used in the analysis and provides an overview of the sample. Panel A shows that the mean standardized abnormal returns are negative on two event days and in all three periods, only the SAR [0] is positive. However, the median is positive on SAR [0], SAR [-1,+1] and SAR [-1, 0]. The minimum, maximum and standard deviation suggests that the spread of the abnormal returns is high. The descriptive statistics for the independent variables in this study illustrate that some of the firms in the sample are suffering from extreme financial distress, which is noted e.g. from the lagged Z-

scores. Generally, the statistics in Panel A indicate that the extreme values in the variables need to be controlled for.

Panel B presents statistics of the variables after winsorizing them at two standard deviations from the mean. Now, naturally, the spread of the observations has diminished. The mean SAR values are all negative except for the period CSAR [-1,0]. When examining the descriptive statistics concerning the independent variables used in the regressions it becomes apparent that the sample consists of firms in severe financial difficulties. Even after winsorizing the variables at two standard deviations from the mean, some variables still indicate serious financial difficulties. The mean and median values for management ownership are just below 40 percent. Intuitively this seems high. However, as the mean size reveals, the sample firms are relatively small measured by total assets, and the size of a firm is usually negatively correlated with management ownership.

In Table 4 a pairwise correlation matrix of the variables used in the regression analysis is shown, with CSAR [-1,+1] representing the standardized abnormal returns on different days and periods, i.e. the dependent variables. In Panel A, as well as in the winsorized Panel B, the dependent variable CSAR [-1,+1] is positively correlated with DA. Accordingly, the firm leverage seems to affect the abnormal returns of a firm receiving a going concern audit report in the period around the audit report date. This could be interpreted as early evidence that agency costs of debt increase the monitoring of a firm's financial position and thus reduce the surprise of the going concern information, or alternatively that leverage increases management discipline and, for example, restricts trading on private information. MOWN has a statistically significant negative correlation with SIZE, as is generally expected, firms with higher management ownership tend to be smaller in size. Furthermore, MOWN has a strong positive correlation with DA and a negative correlation with Z (Panel B). In this sample firms with higher management ownership have higher leverage, which is also logical. Since a firm has to obtain finance by some means and if the firm persists in holding on to the equity rights, the financing has to come from the issuance of debt. Higher DA of high MOWN firms is also likely to contribute to the higher financial distress (Z-value in panel B) of firms with high management ownership. SIZE of the firm is negatively correlated with DA and positively correlated with Z. Larger firms have less leverage and they generally experience less financial distress, measured by the Z-score.

Table 3. Descriptive statistics of variables (Audit report date)[a]

PANEL A. Original data set

	SAR [0]	*SAR [1]*	*SAR [-1]*	*CSAR [-1,+1]*	*CSAR [-1, 0]*	*CSAR [0,+1]*	*MOWN*	*SIZE*	*DA*	*Z*
Mean	0.001	-0.019	-0.039	-0.057	-0.037	-0.018	38.951	2.465	64.518	-11.638
Median	-0.008	0.005	0.000	-0.045	-0.045	0.000	35.992	2.230	23.006	-3.631
Maximum	5.899	5.150	9.801	12.195	7.525	11.049	97.103	10.506	3189.561	8.012
Minimum	-4.580	-2.839	-13.356	-16.571	-14.171	-4.306	0.000	-10.054	0.000	-257.393
Std. Dev.	1.171	0.980	1.344	2.043	1.761	1.569	25.183	2.628	233.029	28.011
Skewness	0.933	1.331	-2.375	-0.973	-1.399	1.664	0.431	-0.037	11.017	-5.375
Kurtosis	10.211	10.191	54.640	25.894	23.675	14.170	2.303	5.022	141.898	39.390
n	237	237	237	237	237	237	228	234	235	197

Table 3. Continued.

PANEL B. Winsorized data set

	SAR [0]	*SAR [1]*	*SAR [-1]*	*CSAR [-1,+1]*	*CSAR [-1, 0]*	*CSAR [0,+1]*	*MOWN*	*SIZE*	*DA*	*Z*
Mean	-0.024	-0.047	-0.036	-0.027	0.004	-0.056	38.928	2.501	45.624	-10.134
Median	-0.008	0.005	0.000	-0.045	-0.045	0.000	35.992	2.230	23.006	-3.631
Maximum	2.503	2.351	1.636	4.543	4.162	3.602	92.117	7.950	337.244	0.348
Minimum	-2.391	-1.990	-1.911	-3.277	-2.661	-3.227	0.968	-1.813	0.000	-84.687
Std. Dev.	0.927	0.817	0.689	1.459	1.208	1.301	25.079	2.394	68.866	18.752
Skewness	0.090	0.164	-0.246	0.866	0.888	0.208	0.422	0.403	2.729	-2.961
Kurtosis	4.932	4.663	4.361	5.245	5.979	4.473	2.271	2.810	10.967	11.132
n	237	237	237	237	237	237	228	234	235	197

Notes:

PANEL B. Observations winsorized at two standard deviations from the mean

[a] denotes the event date used

The variables are defined as follows:

SAR= Standardized abnormal return

CSAR= Cumulative standardized abnormal return

MOWN = percentage of closely held shares

SIZE = natural logarithm of total assets

DA = percent of total debt to total assets

Z = Altman Z-score (1-year lagged)

Table 4. Correlation matrix (Audit report date)[a]

PANEL A. Original data set

	CSAR [-1, +1]	*MOWN*	*SIZE*	*DA*	*Z*
CSAR [-1, +1]	1				
MOWN	-0.090	1			
SIZE	0.067	-0.197***	1		
DA	0.191***	0.299***	-0.264***	1	
Z	-0.051	-0.062	0.377	-0.255***	1

PANEL B. Winsorized data set

	CSAR [-1, +1]	*MOWN*	*SIZE*	*DA*	*Z*
CSAR [-1, +1]	1				
MOWN	-0.065	1			
SIZE	0.094	-0.184***	1		
DA	0.151**	0.286***	-0.197***	1	
Z	-0.098	-0.121*	0.459***	-0.330	1

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively
[a] denotes the event date used
The variables are defined as follows:
CSAR= Cumulative standardized abnormal return
MOWN = percentage of closely held shares
SIZE = natural log of total assets
DA = percent of total debt to total assets
Z = Altman Z-score (1-year lagged)

Monthly book-to-market and size adjusted returns for a 12-month period around the event date

This section of descriptive statistics presents the results from a monthly analysis of the stock returns around the event period. The objective is to give an overview of the performance of the stocks of the firms receiving a going concern audit report. This overview gives some indication as to whether the audit report information can be anticipated long before the audit report date or the 10-K date, or alternatively whether there is a strong abnormal reaction some time after the disclosure of the report.

Monthly abnormal returns are estimated using the Fama-French three factor model (1993).

$$(6) \qquad R_{it} - R_{ft} = \alpha + \beta(R_{mt} - R_{ft}) + sSMB_t + hHML_t + e_i$$

Where:

R_{it} = Return for firm i at time t

R_{ft} = Risk free rate (one-month Treasury bill rate)

$R_{mt} - R_{ft}$ = Return of the market at time t minus the risk free rate

sSMB = Return of a portfolio of small firm stocks minus the return of a portfolio of large firm stocks

hHML = Return of a portfolio of high book-to-market stocks minus the return of a portfolio of low book-to market stocks

The estimated intercept α in the Fama-French (1993) three factor model of Equation 6 is the abnormal return. The historical monthly values for these factors are from the data library of Kenneth R. French (http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html). The model takes into account the stock's exposure to market risk, to size risk and value risk.

Figure 1 illustrates the three-factor model monthly abnormal returns for six months before the audit report date and six months after. The 10-K report date is disclosed either the same or the following month as the audit report is dated. The abnormal returns are marginally positive during the pre-audit report period until the preceding month (-1). They remain negative until the second month after the event. As of the third month after the event the abnormal returns are positive. This figure demonstrates that the abnormal returns are negative only around the event month, which may indicate that the audit report information is entering the markets around the time that it is issued and dated by the auditor, handed over to the firm, and later disclosed publicly. However, additional analysis (not tabulated) on the monthly three-factor model abnormal returns reveal that only the positive return of month [+4] is statistically significant (t-statistic=1.777).

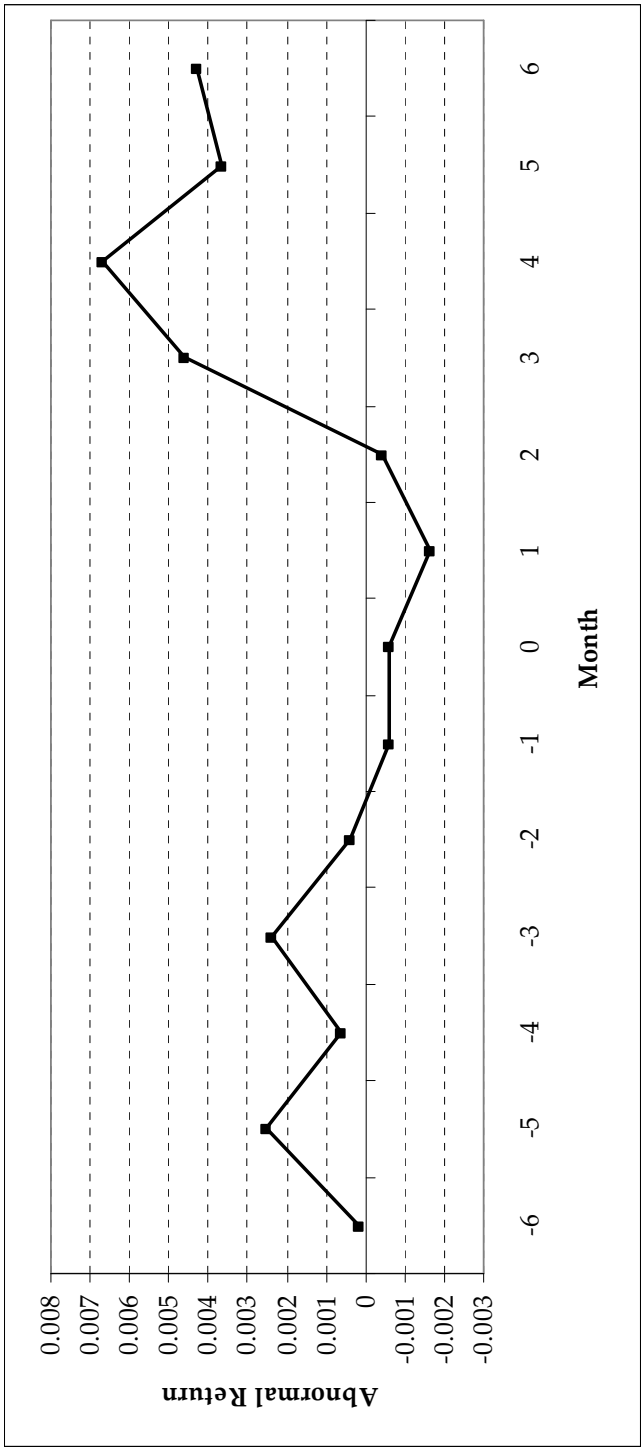

Figure 1. Monthly size and book-to-market adjusted abnormal stock returns for a 12-month period around the going concern audit report date.

5.4.2 Abnormal returns around the going concern audit report date

Table 5 presents the results from the analysis of the standardized abnormal stock returns around the event date. Results are reported for the standardized abnormal stock returns (SAR) in periods [-1], [0], [+1] and cumulative standardized abnormal stock returns (CSAR) for periods [-1, +1], [-1, 0] and [0, +1].

In Panel A the mean abnormal returns are negative on all days except SAR[0], but all abnormal returns are statistically insignificant. The results for cumulative abnormal returns are negative on average, but also statistically insignificant. Due to the extreme observations and outlier problems pointed out earlier, it may be appropriate to focus more on the results in Panel B. The results on the winsorized data in Panel B are similar to those in Panel A. Most of the periods (except CSAR [-1, 0]) exhibit negative abnormal returns, but they are all statistically insignificant.

This indicates that even after winsorizing the extreme SARs at two standard deviations from the mean, no statistically significant abnormal stock reaction can be observed around the time the auditor dates the going concern audit report. Moreover, no support for H_1 is found in this section.

The lack of statistically significant results in the analysis of abnormal stock returns around the audit report date may be due to several reasons. First, perhaps the most plausible explanation is that the going concern audit report information does not become public on the audit report date. There is no clear concept of how the audit report information would become public before the disclosure of the 10-K report. However, the use of this event date is motivated by the findings of Carter et al. (1999) and Knechel et al. (2007), that a market effect can be observed on the date of an actual event. These two studies mentioned above do not give any clear explanation for how the information of the events they have studied becomes public on the date of the event rather than the date of the announcement of the event, but the obvious, although unstated, explanation is that informed market participants are taking advantage of their information advantage.

Second, this result could also be attributable to the claim that going concern audit reports do not contain new or relevant information for investors. The same information may possibly be extracted earlier from other public sources of quantitative or qualitative information. Third, there is also the possibility that going concern audit reports cause a market reaction on the audit report date only for specific types of firms, e.g. firms with different agency or information environments, or alternatively different levels of financial distress or leverage. Based on the literature reviewed in Sections 2.4.–2.6. and 3.2. it is suggested that firm specific factors may influence activities of informed traders or the extent to which investors may anticipate the going concern audit report. In the next section the objective is to study whether (i) information asymmetry between management and the owners, (ii) information environment, (iii) agency costs of debt, or financial distress

communicated in the previous year's financial statement have an effect on the abnormal reaction to going concern audit reports around the audit report date.

Table 5. Standardized abnormal stock returns around the event date (Audit report date)[a]

PANEL A. Original data set		
Period	**Mean abnormal return**	**T-statistic**
SAR [-1]	-0.039	-0.445
SAR [0]	0.001	0.018
SAR [1]	-0.019	-0.300
CSAR [-1, 0]	-0.037	-0.328
CSAR [0,+1]	-0.018	-0.174
CSAR [-1,+1]	-0.057	-0.426
PANEL B. Winsorized data set		
Period	**Mean abnormal return**	**T-test**
SAR [-1]	-0.036	-0.809
SAR [0]	-0.024	-0.404
SAR [1]	-0.047	-0.877
CSAR [-1, 0]	0.004	0.052
CSAR [0,+1]	-0.056	-0.666
CSAR [-1,+1]	-0.027	-0.283

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively
[a] denotes the event date used
The variables are defined as follows:
SAR= Standardized abnormal return
CSAR= Cumulative standardized abnormal return

5.4.3 Information asymmetry, information environment and stock market reactions to going concern audit

Table 6 and Table 7 present the results of the regression analysis. The purpose of the analysis in this section of the dissertation is to test the hypotheses whether (i) information asymmetry between management and the owners, (ii) information environment, or (iii) agency costs of debt are related to abnormal stock returns to going concern audit reports.

In Table 6 the results are reported for the standardized abnormal stock returns (SAR) in periods [-1], [0], [+1] and in Table 7 the results for cumulative standardized abnormal stock returns (CSAR) periods [-1, +1], [-1, 0] and [0, +1] are presented. For each period the regressions are run first with the variables measuring the agency and information asymmetry of the firm MOWN, SIZE and DA as the independent variables and then a second regression with the lagged Z-score, which measures how much information about the financial distress has been communicated to the market, i.e. how surprising the going concern audit report can be assumed to be. Furthermore, here too, both tables are divided into Panel A and Panel B, where the regressions in Panel A are run with the original data set and Panel B with the winsorized data set.

The results in Panel A of Table 6 demonstrate that the leverage of a firm (DA) is positively and statistically significantly related to the abnormal returns in five out of six regressions. Furthermore, Panel A shows that on the day SAR [+1], in the regression without the Z-score, controlling for existing information on the financial distress of the firms, MOWN has a negative and statistically significant coefficient. In the other event periods MOWN shows both positive and negative relationships, but these are statistically insignificant. The SIZE variable is positive but insignificant in all periods. The Z-score is negative in the period SAR [0], but positive in SAR [-1] and SAR [+1], all statistically insignificant.

Consistent with the findings from the correlations, the main focus here, too, will be on Panel B. In Panel B of Table 6, after winsorizing the most extreme observations in the data at two standard deviations from the mean, the results remain for the most essential part the same as in Panel A. That is, DA is positive and statistically significant in three out of six periods. However, here it seems that the inclusion of the Z-score weakens the effect of the DA, and only in the period SAR [-1] is the DA significant (at the 10 percent level) when Z is included. This finding can be interpreted that debt increases monitoring from the outside (e.g. financial institutions) and enriches the information environment of the firm in particular for those firms with less financial distress, and therefore the going concern audit report is less a surprise. Furthermore, high leverage itself may also be a signal of financial distress. Alternatively, leverage increases management discipline in such a way as to restrict informed trading on the audit report information.

Table 6. Regressions of standardized abnormal stock returns and firm characteristics (Audit report date)[a]

PANEL A. Original data set

Dependent Variable: Standardized Abnormal return (Russell 3000)

Model: $SAR_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + e_i$,

Variable	SAR [0]	SAR [0]	SAR [+1]	SAR [+1]	SAR [-1]	SAR [-1]
Constant	-19.520[b]**	-23.600	-9.171	3.149	-19.520**	11.892
	(-2.013)[c]	(-0.994)	(-1.005)	(0.154)	(-2.014)	(0.470)
MOWN	0.000	-0.136	-0.000***	-0.365	0.000	-0.491
	(0.865)	(-0.361)	(-4.619)	(-1.153)	(0.865)	(-1.077)
SIZE	4.934	0.061	0.085	0.468	4.939	1.957
	(1.586)	(1.273)	(0.037)	(0.144)	(1.587)	(0.662)
DA	0.109***	0.116***	0.1164	0.147**	0.109***	0.085**
	(2.843)	(3.057)	(1.579)	(2.022)	(2.843)	(2.026)
Z		-0.313		0.013		0.070
		(-1.296)		(0.083)		(0.334)
# of observations	226	193	226	193	226	193
Adj. R^2	0.006	0.004	0.007	0.010	0.005	-0.004
F-statistic	1.443	1.203	1.593	1.516	1.443	0.788

Table 6. Continued

PANEL B. Winsorized data set

Dependent Variable: Standardized Abnormal return (Russell 3000)

Model: $SAR_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + e_i$,

Variable	SAR [0]	SAR [0]	SAR [+1]	SAR [+1]	SAR [-1]	SAR [-1]
Constant	-9.082[b]	-36.546	3.163	-8.623	1.3447	-3.578
	(-0.375)[c]	(-1.963)	(0.230)	(-0.524)	(0.106)	(-0.240)
MOWN	-0.637	0.009	-0.353	-0.173	-0.211	-0.002
	(-1.536)	(0.030)	(-1.543)	(-0.658)	(-0.945)	(-0.858)
SIZE	4.970	7.462**	0.175	1.8705	-1.415	0.010
	(1.102)	(2.134)	(0.069)	(0.648)	(-0.662)	(0.387)
DA	0.393***	0.082	0.120	0.1131	0.1234**	0.001*
	(2.661)	(1.104)	(1.319)	(1.140)	(2.091)	(1.872)
Z		-0.854***		-0.144		-0.056
		(-2.785)		(-0.384)		(-0.203)
# of observations	226	193	226	193	226	193
Adj. R^2	0.027	0.020	0.002	-0.009	0.004	-0.004
F-statistic	3.062**	1.987*	1.180	0.544	1.348	0.796

Table 6. Continued

Notes:

[a] denotes the event date used, [b] the coefficient, and [c] t- statistic

***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively

PANEL B. Observations winsorized at two standard deviations from the mean

All coefficients *100

The t-statistics are based on White's heteroskedasticity consistent standard errors (White 1980)

The variables are defined as follows:

MOWN = percentage of closely held shares

SIZE = natural logarithm of total assets

DA = percent of total debt to total assets

Z = Altman Z-score (1-year lagged)

However the result in period SAR [0], column two is also interesting. First, the expected sign and statistical significance under the 1 percent level for the variable Z is observed. The explanation for this is that the more serious the financial distress (the lower the value of Z) the lagged Z-score shows, the less the audit report comes as a surprise. Next, the SIZE variable measuring the information environment of the firm is positive, as expected, and statistically significant in the same column of Panel B. The information environment is considered to be richer for large firms. This means that more information is disclosed voluntarily by the firm, more external providers of information and more external users of information, and thus going concern audit reports can be more easily predicted using public information. Moreover, using the audit report information in trading on the audit report date, i.e. before the report is filed publicly, is likely to be possible only in smaller firms that are not monitored so closely by e.g. the SEC, firms that operate "under the radar".

Panel A of Table 7 presents the relationships between cumulative standardized abnormal returns and the selected independent variables. The regression results in Panel A confirm first of all the general findings from Table 5. DA is here positive and statistically significant in all periods, with and without the Z-score. Next, the SIZE variable has the expected sign but is statistically insignificant in all columns of Panel A of Table 7. Z-score is negative in all three cumulative periods, but also statistically insignificant.

Finally, a clear interpretation of the effect of MOWN on the abnormal returns is not obvious according to these results in Panel A. The coefficient is negative (significant in period CSAR [-1,+1]) when Z-score is included in the regressions, but otherwise positive and significant. However, the results later in Panel B show that it may be caused by some extreme observations.

Panel B of Table 7 shows regression results after winsorizing the most extreme observations at two standard deviations from the mean. As mentioned above, the results change particularly for the MOWN variable. Now all the coefficients are negative, but also insignificant. This indicates that the winsoring removed the inconsistencies with the signs that were present in Panel A.

The relationship between CSAR and DA is still positive and significant in two periods out of three. Only in the period CSAR [0,+1] is the result insignificant. This furthermore confirms that leverage has a positive effect on the abnormal reaction to the going concern audit report at the audit report date.

The results in columns two and four of Panel B of Table 7 are interesting. For both period CSAR [-1,+1] as well as CSAR [-1,0] the coefficients for SIZE, DA and Z are all statistically significant and they have the expected signs. SIZE has a positive effect on CSAR, demonstrating that a richer information environment reduces the negative information content of the audit report. DA also has a positive effect on CSAR, indicating that leverage either affects the information environment in such a way that the surprise of the going concern audit report is small-

er or, alternatively, that leverage disciplines the management so that the use of private information is more difficult. The Z-score is negative, which shows that the better the financial situation was the previous year, measured by the Z-score, the more negative the abnormal reaction was around the audit report date.

In summary, Table 6 and Table 7 present relatively strong evidence of a positive relationship between leverage (DA) and abnormal returns around the event date. In addition there is also some statistically significant evidence particularly in Panel B of Table 7 that the richness of the information environment (SIZE) and the surprise of the weak financial situation (Z) affect abnormal returns. Consequently, no evidence to support hypotheses H_3 and H_4 is found.

The adjusted R^2 scores in the models of this study are low, but consistent with those in earlier studies (e.g. Knechel et al 2007; Fleak et al. 1994; Chen et al. 2000). The F-statistic is statistically significant in those winsorized (Panel B) regressions with some support for hypotheses H_3 and H_4.

Table 7. Regressions of cumulative standardized abnormal stock returns and firm characteristics (Audit report date)[a]

PANEL A. Original data set

Dependent Variable: Cumulative Standardized Abnormal Return (Russell 3000)

Model: $CSAR_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + e_i$,

Variable	CSAR [-1, 1]	CSAR [-1, 1]	CSAR [-1, 0]	CSAR [-1, 0]	CSAR [0, +1]	CSAR [0, +1]
Constant	-26.2692[b]	-8.580	-17.75	-11.727	-28.691**	-20.469
	(-1.703)[c]	(-0.265)	(-1.248)	(-0.352)	(-2.186)	(-0.663)
MOWN	0.000***	-0.992*	0.000***	-0.627	0.000**	-0.501
	(2.999)	(-1.733)	(6.164)	(-1.100)	(-2.4321)	(-1.053)
SIZE	1.4385	8.500	1.3536	8.0318	5.025	6.5433
	(0.201)	(1.434)	(0.210)	(1.330)	(1.376)	(1.219)
DA	0.2426**	0.348***	0.1262**	0.2015***	0.225**	0.2627***
	(2.353)	(4.383)	(2.345)	(5.158)	(2.185)	(2.694)
Z		-0.230		-0.243		-0.300
		(-0.799)		(-0.727)		(-1.211)
# of observations	226	193	226	193	226	193
Adj. R^2	0.007	0.052	-0.005	0.016	0.021	0.030
F-statistic	1.553	3.658***	0.614	1.765	2.638*	2.487**

Table 7. Continued

PANEL B. Winsorized data set

Dependent Variable: Cumulative Standardized Abnormal Return (Russell 3000)

Model: $CSAR_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + e_i$,

Variable	CSAR [-1, 1]	CSAR [-1, 1]	CSAR [-1, 0]	CSAR [-1, 0]	CSAR [0, +1]	CSAR [0, +1]
Constant	-9.082[a]	-35.778	-17.946	-37.02	-9.437	-33.024
	(-0.375)[b]	(-1.181)	(-0.858)	(-1.461)	(-0.411)	(-1.141)
MOWN	-0.637	-0.61	-0.198	-0.31	-0.400	-0.309
	(-1.536)	(-1.249)	(-0.543)	(-0.728)	(-1.059)	(-0.713)
SIZE	4.970	11.334**	5.1453	10.661**	3.9741	8.1972
	(1.102)	(1.986)	(1.360)	(2.205)	(0.961)	(1.592)
DA	0.393***	0.3673**	0.002***	0.242***	0.209	0.1854
	(2.661)	(2.600)	(2.991)	(2.699)	(1.595)	(1.499)
Z		-1.044**		-0.901*		-0.928**
		(-1.986)		(-1.972)		(-2.112)
# of observations	226	193	226	193	226	193
Adj. R^2	0.028	0.041	0.012	0.033	0.004	0.013
F-statistic	3.062**	3.049**	1.941	2.643**	1.342	1.638

Table 7. Continued

Notes:

[a] denotes the event date used, [b] the coefficient, and [c] t- statistic

***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively

PANEL B. Observations winsorized at two standard deviations from the mean

All coefficients *100

The t-statistics are based on White's heteroskedasticity consistent standard errors (White 1980)

The variables are defined as follows:

MOWN = percentage of closely held shares

SIZE = natural logarithm of total assets

DA = percent of total debt to total assets

Z = Altman Z-score (1-year lagged)

5.4.4 Additional tests using the 10-K report announcement dates

The purpose of this section is to further examine the abnormal stock reactions to going concern audit reports. Because the event date used in the previous section can be perceived to be experimental, although similar event periods have previously been used in the literature, this section provides the equivalent analysis using the more conventional event period, the 10-K report disclosure date. In this sense, this section tests for the robustness of the findings of the previous section.

However, it is important to recognize that, given that the reaction around the audit report date could be a result of trading on private information, it does not rule out a reaction around the 10-K disclosure date. The normal market efficiency assumption posits that the stock prices immediately adjust to the new appropriate price level after the information announcement. But this does not apply if the reaction around the audit report date is a result of private information.

Descriptive statistics

Table 8 presents descriptive statistics for the dependent and independent variables used in the analysis. Panel A shows that the mean standardized abnormal returns are negative on two event days and in all three periods. Panel B with the winsorized observations reports similar findings; here, too, all others but SAR [0] are negative. The descriptive statistics for the independent variables are the same as in Table 3, and will not be discussed here.

Table 9 shows a pairwise correlation matrix of the variables used in the regression analysis. Here, too, CSAR [-1,+1] represents the standardized abnormal returns on different days and periods, i.e. the dependent variables. In Panel A and Panel B the dependent variable CSAR [-1,+1] is not significantly correlated with any of the independent variables. The correlations between the independent variables are as discussed in Table 4.

Standardized abnormal stock returns around the event date

Table 10 presents the results from the tests of standardized abnormal stock returns around the 10-K report disclosure date. The mean market model adjusted standardized abnormal returns in each period are tested for whether they are different from zero. In Panel A all other periods but SAR [0] are negative, however they are all statistically insignificant. However, in the winsorized results in Panel B negative and significant results (under 1 percent level) in three periods around the 10-K date, SAR [1], SAR [0,+1] and SAR [-1,+1], are reported. This result indicates that an abnormal stock price reaction occurs around the date that the firm discloses its annual 10-K announcement containing the going concern audit report.

Table 8. Descriptive statistics of variables (10-K date)[a]

PANEL A. Original data set

	SAR	*SAR*	*SAR*	*CSAR*	*CSAR*	*CSAR*					
	[0]	*[1]*	*[-1]*	*[-1,+1]*	*[-1, 0]*	*[0,+1]*	*MOWN*	*SIZE*	*DA*	*Z*	
Mean	0.039	-0.305	-0.153	-0.418	-0.114	-0.265	38.951	2.465	64.518	-11.638	
Median	0.000	-0.052	0.004	-0.117	0.000	-0.111	35.992	2.230	23.006	-3.631	
Maximum	6.222	7.421	6.942	7.967	7.902	11.049	97.103	10.506	3189.561	8.012	
Minimum	-4.617	-6.980	-13.356	-16.571	-14.171	-5.357	0.000	-10.054	0.000	-257.393	
Std. Dev.	1.303	1.515	1.551	2.188	1.866	1.736	25.183	2.628	233.029	28.011	
Skewness	1.013	-0.151	-3.545	-1.783	-2.048	0.860	0.431	-0.037	11.017	-5.375	
Kurtosis	8.819	8.618	31.231	15.896	19.718	10.367	2.303	5.021	141.898	39.390	
n	237	237	237	237	237	237	228	234	235	197	

Table 8. Continued

PANEL B. Winsorized data set

	SAR	*SAR*	*SAR*	*CSAR*	*CSAR*	*CSAR*				
	[0]	*[1]*	*[-1]*	*[-1, +1]*	*[-1, 0]*	*[0, +1]*	*MOWN*	*SIZE*	*DA*	*Z*
Mean	*0.015*	*-0.312*	*-0.092*	*-0.384*	*-0.074*	*-0.293*	*38.928*	*2.501*	*45.624*	*-10.134*
Median	*0.000*	*-0.053*	*0.004*	*-0.117*	*0.000*	*-0.111*	*35.992*	*2.230*	*23.006*	*-3.631*
Maximum	*3.167*	*2.605*	*1.772*	*3.253*	*3.482*	*2.853*	*92.117*	*7.950*	*337.244*	*0.348*
Minimum	*-2.590*	*-3.738*	*-3.189*	*-5.133*	*-4.188*	*-3.934*	*0.968*	*-1.813*	*0.000*	*-84.687*
Std. Dev.	*1.088*	*1.259*	*0.936*	*1.786*	*1.406*	*1.509*	*25.079*	*2.394*	*68.866*	*18.752*
Skewness	*0.349*	*-0.547*	*-1.146*	*-0.475*	*-0.387*	*-0.222*	*0.422*	*0.403*	*2.729*	*-2.961*
Kurtosis	*4.678*	*4.356*	*5.681*	*3.830*	*4.889*	*3.292*	*2.271*	*2.810*	*10.967*	*11.132*
n	*237*	*237*	*237*	*237*	*237*	*237*	*228*	*234*	*235*	*197*

Notes:

PANEL B. Observations winsorized at two standard deviations from the mean

[a] denotes the event date used

The variables are defined as follows:

SAR= Standardized abnormal return *SIZE = natural logarithm of total assets*

CSAR= Cumulative standardized abnormal return *DA = percent of total debt to total assets*

MOWN = percentage of closely held shares *Z = Altman Z-score (1-year lagged)*

Table 9. Correlation matrix

PANEL A. Original data set

	CSAR [-1, +1]	*MOWN*	*SIZE*	*DA*	*Z*
CSAR [-1, +1]	1				
MOWN	0.039	1			
SIZE	0.048	-0.197***	1		
DA	0.000	0.299***	-0.264***	1	
Z	0.012	-0.062	0.377***	-0.255***	1

PANEL B. Winsorized data set

	CSAR [-1, +1]	*MOWN*	*SIZE*	*DA*	*Z*
CSAR [-1, +1]	1				
MOWN	0.057	1			
SIZE	0.056	-0.184***	1		
DA	-0.024	0.286***	-0.197***	1	
Z	-0.002	-0.121*	0.459***	-0.330***	1

Notes:

PANEL B. Observations winsorized at two standard deviations from the mean

[a] denotes the event date used

The variables are defined as follows:

CSAR= Cumulative standardized abnormal return

MOWN = percentage of closely held shares

SIZE = natural logarithm of total assets

DA = percent of total debt to total assets

Z = Altman Z-score (1-year lagged)

As discussed earlier, however, the problem with the 10-K announcement date is that it is the annual report required by the U.S. Securities and Exchange Commission (SEC) and it contains a summary of a public firm's performance. Therefore it may (and most likely does) contain other price relevant items that affect the results. Regardless of this, the 10-K report date is the most commonly used event date in this field of studies. Table 5 (audit report date) reports largely similar results, the important difference being, however, that in Table 9 the results in three periods are statistically significant. The explanation for this is that around the audit report date the abnormal returns are presumably driven by trades of some parties with private information, and therefore the size of the reaction may remain statistically insignificant. All in all, bearing in mind the above-mentioned problems in using the 10-K report date, the findings in Panel B of Table 10 suggest that there is a negative abnormal reaction to the going concern audit report around the 10-K report filing date.

Regressions of the effect of information asymmetry and information environment on standardized abnormal returns

Tables 11 and 12 present the results from the regressions of the relationship between information asymmetry, information environment, agency costs of debt, and the standardized abnormal returns around the 10-K date. Table 10 contains the results for the three days around the event, and Table 11 the results for the three periods around the event. Summarizing both tables, MOWN has a positive and significant relationship with abnormal returns on SAR [+1], SAR [-1,0] and SAR [0,+1], i.e. information asymmetry is negatively related to abnormal returns. As hypothesized, a positive relationship may be due to the reduced information asymmetry of firms with high management ownership, which affects the degree to which the going concern audit report comes as a surprise and therefore the negative reaction is weaker.

Panels B of Tables 6 and 7 report that the coefficients (although insignificant) for MOWN are negative in most event periods around the audit report date, but here they are positive. This could indicate that around the audit report date the insiders of firms with more management ownership use their private information and this results in negative abnormal returns. Moreover, the evidence further suggests that the information environment and agency costs of debt may restrict these actions of the insiders. By contrast, the evidence from abnormal returns around the 10-K report filing date permits speculation that the surprise of the going concern audit report is smaller in firms with more management ownership because "management owners" have already traded on this information when they received the report after the audit report date, and therefore it is not a surprise for them.

In Panel B of Table 11 a relationship between SAR [0] and SIZE is also reported. This finding supports the hypothesis that a richer information environment reduces the negative surprise of the audit report. Contrary to the assumptions, the results do not indicate that leverage or the level of financial distress has a relationship with abnormal reactions around the 10-K disclosure date.

Table 10. Standardized abnormal stock returns around the event date (10-K date)[a]

PANEL A. Original data set

Period	Mean abnormal return	T-statistic
SAR [-1]	-0.039	-0.445
SAR [0]	0.001	0.018
SAR [1]	-0.019	-0.300
CSAR [-1, 0]	-0.037	-0.328
CSAR [0,+1]	-0.018	-0.174
CSAR [-1,+1]	-0.057	-0.426

PANEL B. Winsorized data set

Period	Mean abnormal return	T-test
SAR [-1]	-0.092	-1.511
SAR [0]	0.015	0.215
SAR [1]	-0.312***	-3.814
CSAR [-1, 0]	-0.074	-0.806
CSAR [0,+1]	-0.293***	-2.991
CSAR [-1,+1]	-0.384***	-3.309

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively
[a] denotes the event date used
The variables are defined as follows:
SAR= Standardized abnormal return
CSAR= Cumulative standardized abnormal return

Table 11. Regressions of standardized abnormal stock returns and firm characteristics (10-K date)[a]

PANEL A. Original data set
Dependent Variable: Standardized Abnormal return (Russell 3000)
Model: $SAR_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + e_i$,

Variable	SAR [0]	SAR [0]	SAR [+1]	SAR [+1]	SAR [-1]	SAR [-1]
Constant	-5.287	-12.41	-30.137**	-65.995**	3.312	10.100
	(-0.443)	(-0.525)	(-2.246)	(-2.196)	(0.246)	(0.400)
MOWN	0.000***	0.1346	0.000**	0.838*	-0.000	-0.543
	(4.500)	(0.331)	(2.590)	(1.890)	(-0.953)	(-1.236)
SIZE	3.7578	5.2233	-1.680	-0.608	-5.329	0.6857
	(1.427)	(1.381)	(-0.504)	(-0.123)	(-1.015)	(0.202)
DA	0.000	0.0197	-0.000	-0.047	-0.027	0.0246
	(0.073)	(0.450)	(-0.037)	(-0.917)	(-0.502)	(0.607)
Z		0.1266		-0.147		-0.033
		(0.396)		(-0.359)		(-0.125)
# of observations	226	193	226	193	226	193
Adj. R^2	-0.007	-0.011	-0.012	-0.004	-0.005	-0.010
F-statistic	0.460	0.482	0.090	0.795	0.599	0.517

Table 11. Continued

PANEL B. Winsorized data set

Dependent Variable: Standardized Abnormal return (Russell 3000)

Model: $SAR_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i,-1} + e_i$,

Variable	SAR [0]	SAR [0]	SAR [+1]	SAR [+1]	SAR [-1]	SAR [-1]
Constant	-18.336	-20.068	-0.523***	-61.112**	12.1489	-3.270
	(-1.060)	(-0.994)	(-2.639)	(-2.543)	(0.816)	(-0.187)
MOWN	0.3162	0.2059	0.646*	0.799**	-0.459	-0.317
	(1.064)	(0.588)	(1.925)	(2.044)	(-1.586)	(-0.954)
SIZE	4.5093	6.1507*	-1.027	-0.698	-1.929	1.7273
	(1.558)	(1.712)	(-0.301)	(-0.158)	(-0.708)	(0.534)
DA	-0.000	-0.017	-0.090	-0.098	0.0755	0.019
	(-0.674)	(-0.184)	(-0.880)	(-0.896)	(0.939)	(0.236)
Z		-0.102		-0.136		-0.283
		(-0.211)		(-0.224)		(-0.916)
# of observations	226	193	226	193	226	193
Adj. R^2	-0.001	-0.007	0.003	0.001	0.001	-0.011
F-statistic	0.939	0.660	1.260	1.036	1.113	0.457

Table 11. Continued

Notes:

[a] denotes the event date used, [b] the coefficient, and [c] t- statistic

***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively

PANEL B. Observations winsorized at two standard deviations from the mean

All coefficients *100

The t-statistics are based on White's heteroskedasticity consistent standard errors (White 1980)

The variables are defined as follows:

MOWN = percentage of closely held shares

SIZE = natural logarithm of total assets

DA = percent of total debt to total assets

Z = Altman Z-score (1-year lagged)

Table 12. Regressions of cumulative standardized abnormal stock returns and firm characteristics (10-K date)[a]

PANEL A. Original data set

Dependent Variable: Cumulative Standardized Abnormal Return (Russell 3000)

Model: $CSAR_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + e_i$,

Variable	CSAR [-1, 1]	CSAR [-1, 1]	CSAR [-1, 0]	CSAR [-1, 0]	CSAR [0, +1]	CSAR [0, +1]
Constant	-32.112	-68.275*	-1.975	-2.280	-35.424**	-78.406**
	(-1.620)	(-1.684)	(-0.112)	(-0.071)	(-2.469)	(-2.576)
MOWN	0.000***	0.429	0.000	-0.409	0.000***	0.972**
	(3.586)	(0.636)	(2.186)	(-0.735)	(5.814)	(2.011)
SIZE	-3.251	5.300	-1.571	5.909	2.0781	4.615
	(-0.448)	(0.814)	(-0.254)	(1.150)	(0.553)	(0.876)
DA	0.000	-0.002	-0.024	0.044	0.000	-0.027
	(-0.302)	(-0.027)	(-0.353)	(0.740)	(0.018)	(-0.414)
Z		-0.054		0.093		-0.021
		(-0.128)		(0.325)		(-0.065)
# of observations	226	193	226	193	226	193
Adj. R^2	-0.011	-0.016	-0.012	-0.010	-0.010	-0.000
F-statistic	0.158	0.223	0.059	0.528	0.187	0.975

Table 12. Continued

PANEL B. Winsorized data set

Dependent Variable: Cumulative Standardized Abnormal Return (Russell 3000)

Model: $CSAR_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + e_i$,

Variable	CSAR [-1, 1]	CSAR [-1, 1]	CSAR [-1, 0]	CSAR [-1, 0]	CSAR [0, +1]	CSAR [0, +1]
Constant	-57.364*	-79.398**	-67.07***	-18.417	-2.442	-74.152**
	(-1.946)	(-2.228)	(-2.787)	(-0.686)	(-0.103)	(-2.519)
MOWN	0.004	0.62	0.9643**	-0.172	-0.198	0.995**
	(0.961)	(1.037)	(2.408)	(-0.385)	(-0.516)	(2.143)
SIZE	1.9338	6.8374	3.3719	8.066	2.6673	4.595
	(0.356)	(1.025)	(0.800)	(1.599)	(0.617)	(0.884)
DA	0.000	-0.123	-0.177	-0.008	0.0241	-0.132
	(-0.563)	(-0.747)	(-1.303)	(-0.075)	(0.219)	(-0.922)
Z		-0.439		-0.315		-0.051
		-(0.589)		(-0.609)		(-0.078)
# of observations	226	193	226	193	226	193
Adj. R^2	-0.008	-0.010	0.012	-0.006	-0.009	0.003
F-statistic	0.336	0.491	1.935	0.722	0.274	1.157

Table 12. Continued

Notes:

[a] denotes the event date used, [b] the coefficient, and [c] t- statistic

***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively

PANEL B. Observations winsorized at two standard deviations from the mean

All coefficients *100

The t-statistics are based on White's heteroskedasticity consistent standard errors (White 1980)

The variables are defined as follows:

MOWN = percentage of closely held shares

SIZE = natural logarithm of total assets

DA = percent of total debt to total assets

Z = Altman Z-score (1-year lagged)

5.5 Concluding remarks

This chapter investigates the abnormal stock returns of going concern audit report announcements. First, this chapter examined whether there is an abnormal stock reaction around two alternative event dates: the audit report date and as a robustness test the 10-K report filing date. Second, this chapter analyzes further the effects of information asymmetry, information environment and agency costs of debt on the abnormal stock returns around the two event dates.

Data from listed U.S. firms in the Russell 3000 Index is used in the hypothesis testing, because the U.S market is the only single stock market with a significant number of going concern audit reports issued to public firms. The empirical findings of this chapter indicate that on average there is no statistically significant abnormal stock reaction to going concern audit reports around the audit report date, whereas there are significantly negative abnormal returns around the 10-K annual report filing date. This suggests that the going concern audit report announcement causes a stock price revaluation when it is filed with the annual report. The proposed relationship in hypothesis H_1 is thus supported in the tests for robustness, i.e. around the 10-K report date, but not in the primary tests.

Next the relationship between the proxies for information asymmetry, information environment and agency costs of debt, and abnormal stock returns are analyzed. The results suggest that around the audit report date, the information environment and the agency costs of debt have a positive and significant effect on the abnormal stock reaction. As a result, some support for hypothesis H_3 and stronger support for H_4 is found. In the robustness tests around the 10-K report date there is a negative relationship between information asymmetry and abnormal stock returns. This indicates, as expected, that the less the information asymmetry is, the less the going concern audit report is a negative surprise.

To sum up, these findings shed some light on the general question of this dissertation: ‘is the going concern audit report information relevant to the investors?’ and ‘do firm specific characteristics have an effect on the information content of the going concern audit report?’.

6 AUDITORS' INTERNAL CONTROL WEAKNESS DISCLOSURES AND STOCK RETURNS

The previous chapter examined the relevance of going concern audit reports to stock markets. This section is the second empirical part of this dissertation and examines the effects of auditors' internal control weakness disclosures on the stock returns. The purpose of this chapter is to empirically investigate first whether there is an abnormal stock market reaction around the audit report date and the 10-K report date. Second, evidence is presented on whether firm specific characteristics and existing information about the financial distress are related to abnormal stock returns. Next the hypotheses tested are developed, then the data and methodology are introduced, and finally the results of the empirical analyses are presented.

6.1 Hypotheses development

6.1.1 Abnormal returns around auditors' internal control weakness disclosures

In this chapter the same hypotheses are tested as in Chapter 5. First, internal control weakness disclosures are considered to have the potential to change the market responsiveness to earnings or affect the estimation of future cash flows. The purpose of the Sarbanes-Oxley Act Section 404 disclosure is to communicate to interested parties about the effectiveness of the internal control structure and procedures, and declare about material weaknesses that may increase financial statement errors or managements' ability to manage earnings. Such disclosures may give investors information about the earnings quality or management's abilities to fulfil their governance responsibilities, and thus result in reassessments of the risk levels and stock price level. However, if relevant information concerning the financial information quality is available before the auditors' internal control weakness disclosures, then such reports are unlikely to be informative.

As in the previous chapter, the analysis of going concern audit reports and stock markets, this section uses both the audit report date and the 10-K report date as event dates. Previously Beneish et al. (2008), for instance, use only the 10-K report disclosure date. However, following the findings of Carter et al. (1999) and Knechel et al. (2007), described in more detail in Chapter 3 and Chapter 5, the standard abnormal returns on both dates are estimated.

Based on the findings from the literature presented, the following hypothesis is tested around the audit report date (and as a test for robustness also around the 10-K filing date):

H_5: Auditors' internal control weakness disclosures are associated with negative abnormal stock returns

6.1.2 Do information asymmetry, information environment and agency costs of debt affect stock market reactions to audit reports?

The second part of the analysis of auditor's internal control weakness disclosures and stock markets is related to firm characteristics. Following the literature reviewed in Chapter 2 and Chapter 5, it is suggested that information asymmetry, information environment and agency costs of debt have an effect on the stock market reaction to auditors' internal control weakness disclosures.

Information asymmetry

Management shareholding is considered to proxy for the information asymmetry between management and owners. The larger the proportion of management shareholdings is the less information asymmetry and conflict of interests there is expected to be between managers and owners. Moreover, management ownership is also expected to have an effect on the importance or the degree to which disclosed financial information can come as a surprise to the owners. In firms with higher management ownership the conflict of interests are likely to be smaller and as a consequence the relevance of monitoring, e.g. auditing, is smaller. The existing audit and accounting literature suggests that agency factors, i.e. factors affecting the relationship between management and owners, have a strong influence on the informativeness of accounting disclosures (Warfield et al. 1995), the demand for audit quality and choice of the auditor (Francis et al. 1988; DeFond 1992; Blouin et al 2007), and the demand for external auditing (Chow 1982).

Following the literature discussed above and in the hypothesis development of hypothesis 2 in Chapter 5, the auditors' internal control weakness disclosures information are expected to incur a more negative market reaction around the audit report date for firms with high information asymmetry (robustness test around the 10-K filing date):

H_6: Information asymmetry between the management and the owners has a negative affect on the market reaction to auditors' internal control weakness disclosures.

Information environment

Auditors' internal control weakness disclosures may be more challenging for the markets to foresee using accounting and non-accounting information than going concern audit reports. Going concern reports may often be a result of long-term financial deterioration, which is possible to predict using other sources of infor-

mation. The auditor's internal control weakness disclosure, however, is of a more qualitative nature compared to the going concern report. The qualitativeness also affects its predictability, because the outside parties of a firm do not generally have access to such qualitative information that could imply weaknesses in internal controls. Doyle et al. (2007) and Ashbaugh-Skaife et al. (2007) document that investment in internal control systems and control risk factors are related to organizational complexity and organizational change. Information on these identified factors may help investors anticipate auditors' internal control weakness disclosures.

It is, however, expected that the accuracy of predictions on internal control weakness disclosures is better for firms with richer information environment, for example more analyst following or media coverage, simply because more information is available. Firm size is one relevant determinant of the richness of the information environment (Mitra et al. 2005). Smaller firms have lower visibility on the markets and a weaker information environment. Managers of such firms may have better opportunities to manage earnings or engage in other non-value maximizing activities, because of less attention from analysts and media. Additionally, the actions of management may potentially be monitored less closely by authorities as well. In firms where the information produced is limited, visibility and outside monitoring low, and externally produced information more rare, the relevance and degree of surprise of the auditors' internal control weakness disclosures is greater. A weak information environment may also clear the way for insiders and informed actors in engaging themselves in trades on inside information and hereby gain profits or cut losses. As a consequence, the following hypothesis is tested around the audit report date (robustness test around the 10-K filing date):

H_7: The information environment of the firm has a positive affect on the market reaction to auditors' internal control weakness disclosures.

Agency costs of debt

The third feature of the firm which in this dissertation is considered to affect the relevance of the auditors' disclosures is the agency costs of debt. Extensive literature supports the claim that the potential conflict of interests between shareholders and bondholders has an affect on investment and financing decisions (Jensen et al. 1976; Myers 1977; Smith et al. 1979), as well as the level of management discipline (Agrawal et al. 1982; Sengupta 1998; Ahmed et al. 2002, Francis et al. 2005; Beatty et al. 2008; Bharath et al. 2008; Ertugrul et al. 2008).

Two reasons are evinced here as to why the agency costs of debt have an affect on the relevance of the auditor's internal control weakness disclosure. First, due to the increased monitoring, management opportunism and actions performed out of self-interest are restricted. Second, debt financing is expected to increase the quantity and quality of information disclosed, and therefore the information risk

of the investors is lower. As a result, the information content of annual and quarterly filings are of less relevance to the investors (Callen et al. 2006).

Accordingly, it is expected that the consequences of higher agency costs of debt, reduce the negative surprise of the auditor's internal control weakness disclosure around the audit report date (robustness test around the 10-K filing date).

H_8: Agency costs of debt have a positive effect on the market reaction to auditors' internal control weakness disclosures.

6.2 Data

The sample is composed of the Russell 3000 Index firms. Russell 3000 comprises the 3000 largest and most liquid firms listed in the U.S. and aims to capture the return of the overall market. Following prior studies, the identical restrictions are used as in Chapter 5: (i) only first time internal control weakness disclosures are included in the sample, because successive internal control weakness disclosures may increase the possibilities to predict the audit outcome in advance and thus reduce the surprise (e.g. Jones 1996, Herbohn et al. 2007). First time reports are verified by manually examining the audit report from the previous year. Secondly, all financial institutions (SIC codes 6000-6900) are excluded from the sample due to some unique features in their regulation.

A firm search in the Audit Analytics database identified 384 non-financial firms that have received a first-time auditor's internal control report stating that the controls are not effective. The auditors' internal control weakness disclosures used in this study are dated between February 11, 2005 and December 12, 2007. The demand for SOX Section 404 disclosures became effective for accelerated filers (market value of equity $75 million or more) for fiscal years ending after November 15, 2004. The audit report of the previous year and the audit report and 10-K report dates could be verified for 354 firms. Of the 354 firms stock price data for estimation of the abnormal returns is located from Datastream for 342 firms.

Table 13 illustrates the distribution of the going concern audit reports used in the empirical analysis across the time period and across industries. This table clearly illustrates that the great majority of the internal control weakness disclosures are dated to the first year after Section 404 implementation. Additionally, Table 13 indicates that the majority (nearly 70 percent) of the going concern reports are concentrated on two industries, manufacturing and services. However, comparing the representations of the industries in the sample and in the population (Russell 3000), the table reveals that wholesale and retail trade (5000-5900) and services (7000-8900) are overrepresented in the sample, whereas the others, manufacturing in particular, are underrepresented.

The Thomson Financial Datastream database contains the information needed for estimating the dependent variable and the information on the independent va-

riables are from Thomson Financial Worldscope. The number of firms with independent variables data used in the regression analysis is presented in Table 14 (pp. 111–112).

Table 13. Number of firms by SIC codes and years.

SIC Code	Industry description	% of sample firms	% of firms in Russell 3000	2005	2006	2007
0-1999	Agriculture, Minig and Construction	5.26	6.92	17	1	
2000-3999	Manufacturing	29.82	45.49	87	13	2
4000-4999	Transportation, Communications, Electric, Gas, and Sanitary services	8.77	11.82	26	4	
5000-5999	Wholesale and Retail trade	16.67	12.82	53	4	
7000-8999	Services	39.47	22.92	114	20	1

The table presents the number of firms by standard industry classification (SIC) codes divided across year of first-time internal control deficiency audit report. The sample consists of 342 firms, Financial institutions (SIC codes between 6000 and 6900) are excluded from the sample.

6.3 Methodology

To study the information content of auditors' internal control weakness disclosures this section analyzes abnormal stock returns around the audit report date and as a robustness test around the 10-K report filing date.

According to the efficient market hypothesis, stock prices adjust rapidly to new and relevant information. This study uses standardized abnormal stock returns to measure the market reaction. Daily standardized abnormal stock returns around the audit report date are determined for each event day by dividing each stock's market model adjusted abnormal returns by the standard deviation of the estimation period's abnormal returns. Daily stock returns are calculated as differences in logarithmic price indices using closing price data.

Different event periods are used to study the market reactions to the auditors' internal control weakness disclosures. Because the results may be sensitive to the length of the event period, e.g. due to other confounding events announced, a

short event window analysis around the event is applied (see e.g. Holder-Webb et al. 2000; Chen et al. 2000; Knechel et al. 2007; Beneish et al. 2008; Hammersley et al. 2008). First, three one-day standardized abnormal return periods are calculated (SAR [0], SAR [-1] and SAR [1]) to measure the daily reaction and second, three cumulative abnormal periods (CSAR [-1,+1], CSAR [-1,0] and CSAR [0,+1]) are considered to assess the effect during two to three days. The short event period is used to restrict the influence of possible concurrent information releases. The standardized abnormal returns and the cumulative standardized abnormal returns are estimated as described in Equations (1), (2) and (3) of Section 5.3. (pp. 56–57).

The standard t-statistic is applied to test H_5, whether the mean standardized abnormal returns in the event window are statistically significantly different from the expected abnormal return, which is zero. The t-statistic is described in equation (4) of Section 5.3. (p. 57)

To empirically test hypotheses H_6, H_7 and H_8, the following regression model is estimated:

$$(7)\ SAR_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_i + \beta_4 ICE\_COFL_i + e_i$$

Where:

MOWN = percentage of closely held shares
SIZE = logarithm of total assets
DA = percent of total debt to total assets
Z = Altman's Z-score (1-year lagged) re-estimated by Grice (1997)
ICE_CONFL = conflict in the internal control effectiveness reports from the management and the auditor
e = error term

The regression model in Equation (7) is similar to Equation (5) in Section 5.3. (p. 57). The independent variables are as defined on pages 58. To control for an important factor relevant for this section a dummy variable controlling for management reporting on internal control effectiveness (ICE_CONFL) is included in the model. ICE_CONFL equals one if the firm's management has filed a report on the internal controls for the same fiscal year without disclosing any material weaknesses. Conflicting management and audit reports are expected to increase the negative surprise of the auditor's internal control weakness disclosure.

To control for the influence of outliers all tests are conducted also after winsorizing the variables at two standard deviations from the mean (see e.g. Bernard and Thomas 1990). The winsorized statistics are reported in Panel B of each table.

6.4 Results

This section reports the results from the empirical analysis. First, the descriptive statistics, correlations and monthly abnormal returns for a 12-month period are presented. Second, results for the abnormal returns to the auditors' internal control weakness reports around the audit report date (and around the 10-K date in Section 6.4.4.) are presented. Third, the empirical analysis of this section is concluded with the regression analysis on the relationship between abnormal returns to internal control weakness disclosures and the firm-specific variables of interest.

6.4.1 Descriptive statistics

Table 14 tabulates the descriptive statistics of the dependent and independent variables. Most interestingly, the average abnormal returns are positive for all periods except SAR [-1]. This is contrary to expectations, because negative abnormal returns are hypothesized.

The descriptive statistics of the independent variables indicate that the firms have a management ownership averaging about 23 percent, which is, for example, far less than that of the firms receiving a going concern audit report (38.951 percent). The average natural logarithm of total assets is 6.940, which approximates to $1,032 million in total assets. Average leverage is about 23.5 percent, compared to over 64 percent for the firms with initial going concern audit reports. The financial distress score indicates that the firms are on average troubled, but much less so than the going concern firms. As mentioned above, the sample contains 59 firms where management did not disclose any internal control weaknesses whereas a weakness was indeed disclosed in the auditors' internal control weakness reports.

Panel B of Table 14 presents the descriptive statistics after winsorizing the observations at two standard deviations from the mean. The statistics in Panel B are essentially the same as in Panel A. Extreme observations do not seem to be as big a problem as in the going concern audit report analysis.

The correlation matrix in Table 15 Panel A and Panel B tabulates the correlations between the dependent variable and the independent variables. The abnormal return is not significantly correlated with any of the independent variables. SIZE is correlated with three variables. Larger firms seem to have statistically significantly more leverage, less financial distress and higher probability of management disclosing conflicting findings on the internal control effectiveness.

Table 14. Descriptive statistics of variables (Audit report date)[a]

PANEL A. Original data set

	SAR	*SAR*	*SAR*	*CSAR*	*CSAR*	*CSAR*					ICE_
	[0]	*[1]*	*[-1]*	*[-1,+1]*	*[-1, 0]*	*[0,+1]*	*MOWN*	*SIZE*	*DA*	*Z*	CONFL
Mean	0.100	0.033	-0.008	0.126	0.092	0.134	23.058	6.940	23.511	-0.460	0.172
Median	0.087	0.024	-0.033	0.177	0.056	0.093	18.642	6.737	18.465	0.111	0.000
Maximum	4.256	5.426	4.311	7.400	7.903	6.373	91.913	13.625	135.462	6.902	1.000
Minimum	-2.354	-7.221	-3.197	-6.442	-3.663	-7.323	0.022	2.672	0.000	-48.643	0.000
Std. Dev.	0.892	1.162	0.980	1.671	1.300	1.431	19.820	1.687	24.060	3.471	0.373
Skewness	0.524	-0.197	0.464	0.165	0.722	-0.108	1.177	0.854	1.286	-9.740	1.789
Kurtosis	4.775	10.763	5.964	5.438	6.721	7.022	4.178	4.631	4.808	123.598	4.200
n	342	342	342	342	342	342	342	342	336	304	342

Table 14. Continued

PANEL B. Winsorized data set

	SAR [0]	*SAR [1]*	*SAR [-1]*	*CSAR [-1,+1]*	*CSAR [-1, 0]*	*CSAR [0,+1]*	*MOWN*	*SIZE*	*DA*	*Z*	ICE_ CONFL
Mean	0.085	0.049	-0.024	0.118	0.072	0.136	22.845	6.907	23.174	-0.189	0.172
Median	0.087	0.024	-0.033	0.177	0.056	0.093	18.642	6.737	18.465	0.111	0.000
Maximum	1.825	2.753	1.783	3.376	2.644	2.778	75.645	10.339	87.087	1.253	1.000
Minimum	-1.643	-1.858	-1.893	-3.130	-2.506	-2.349	0.329	4.241	0.000	-4.931	0.000
Std. Dev.	0.809	0.943	0.840	1.471	1.168	1.216	19.158	1.518	22.941	1.207	0.373
Skewness	0.084	0.569	-0.044	-0.009	0.089	0.121	1.018	0.420	1.005	-2.328	1.789
Kurtosis	2.693	3.933	2.950	2.885	2.768	2.714	3.514	2.506	3.375	8.907	4.200
n	342	342	342	342	342	342	342	342	336	304	342

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
[a] **denotes the event date used**
The variables are defined as follows:
SAR= Standardized abnormal return
CSAR= Cumulative standardized abnormal return
MOWN = percentage of closely held shares
SIZE = natural logarithm of total assets
DA = percent of total debt to total assets
Z = Altman Z-score (1-year lagged)
ICE_CONFL = conflict in the internal control effectiveness reports from the management and the auditor

Table 15. Correlation matrix

PANEL A. Original data set

	CSAR [-1, +1]	*MOWN*	*SIZE*	*DA*	*Z*	*ICE_ CONFL*
CSAR [-1, +1]	1					
MOWN	0.023	1				
SIZE	-0.021	-0.104	1			
DA	0.012	0.086	0.372***	1		
Z	0.034	-0.005	0.149**	-0.003	1	
ICE_CONFL	-0.064	0.090	0.201***	0.048	0.035	1

PANEL B. Winsorized data set

	CSAR [-1, +1]	*MOWN*	*SIZE*	*DA*	*Z*	*ICE_ CONFL*
CSAR [-1, +1]	1					
MOWN	0.020	1				
SIZE	-0.031	-0.113	1			
DA	-0.008	0.072	0.391***	1		
Z	0.002	-0.030	0.300***	-0.051	1	
ICE_CONFL	-0.107	0.077	0.194***	0.056	0.007	1

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
[a] denotes the event date used
The variables are defined as follows:
CSAR= Cumulative Standardized Abnormal Return [-1,+1]
MOWN = percentage of closely held shares
SIZE = natural logarithm of total assets
DA = percent of total debt to total assets
Z = Altman Z-score (1-year lagged)
ICE_CONFL = conflict in the internal control effectiveness reports from the management and the auditor

Monthly book-to-market and size adjusted returns for a 12-month period around the event date

The following descriptive figure presents the results from a monthly analysis of the stock returns around the event period. The objective is to give an overview of the performance of the stocks of the firms receiving an auditor's internal control weakness disclosure. This figure gives an indication whether the internal control weakness is relevant and whether it can be anticipated long before the audit report date or the 10-K date, or alternatively whether there is a strong abnormal reaction some time after the disclosure of the report.

Monthly abnormal returns are estimated using the Fama-French (1993) three factor model as described in Equation (6) of Section 5.4 (p. 63). The model takes into account the stock's exposure to market risk, to size risk and to value risk.

Figure 2 illustrates the three-factor model abnormal returns for six months before the auditor's internal control weakness report date and six months after. The auditor's internal control weakness disclosure is also filed with the 10-K report. The 10-K report is commonly disclosed either the same or the subsequent month as the audit report is dated.

The abnormal returns are positive during the entire 12-month period. Moreover, the positive abnormal returns seem to be unaffected by the internal control weakness disclosures. It is difficult to draw any general conclusions from Figure 2 about the market reactions to auditors' internal control weakness disclosures.

6.4.2 Abnormal returns around the auditors' internal control weakness disclosure dates

The first empirical test in this chapter deals with the abnormal stock returns around the auditor's internal control weakness report date. Table 16 presents the standardized abnormal returns. In Panel A and Panel B the abnormal returns of two periods, SAR [0] and CSAR [0,+1], are positive and statistically significant. This is contrary to expectations.

A proposed explanation for the positive reaction is that the auditor's internal control weakness disclosure has been anticipated by (informed) investors. Because the auditor is mandated by Auditing Standard No.2 to evaluate and report on management's internal control effectiveness disclosure, the case is always that management assessment predates the audit report. In the sample there are 59 firms where management has not observed or reported any deficiencies in internal controls.

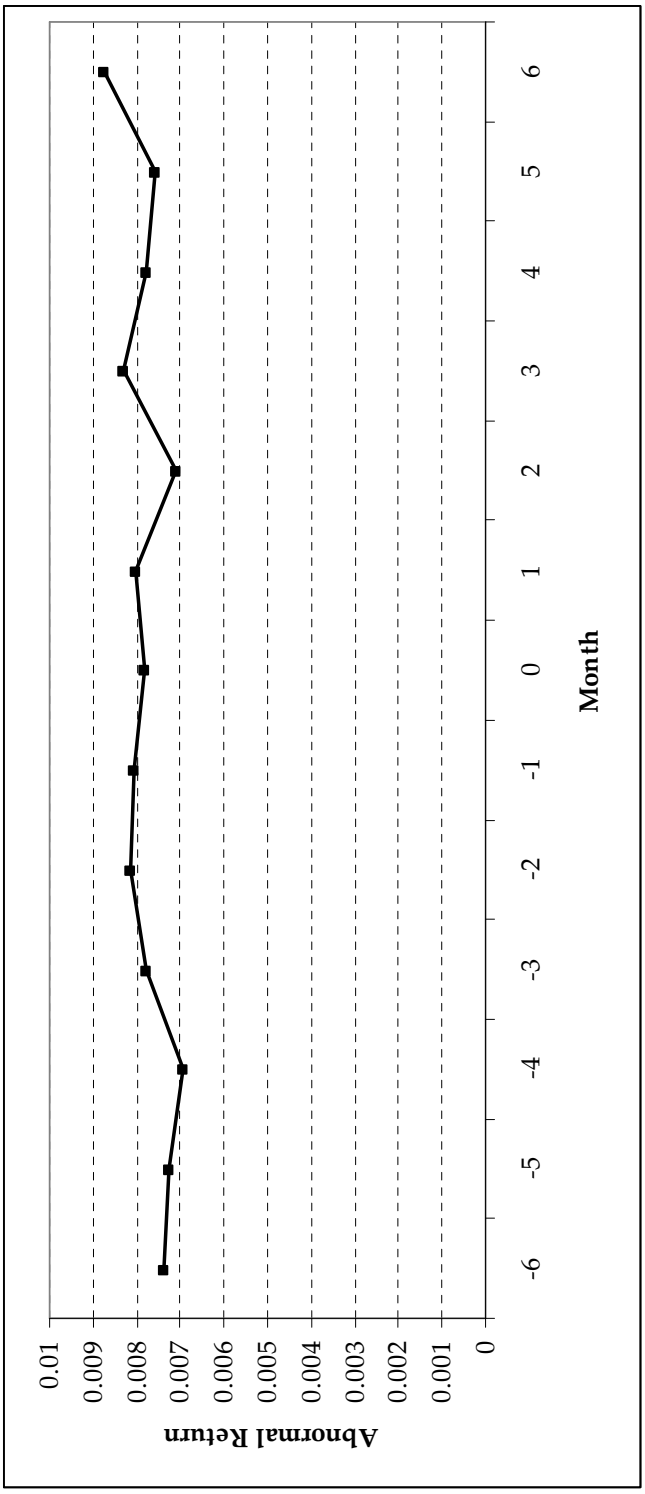

Figure 2. Monthly size and book-to-market adjusted abnormal stock returns for a 12-month period around the auditors' internal control weakness disclosures.

The empirical evidence in Table 16 suggests that, overall in the sample management reporting on internal control weaknesses mitigates the surprise of the auditor's report. The auditor's internal control weakness disclosure may in fact act as a relief and a positive signal if the management assessment had generated uncertainties where, for example, a going concern audit report was possible. Furthermore, assuming that the abnormal reaction around the audit report date is a result of informed trading, the explanation for the results could be that the informed traders were aware of the concerns on the markets that the auditor might ultimately report going concern uncertainties, for example. In this light, the informed traders could earn excess returns by using the audit report information on the date of the report.

As mentioned previously, there are 59 cases in the sample where management has indicated effective internal controls, whereas the auditor concluded by contrast that there were indeed weaknesses in the internal controls. It is likely that the negative surprise of the audit report is strong in these cases, because the audit report may come as a surprise to the management as well. The further analysis (not tabulated) of the firms in the sample with conflicting management and auditor disclosures on internal control weaknesses, reveals that the abnormal returns for these 59 firms are negative in all periods, but statistically insignificant. To conclude, no support is found for hypothesis H_5.

6.4.3 Information asymmetry, information environment, agency costs of debt, and stock market reactions to auditors' internal control weakness disclosures

To further analyze the abnormal stock returns around the audit report date, Table 17 and Table 18 present the results from the regression analysis. The purpose is to examine whether and how information asymmetry and information environment, agency costs of debt, and additionally financial distress and managements' internal weakness disclosures affect the abnormal returns around the audit report date.

The results in Tables 17 and 18 suggest that none of the variables of interest in this study explain the variation in the abnormal stock returns around the auditor's internal control weakness report date. The findings reveal only that Z is positive and statistically significant in Panel A of Table 17, indicating that a firm with greater financial distress (lower Z-score) has more negative abnormal returns on day SAR [+1]. However, this result is not confirmed in Panel B of the same table or in Table 18. Thus no conclusions can be drawn from this. The coefficients of ICE_CONFL have a negative, but insignificant, sign in all regressions, as expected. This would suggest that when the outcome of auditor's internal control report conflicts with management's equivalent report, the abnormal reaction is more negative.

To summarize, the conclusion of these two tables is that information asymmetry, information environment and agency costs of debt are not statistically significant-

ly related to abnormal returns. Therefore, no support is found for hypotheses H_6, H_7 or H_8.

Table 16. Standardized abnormal stock returns around the event date (Audit report date)[a]

PANEL A. Original data set

Period	Mean abnormal return	T-statistic
SAR [-1]	-0.008	-0.148
SAR [0]	0.100**	2.080
SAR [1]	0.033	0.533
CSAR [-1, 0]	0.089	1.315
CSAR [0,+1]	0.129*	1.729
CSAR [-1,+1]	0.126	1.394

PANEL B. Winsorized data set

Period	Mean abnormal return	T-test
SAR [-1]	-0.024	-0.524
SAR [0]	0.085*	1.937
SAR [1]	0.049	0.967
CSAR [-1, 0]	0.070	1.152
CSAR [0,+1]	0.131**	2.063
CSAR [-1,+1]	0.117	1.481

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively
[a] denotes the event date used
The variables are defined as follows:
SAR= Standardized abnormal return
CSAR= Cumulative standardized abnormal return

Table 17. Regressions of standardized abnormal stock returns and firm characteristics (Audit report date)[a]

PANEL A. Original data set

Dependent Variable: Standardized abnormal return (Russell 3000)

Model: $SAR_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + \beta_5 ICE\_CONFL_i + e_i$

Variable	SAR [0]	SAR [0]	SAR [+1]	SAR [+1]	SAR [-1]	SAR [-1]
Constant	17.3458[b]	23.327	3.5427	30.563	-24.073	-16.768
	(0.715)[c]	(0.903)	(0.129)	(1.044)	(-0.926)	(-0.616)
MOWN	0.203	0.230	0.1228	-0.078	0.156	0.031
	(0.768)	(0.805)	(0.425)	(-0.255)	(0.547)	(0.104)
SIZE	-1.407	-2.023	-2.025	-5.121	3.402	3.028
	(-0.415)	(-0.536)	(-0.507)	(-1.125)	(0.836)	(0.680)
DA	-0.119	-0.188	0.5318	0.497	-0.123	-0.181
	(-0.480)	(-0.688)	(1.601)	(1.326)	(-0.333)	(-0.444)
Z		-0.744		1.894**		0.792
		(-0.506)		(2.304)		(1.043)
ICE_CONFL		-10.708		-0.263		-10.844
		(-0.614)		(-0.012)		(-0.612)
# of observations	336	304	336	304	336	304
Adj. R^2	-0.005	0.011	0.002	-0.006	-0.006	-0.012
F-statistic	0.467	0.610	1.230	0.636	0.381	2.882

Table 17. Continued

PANEL B. Winsorized data set

Dependent Variable: Standardized abnormal return (Russell 3000)

Model: $SAR_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + \beta_5 ICE\_CONFL_i + e_i$,

Variable	.	SAR [0]	SAR [0]	SAR [+1]	SAR [+1]	SAR [-1]	SAR [-1]
Constant		16.9811[b]	14.927	16.615	28.044	-4.200	-12.431
		(0.738)[c]	(0.557)	(0.609)	(0.895)	(-0.186)	(-0.513)
MOWN		0.1323	0.271	0.054	0.013	-0.053	-0.010
		(0.554)	(1.027)	(0.202)	(0.045)	(-0.223)	(-0.037)
SIZE		-1.054	-1.001	-2.579	-3.859	0.661	1.993
		(-0.311)	(-0.246)	(-0.639)	(-0.810)	(0.193)	(0.531)
DA		-0.211	-0.219	0.260	0.268	-0.026	-0.077
		(-0.911)	(-0.815)	(0.952)	(0.869)	(-0.103)	(-0.279)
Z			0.292		2.663		-0.263
			(0.062)		(0.547)		(-0.060)
ICE_CONFL			-11.625		-11.120		-12.487
			(-0.779)		(-0.643)		(-0.907)
# of observations		336	304	336	304	336	304
Adj. R^2		-0.003	-0.005	-0.005	-0.011	-0.008	-0.013
F-statistic		0.611	0.696	0.422	0.359	0.035	0.201

Table 17. Continued

Notes:

[a] denotes the event date used, [b] the coefficient, and [c] t- statistic

***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively

PANEL B. Observations winsorized at two standard deviations from the mean

All coefficients *100

The t-statistics are based on White's heteroskedasticity consistent standard errors (White 1980)

The variables are defined as follows:

MOWN = percentage of closely held shares

SIZE = natural logarithm of total assets

DA = percent of total debt to total assets

Z = Altman Z-score (1-year lagged)

ICE_CONFL = conflict in the internal control effectiveness reports from the management and the auditor

Table 18. Regressions of cumulative standardized abnormal stock returns and firm characteristics (Audit report date)[a]

PANEL A. Original data set

Dependent Variable: Cumulative Standardized Abnormal Return (Russell 3000)

Model: $CSAR_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + \beta_5 ICE\_CONFL_i + e_i$

Variable	CSAR [-1, 1]	CSAR [-1, 1]	CSAR [-1, 0]	CSAR [-1, 0]	CSAR [0, +1]	CSAR [0, +1]
Constant	11.800[b]	37.122	-0.334	6.559	29.2354	53.890
	(0.259)[c]	(0.758)	(-0.009)	(0.157)	(0.900)	(1.501)
MOWN	0.325	0.183	0.291	0.261	0.2237	0.153
	(0.694)	(0.366)	(0.774)	(0.660)	(0.582)	(0.362)
SIZE	-1.428	-4.116	1.310	1.004	-4.141	-7.144
	(-0.224)	(-0.570)	(0.240)	(0.157)	(-0.903)	(-1.314)
DA	0.202	0.128	-0.258	-0.369	0.3307	0.309
	(0.495)	(0.272)	(-0.754)	(-0.921)	(0.874)	(0.670)
Z		1.942		0.048		1.150
		(1.014)		(0.026)		(0.704)
ICE_CONFL		-21.815		-21.552		-10.971
		(-0.608)		(-0.759)		(-0.399)
# of observations	336	304	336	304	336	304
Adj. R^2	-0.006	-0.011	-0.005	-0.009	-0.003	-0.009
F-statistic	0.287	0.321	0.396	0.481	0.591	0.474

Table 18. Continued

PANEL B. Winsorized data set

Dependent Variable: Cumulative Standardized Abnormal Return (Russell 3000)

Model: $CSAR_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + \beta_5 ICE\_CONFL_i + e_i$,

Variable	CSAR [-1, 1]	CSAR [-1, 1]	CSAR [-1, 0]	CSAR [-1, 0]	CSAR [0, +1]	CSAR [0, +1]
Constant	36.859[b]	36.722	10.115	-2.650	46.410	56.000
	(0.862)[c]	(0.762)	(0.302)	(-0.072)	(1.384)	(1.433)
MOWN	0.107	0.189	0.080	0.232	0.110	0.211
	(0.249)	(0.400)	(0.243)	(0.631)	(0.311)	(0.544)
SIZE	-3.827	-3.467	0.117	2.005	-5.306	-6.581
	(-0.628)	(-0.483)	(0.024)	(0.355)	(-1.076)	(-1.093)
DA	0.003	-0.020	-0.229	-0.294	0.057	0.073
	(0.011)	(-0.046)	(-0.755)	(-0.781)	(0.172)	(0.176)
Z		1.175		-1.068		2.297
		(0.149)		(-0.150)		(0.366)
ICE_CONFL		-40.161		-28.504		-23.994
		(-1.398)		(-1.372)		(-1.038)
# of observations	336	304	336	304	336	304
Adj. R^2	-0.007	-0.005	-0.006	-0.007	-0.004	-0.004
F-statistic	0.206	0.705	0.241	0.611	0.539	0.781

Table 18. Continued

Notes:

[a] denotes the event date used, [b] the coefficient, and [c] t- statistic

***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively

PANEL B. Observations winsorized at two standard deviations from the mean

All coefficients *100

The t-statistics are based on White's heteroskedasticity consistent standard errors (White 1980)

The variables are defined as follows:

MOWN = percentage of closely held shares

SIZE = natural logarithm of total assets

DA = percent of total debt to total assets

Z = Altman Z-score (1-year lagged)

ICE_CONFL = conflict in the internal control effectiveness reports from the management and the auditor

6.4.4 Additional tests using the 10-K report announcement dates

In Section 6.4.3., the empirical tests analyze the relationship between auditor's internal control weakness disclosures and abnormal stock returns around the *audit report date*. However, because using the audit report date as the event date can be considered experimental, the empirical analysis of this chapter is complemented in this section by running the identical tests with the 10-K report date as the event date. These tests provide evidence on the robustness of the results reported in the previous section.

Although several accounting and auditing studies have successfully applied the date of the actual event (i.e. audit report date), the 10-K filing date has to be considered to be the benchmark or the standard. Additionally, because the empirical findings in the previous section are inconclusive, it is essential also to study the abnormal returns around the 10-K date.

Next, the descriptive statistics are presented, then the analysis on the abnormal stock returns around the event date, and finally the results from the regressions on the relationship between firm characteristics and abnormal returns are tabulated and discussed.

Descriptive statistics

The descriptive statistics of the standardized abnormal returns around the 10-K report date in Table 19 are essentially identical to those of Table 14 (audit report date). The only more apparent difference is that here the abnormal returns for SAR [-1] are also positive. In Panel A and Panel B of Table 20, the correlation matrix illustrates that there is a significant negative relationship between the abnormal returns and the content of management's internal control report. In those cases where management's report was clean, the auditor's internal control weakness disclosure has a negative effect on the abnormal returns. This is as expected. Because, at this stage, when the internal control weakness disclosure is filed with the SEC, the investors simultaneously find management's report claiming that internal controls are efficient and the auditor's report claiming weaknesses in internal controls. This is expected to cast doubt on management's skills and trustworthiness, which in turn would be expected to affect the stock returns.

Table 20 also reports that there is a correlation between SIZE and DA, Z, MOWN and ICE_CONFL, indicating that larger firms are prone to have more leverage, more conflicting management and audit reports and less financial distress and management ownership.

Table 19. Descriptive statistics of variables (10-K date)[a]

PANEL A. Original data set

	SAR [0]	*SAR [1]*	*SAR [-1]*	*CSAR [-1,+1]*	*CSAR [-1, 0]*	*CSAR [0,+1]*	*MOWN*	*SIZE*	*DA*	*Z*	ICE_ CONFL
Mean	0.088	0.067	0.082	0.238	0.170	0.156	23.058	6.940	23.511	-0.460	0.167
Median	0.063	0.007	0.033	0.244	0.165	0.030	18.642	6.737	18.465	0.111	0.000
Maximum	4.256	5.045	3.831	5.721	4.680	5.422	91.913	13.625	135.462	6.902	1.000
Minimum	-3.144	-4.873	-3.057	-5.361	-3.663	-5.925	0.022	2.672	0.000	-48.643	0.000
Std. Dev.	0.993	1.120	0.848	1.666	1.254	1.473	19.820	1.687	24.060	3.471	0.373
Skewness	0.403	0.199	0.325	0.074	0.080	0.229	1.177	0.854	1.286	-9.740	1.789
Kurtosis	5.144	7.246	5.036	3.986	3.879	4.673	4.178	4.631	4.808	123.598	4.200
n	342	342	342	342	342	342	342	342	336	304	342

Table 19. Continued.

PANEL B. Winsorized data set

	SAR [0]	*SAR [1]*	*SAR [-1]*	*CSAR [-1,+1]*	*CSAR [-1, 0]*	*CSAR [0,+1]*	*MOWN*	*SIZE*	*DA*	*Z*	ICE_ CONFL
Mean	0.085	0.063	0.078	0.234	0.168	0.158	22.845	6.907	23.174	-0.189	0.167
Median	0.063	0.007	0.033	0.244	0.165	0.030	18.642	6.737	18.465	0.111	0.000
Maximum	2.467	2.546	1.819	3.731	2.865	3.364	75.645	10.339	87.087	1.253	1.000
Minimum	-1.985	-2.217	-1.547	-3.220	-2.565	-2.532	0.329	4.241	0.000	-4.931	0.000
Std. Dev.	0.912	0.966	0.775	1.547	1.190	1.334	19.158	1.518	22.941	1.207	0.373
Skewness	0.272	0.176	0.145	0.031	0.019	0.305	1.018	0.420	1.005	-2.328	1.789
Kurtosis	3.641	3.548	2.900	2.903	3.043	2.968	3.514	2.506	3.375	8.907	4.200
n	342	342	342	342	342	342	342	342	336	304	342

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
[a] denotes the event date used
The variables are defined as follows:
SAR= Standardized abnormal return
CSAR= Cumulative standardized abnormal return
MOWN = percentage of closely held shares
SIZE = natural logarithm of total assets
DA = percent of total debt to total assets
Z = Altman Z-score (1-year lagged)
ICE_CONFL = conflict in the internal control effectiveness reports from the management and the auditor

Table 20. Correlation matrix (10-K date)[a]

PANEL A. Original data set

	CSAR [-1, +1]	*MOWN*	*SIZE*	*DA*	*Z*	ICE_ CONFL
CSAR [-1, +1]	1					
MOWN	0.069	1				
SIZE	-0.075	-0.080	1			
DA	0.030	0.088	0.407***	1		
Z	-0.003	0.002	0.158**	-0.002	1	
ICE_CONFL	-0.208***	0.090	0.201***	0.048	0.035	1

PANEL B. Winsorized data set

	CSAR [-1, +1]	*MOWN*	*SIZE*	*DA*	*Z*	ICE_ CONFL
CSAR [-1, +1]	1					
MOWN	0.053	1				
SIZE	-0.105	-0.121*	1			
DA	0.003	0.047	0.428***	1		
Z	-0.020	-0.033	0.304***	-0.072	1	
ICE_CONFL	-0.215***	0.077	0.194***	0.056	0.007	1

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
[a] denotes the event date used
The variables are defined as follows:
CSAR= Cumulative standardized abnormal return
MOWN = percentage of closely held shares
DA = percent of total debt to total assets
SIZE = natural logarithm of total assets
Z = Altman Z-score (1-year lagged)
ICE_CONFL = conflict in the internal control effectiveness reports from the management and the auditor

Standardized abnormal returns around the 10-K report date

Table 21 presents the standardized abnormal returns around the 10-K report date. In both Panel A and Panel B all mean abnormal returns are positive and in most periods statistically significant. This seems paradoxical because audit reports on internal control weaknesses are expected to be "bad news" and therefore incur negative abnormal returns.

The statistically significant positive returns around the 10-K date suggest that the auditor's internal control weakness disclosure may contain a positive signal. One obvious situation when the auditor's internal control weakness disclosure could be good news is the case when the markets expected even worse news. Also, as pointed out in other studies, one has to be cautious when making conclusions about the abnormal returns around the 10-K filing date, because the 10-K report also includes other annual report items as well which could affect the stock returns.

In a supplementary analysis not tabulated, the results indicate that the abnormal returns for the 59 firms in the sample with a "clean" management report are negative and statistically significant under the 5 percent level in periods SAR [0], SAR [-1,+1] and SAR [0,+1]. Consequently, the conclusion is that the abnormal returns to the auditor's Section 404 report are (i) negative when it discloses uncertainties that the management did not previously disclose, and (ii) positive if the auditor's report confirms the information that management previously disclosed. All in all, there is no convincing evidence that the stock returns are negatively associated with the auditor's internal control weakness disclosures in the entire sample. However, in the small subsample consisting of those firms with conflicting reports from the management and the auditor, the abnormal reaction is negative.

Information asymmetry, information environment and stock market reactions internal control deficiency reports

Finally, this last section of the chapter investigates whether the characteristics of the firm affect the abnormal returns around the filing of a 10-K report containing an auditor's internal control weakness disclosure. In particular, the characteristics of interest here are related to information asymmetry, information environment and the agency costs of debt.

In H_6 the hypothesis states that information asymmetry between management and owners should be negatively related to the abnormal returns around the audit report disclosure. This is because due to reduced conflicts of interest and improved information flow between management and owners, the audit report should contain fewer surprises. Similarly, H_7 states that for firms with a richer information environment, the abnormal returns are less negative because the information disclosed could be gathered from other sources. Additionally, the regression analysis tests whether agency costs of debt measuring management discipline has an affect

on the abnormal returns around the Section 404 audit report. Previously disclosed financial distress and management's assessment of the effectiveness of internal controls are used as control variables.

Table 21. Standardized abnormal stock returns around the event date (10-K date)[a]

PANEL A. Original data set

Period	Mean abnormal return	T-statistic
SAR [-1]	0.082*	1.791
SAR [0]	0.088	1.645
SAR [1]	0.067	1.109
CSAR [-1, 0]	0.165**	2.513
CSAR [0,+1]	0.150**	1.952
CSAR [-1,+1]	0.237***	2.638

PANEL B. Winsorized data set

Period	Mean abnormal return	T-test
SAR [-1]	0.078*	1.861
SAR [0]	0.085*	1.716
SAR [1]	0.063	1.213
CSAR [-1, 0]	0.163***	2.614
CSAR [0,+1]	0.151**	2.171
CSAR [-1,+1]	0.234***	2.803

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively
[a] denotes the event date used
The variables are defined as follows:
SAR= Standardized abnormal return
CSAR= Cumulative standardized abnormal return

Table 22 and Table 23 present the results of the regression analysis. Panel A again contains the regressions using the original data set and Panel B after winsorizing the observations at two standard deviations from the mean. Two separate regressions are tabulated for each event period. The first column represents the regression without the variables on previous disclosures (Z and 302), and the second column includes the two mentioned variables.

In Table 22 Panel A and Panel B the results indicate that there is no support for hypothesis H_6 around the 10-K report date. The regression coefficients have positive signs indicating that the negative surprise of the auditors Section 404 report is smaller in firms with more management ownership (less information asymmetry), but they are insignificant in all periods.

The relationship between information environment and abnormal returns in Panel B is negative and statistically significant in the period SAR [0]. This suggests that the negative surprise is greater for firms with richer information environment. In the development of hypothesis H_7 the general assumption was that the abnormal reaction should be less negative for firms with richer information environment, because there is more information available on which to base accurate predictions and foresee emerging problems. This result implies, however, that there may not be any information available even in the richest information environments that reveal emerging problems of internal controls. The properties of internal control weaknesses may be such that the available information does not help in predicting them. Therefore, because larger and information richer firms are considered to be more stable, diligent, predictable and to have a higher quality information, the auditor's internal control weakness disclosure is a greater upset to investors of these firms than to those firms with weaker information environment.

The leverage and previously disclosed financial distress do not appear to have a statistically significant effect on the abnormal returns. Finally, Table 22 clearly confirms the findings discussed in the previous section, that the existence of a conflicting management's internal control report has a strong negative relationship with the abnormal returns. The relationship is statistically significant under the 1 percent level on the event day SAR [0].

The results in Table 23 confirm the effect of management's internal control report on the abnormal returns. The coefficient is negative and statistically significant in all periods. Furthermore, the table also provides some support for the relationship between abnormal returns and information environment. Finally, in Panel B CSAR [-1,0] there is some evidence that firms with more financial distress, i.e. lower Z-score, have more negative abnormal returns. This is suggested to be due to the uncertainties that the financially weaker firms may suffer from more fundamental difficulties in addition to the internal control weaknesses.

Table 22. Regressions of standardized abnormal stock returns and firm characteristics (10-K date)[a]

PANEL A. Original data set

Dependent Variable: Standardized abnormal return (Russell 3000)

Model: $SAR_i = \alpha + \beta_{11}MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + \beta_5 ICE\_CONFL_i + e_i$,

Variable	Pred.	SAR [0]		SAR [+1]		SAR [+1]		SAR [-1]		SAR [-1]
Constant		41.928[b]		46.436*		2.833		6.403		5.0145		19.595
		(1.619)[c]		(1.688)		(0.107)		(0.234)		(0.222)		(0.847)
MOWN		0.134		0.261		0.427		0.449		-0.023		-0.220
		(0.478)		(0.910)		(1.283)		(1.348)		(-0.098)		(-1.029)
SIZE		-5.897*		-5.369		-2.457		-2.107		1.192		-0.714
		(-1.714)		(-1.376)		(-0.643)		(-0.511)		(0.363)		(-0.202)
DA		0.185		0.145		0.487		0.327		-0.181		-0.130
		(0.746)		(0.588)		(1.647)		(1.023)		(-0.741)		(-0.513)
Z				-0.395				-0.885				1.583
				(-0.252)				(-0.378)				(1.559)
ICE_CONFL				-68.729***				-19.262				2.005
				(-3.936)				(-1.240)				(0.124)
# of observations		336		304		336		304		336		304
Adj. R^2		0.001		0.059		0.008		-0.002		-0.006		-0.007
F-statistic		1.069		4.750***		1.887		0.879		0.256		0.564

Table 22. Continued.

PANEL B. Winsorized data set

Dependent Variable: Standardized abnormal return (R3000)

Model: $SAR_i = \alpha + \beta_1 MOWN + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + \beta_5 ICE\_CONFL_i + e_i$,

Variable	SAR [0]	SAR [0]	SAR [+1]	SAR [+1]	SAR [-1]	SAR [-1]
Constant	59.103[b]**	61.629**	15.833	-6.699	19.283	33.713
	(2.277)[c]	(2.024)	(0.606)	(-0.232)	(0.894)	(1.385)
MOWN	0.021	0.255	0.250	0.379	-0.196	-0.225
	(0.079)	(0.913)	(0.813)	(1.245)	(-0.969)	(-1.058)
SIZE	-7.801**	-7.896*	-3.616	0.198	-0.450	-2.999
	(-2.094)	(-1.739)	(-0.933)	(0.046)	(-0.142)	(-0.830)
DA	0.097	0.215	0.435	0.235	-0.167	0.000
	(0.387)	(0.812)	(1.590)	(0.819)	(-0.779)	(0.001)
Z		3.323		-6.894		8.157**
		(0.697)		(-1.388)		(2.266)
ICE_CONFL		-63.356***		-20.300		-1.834
		(-4.251)		(-1.397)		(-0.128)
# of observations	336	304	336	304	336	304
Adj. R^2	0.006	0.066	0.004	0.004	-0.004	0.002
F-statistic	1.654	5.274***	1.419	1.263	0.589	1.141

Table 22. Continued.

Notes:

[a] denotes the event date used, [b] the coefficient, and [c] t- statistic

***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively

PANEL B. Observations winsorized at two standard deviations from the mean

All coefficients *100

The t-statistics are based on White's heteroskedasticity consistent standard errors (White 1980)

The variables are defined as follows:

MOWN = percentage of closely held shares

SIZE = natural logarithm of total assets

DA = percent of total debt to total assets

Z = Altman Z-score (1-year lagged)

ICE_CONFL = conflict in the internal control effectiveness reports from the management and the auditor

Table 23. Regressions of cumulative standardized abnormal stock returns and firm characteristics (10-K date)[a]

PANEL A. Original data set

Dependent Variable: Cumulative Standardized Abnormal Return (R3000)

Model: $CSAR_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + \beta_5 ICE\_CONFL_i + e_i$,

Variable	CSAR [-1, 1]	CSAR [-1, 1]	CSAR [-1, 0]	CSAR [-1, 0]	CSAR [0, +1]	CSAR [0, +1]
Constant	65.603[b]	72.433*	52.4764	66.031*	52.936	52.838
	(1.545)[c]	(1.672)	(1.505)	(1.746)	(1.535)	(1.414)
MOWN	0.3693	0.491	0.0311	0.042	0.447	0.711
	(0.777)	(0.996)	(0.090)	(0.123)	(1.029)	(1.542)
SIZE	-8.607	-8.190	-5.181	-6.082	-8.932*	-7.476
	(-1.526)	(-1.361)	(-1.065)	(-1.079)	(-1.937)	(-1.433)
DA	0.392	0.343	-0.038	0.016	0.573*	0.472
	(1.088)	(0.862)	(-0.109)	(0.040)	(1.827)	(1.358)
Z		0.303		1.189		-1.280
		(0.153)		(0.512)		(-0.814)
ICE_CONFL		-85.986***		-66.724***		-87.991***
		(-3.029)		(-2.883)		(-3.790)
# of observations	336	304	336	304	336	304
Adj. R^2	0.001	0.028	-0.003	0.031	0.010	0.048
F-statistic	1.137	2.716**	0.630	2.933**	2.127*	4.033***

Table 23. Continued

PANEL B. Winsorized data set

Dependent Variable: Cumulative Standardized Abnormal Return (R3000)

Model: $CSAR_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + \beta_5 ICE\_CONFL_i + e_i$,

Variable	CSAR [-1, 1]	CSAR [-1, 1]	CSAR [-1, 0]	CSAR [-1, 0]	CSAR [0, +1]	CSAR [0, +1]
Constant	88.270[b]**	81.049	71.979**	90.760**	79.153**	57.946
	(1.992)[c]	(1.587)	(2.132)	(2.327)	(2.171)	(1.357)
MOWN	0.216	0.513	-0.081	0.086	0.227	0.614
	(0.476)	(1.056)	(-0.259)	(0.271)	(0.553)	(1.386)
SIZE	-11.181*	-9.856	-7.493	-10.423*	-11.702**	-7.889
	(-1.788)	(-1.317)	(-1.510)	(-1.744)	(-2.276)	(-1.270)
DA	0.305	0.415	-0.097	0.207	0.484	0.428
	(0.828)	(0.942)	(-0.309)	(0.571)	(1.547)	(1.147)
Z		2.813		10.960*		-5.215
		(0.354)		(1.724)		(-0.781)
ICE_CONFL		-82.813***		-60.728***		-81.634***
		(-3.033)		(-2.861)		(-3.875)
# of observations	336	304	336	304	336	304
Adj. R^2	0.003	0.033	0.002	0.041	0.011	0.054
F-statistic	1.330	3.023**	1.277	3.567***	2.234*	4.435***

Table 23. Continued

Notes:

[a] denotes the event date used, [b] the coefficient, and [c] t- statistic

***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively

PANEL B. Observations winsorized at two standard deviations from the mean

All coefficients *100

The t-statistics are based on White's heteroskedasticity consistent standard errors (White 1980)

The variables are defined as follows:

MOWN = percentage of closely held shares

SIZE = natural logarithm of total assets

DA = percent of total debt to total assets

Z = Altman Z-score (1-year lagged)

ICE_CONFL = conflict in the internal control effectiveness reports from the management and the auditor

6.5 Concluding remarks

This chapter investigates the effect of auditor's internal control weakness disclosures on abnormal stock returns. The purpose of the analysis is to study whether this type of audit report is relevant to investors. First, this dissertation focuses on the abnormal stock reaction to auditor's internal control weakness disclosures around the audit report date. Second, to further analyze the effects of firm specific characteristics, regression analysis is used to seek evidence of a relationship between the abnormal stock returns around the auditor's disclosure and proxies for information asymmetry, information environment and agency costs of debt. Finally, tests for robustness are provided applying the 10-K report filing date as the event date.

Overall, the results in Chapter 6 indicate that the auditor's internal control weakness disclosures do not have the expected negative effect on stock returns. Around both alternative event dates the abnormal returns for the entire sample are positive. This could be an indication that the audit report information is on average irrelevant to investors. The further investigation using a regression analysis shows, however, that around the 10-K report date the information environment has, contrary to expectations, a negative relationship with abnormal returns. This suggests that the information environment is unable to predict the negative outcome of the audit report and therefore the abnormal returns are more negative for those firms with richer information environment. Moreover, this chapter clearly shows that around the 10-K report date conflicting management and auditor assessments of the effectiveness of internal controls are associated with a significant negative affect on the abnormal returns. This suggests that the stock price reacts negatively if the management is incapable of detecting the internal control weaknesses. All in all, none of the hypothesis developed were confirmed around the audit report date.

7 GOING CONCERN AUDIT REPORTS AND CHANGES IN VOLATILITY AND SYSTEMATIC RISK

This section analyzes further the properties of the stock market reactions to going concern audit reports. The purpose of this section is to empirically investigate the changes in volatility and systematic risk of the stock after the going concern audit report announcement. In detail, the first part of this chapter studies the mean change in volatility and systematic risk after the audit report, and the second part the relationship between risk changes and firm specific characteristics are studied. Next, the hypotheses to be empirically tested are developed, then the data and methodology are introduced, and finally the results from the empirical analysis are presented.

7.1 Hypothesis development

Chapter 5 focused on examining the short window abnormal stock price reaction to going concern audit reports. To extend the analysis of the relevance of going concern audit reports to stock markets, this section analyzes the effect of the going concern audit report has on the volatility of the stock returns and systematic risk of the stock. Several studies have focused on the market effect of accounting related announcements' by examining e.g. the levels of systematic risk subsequent to an announcement.

Healy and Palepu (1990) for example, find that equity offers are followed by a significant increase in systematic risk. They interpret the result that equity offers information affects the risk levels rather than the future cash flows of the firm. Price reactions, as measured in the previous section of this dissertation, can be a function of adjustments in expected magnitude of future cash flows or the expected risk of future cash flows (Fargher et al. 1998). If initial going concern audit reports correctly identify and communicate underlying uncertainties in a firm, then it could be expected that there will be a change in volatility and systematic risk of the stock return.

7.1.1 Uncertainty and risk changes around going concern audit report announcements

A going concern audit report has the potential to add uncertainty to the stock markets, as earlier mentioned. The increased uncertainty on the stock market is due to implications of the reasons leading to a going concern audit report. Reasons for a going concern audit report such as severe financial distress, litigation or increased probability of failure that the firm faces, may complicate the estimation of future cash flows of the firm. This uncertainty concerning the future cash flows

will increase the risk of the firm, in other words it increases the chance that the future cash flows will be different from what is currently expected.

Kim et al. (1991) propose that both price and volume changes of a stock at the time of a public announcement are positively associated with the precision of the information and negatively with the precision of the preannouncement public and private information. Most earlier studies, as well as the earlier section of this study, use stock price reactions to measure whether audit report announcements convey information to the stock market. However, as Fargher et al. (1998) point out, stock prices reflect both expected future cash flows and expected risk of future cash flows. By recognizing that a going concern audit report may affect the risk of the firm, it is important also to measure whether a change in risk can be observed. In this study, standard deviation and beta are used to measure the change in risk after a going concern audit report.

Standard deviation is a commonly used statistical measure of volatility. It measures how far the observed values are dispersed around the mean. Standard deviation can thus also be used as the volatility of the stock returns. Standard deviation of the stock returns summarizes the uncertainty in the market over a certain period or the spread of possible outcomes and therefore is a measure of risk. If a going concern audit report increases the uncertainty and spread of possible outcomes related to the firm's future cash flows, the standard deviation of the returns should grow as a result of the report.

Beta measures how sensitive the stock of a firm is to market movement. It is an estimate of the stock's systematic risk. Beta is defined as the covariance between stock return of a firm and the market return, divided by the variance of the market return. In the presence of a firm-specific event, such as a going concern audit report, it is assumed that the firm's stock return is affected, while the variance of the market return remains unaffected. To the extent that the going concern audit report and the underlying problems causing the report increase the volatility (standard deviation) of the firm's stock returns relative to the stock market returns, the systematic risk (beta) of the firm's stock will increase (Fargher et al. 1998).

Fargher et al. (1998) study the systematic risk changes around qualified audit opinion announcements and audit qualification withdrawal announcements. However, they find no evidence of an increase in systematic risk around qualification announcements. The authors conject that this was due to other forms of disclosures in the period studied. Next they studied the risk changes around audit qualification withdrawal announcements. In a withdrawal announcement the auditor revises the audit opinion from a qualified opinion to an unqualified opinion, therefore it should be good news. It is anticipated by Fargher et al. (1998) that the withdrawal announcement date would have less noise than the event date used in the qualification announcement analysis. They hypothesize that subsequent to a qualification withdrawal, the systematic risk changes in the opposite direction

than after the initial audit qualification. They found the reduction in systematic risk to be significant after the withdrawal.

Relative to the study by Fargher et al. (1998), this study takes advantage of the findings by Carter et al. (1999) and Knechel et al (2007) that the actual date of the event (here the going concern audit report date) would be an earlier date to study the reaction on the stock markets to the going concern opinion. As thoroughly discussed in previous chapters, the literature has struggled to define the correct event date when audit reports become publicly available. However, the hypotheses of this study are also tested in robustness tests using the 10-K report filing date, which is the standard in this field of audit research.

To summarize, an increase in volatility and systematic risk is expected to be found after the going concern audit report announcement

H_9: Going concern audit reports are associated with an increase in volatility and the systematic risk.

7.1.2 Information asymmetry, information environment, agency costs of debt, and risk changes around going concern audit report announcements

Information asymmetry

Based on the literature presented in Chapter 2, Chapter 3 and the hypothesis development in Chapter 5 it is expected in this study that the level of information asymmetry between management and owners will affect the impact of the going concern audit reports to the stock markets. This expectation is supported by the literature on agency effects on the demand for auditing and audit fees. More specifically, in firms with low information asymmetry the conflict of interests is expected to be lower. Hence, in firms with lower information asymmetry, the going concern audit report should cause fewer re-estimations of the future of the firm and the risk level. Also, when the information asymmetry is lower, the information contained in the going concern audit report could be less of a surprise, because the same information is more likely to be known already. Finally, in an agency relationship with lower conflicts of interest, the going concern audit report is likewise expected to be less relevant.

In terms of uncertainty and risk changes, the expectations above would imply that the information contained in the going concern audit report, causes a smaller change in volatility and systematic risk in firms with lower information asymmetry (higher management ownership). This is because owners are more aware of the underlying uncertainties due to lower information asymmetry and their interests are more aligned with those of management.

H_{10}: The information asymmetry between management and owners has a positive affect on the change in volatility and systematic risk after the going concern audit reports.

Information environment

Similar assumptions can be made for the effect of the information environment. Information environment refers to the richness of accounting and non-accounting information available from different sources. There are different sources of information that directly affect the richness of the information environment, for example the firm's financial and non-financial disclosures, news coverage of the media and analyst forecasts.

The key assumption is that owners of firms with richer information environments are less likely to revise their expectations of the firm's future earnings or risk. This is due to two reasons: (i) investors have more information available to make more accurate predictions and thus the uncertainty remains lower even after disclosures that were not expected, (ii) firms specific information disclosures can be anticipated using available information and therefore the surprise of the disclosure is preempted and the stock market effect around the disclosure is reduced.

As a consequence, the change in volatility and systematic risk subsequent to a going concern audit report is expected to be lower in firms with a rich information environment.

H_{11}: The information environment of the firm has a negative affect on the change in volatility and systematic risk after the going concern audit reports.

Agency costs of debt

Earlier studies indicate clearly that the level of debt has an affect on management's abilities to act in their own interests. This is largely because of conflict of interests between shareholders and bondholders. In a similar manner to the shareholders, bondholders, too, protect themselves against the risk of the firm failing to pay the debt. The literature suggests that bondholders may make demands that result in increased monitoring of management (Jensen et al. 1976), signing restricting covenants that change the terms of the debt contract in defined circumstances (Smith et al. 1979; Billett et al. 2007), insist on shorter maturity time if there are uncertainties about the future of the firm (Myers 1977), charge higher interest rate to account for the higher risk (Bergman et al. 1991) or demand more conservative reporting to reduce the information risk (Ahmed et al. 2002; Beatty et al. 2008).

These actions and demands insisted by bondholders cause the firm agency costs of debt. Substantial empirical evidence exists suggesting that agency costs of debt can be reduced by increasing management discipline and monitoring, and moreover increasing the quality of financial information (Agrawal et al. 1982; Sengupta 1998; Francis et al. 2005; Bharath et al. 2008; Ertugrul et al. 2008).

Debt financing is expected to be related to the relevance of audit report information because management is more restricted from acting in self-interest as a result of closer monitoring by bondholders, and the possibilities of investors to foresee going concern issues is likely to increase as a result of the amount of information and the quality of the information available on the market. Finally, because bondholders may have protected themselves through covenants their behavior as a result of covenant violations may give investors early warning signals about potential financial difficulties.

Accordingly, it can be expected in light of the literature above and in Chapter 2, that mechanisms set up as a consequence of agency costs of debt may affect the relevance of audit report information, and it is likely that risk changes after going concern audit reports are smaller for firms with rich information environments.

H_{12}: Agency costs of debt of a firm have a negative affect on the change in volatility and systematic risk after the going concern audit reports.

7.2 Data

In the analysis of risk changes after going concern audit reports the same data is used as in Section 5. The sample consists of 237 Russell 3000 Index firms, all with a first time going concern audit report publicly available in SEC Edgar database or Thomson One Banker. All audit reports are from financial years ending 2002–2007, and they have been dated after the events around Enron and Arthur Andersen were uncovered (February 2002 – February 2008). The distribution of the observations across years and industries is given in Chapter 5, Table 2.

In addition to the stock price data needed to estimate the changes in volatility and risk, the regression analysis of this chapter requires data on the independent variables information asymmetry, information environment, leverage and disclosed financial distress. The stock price data are from Thomson Financial Datastream and independent variable data from Thomson Financial Worldscope.

7.3 Methodology

This section examines whether a going concern audit report affects the change in volatility and systematic risk of the firm's stock return. The econometrics literature recognized standard deviation as a statistical measure of spread. In this study

it measures the spread and uncertainty of expected future outcomes, i.e. the volatility of the returns. In stable circumstances where the uncertainty is small, the estimates of future cash flows are more aligned between actors. On the other hand in unstable conditions, where uncertainty increases, future outcomes are more difficult to predict and the volatility in stock returns is expected to increase.

To empirically test whether the return volatility and systematic risk of the stock changed after a going concern audit report, the standard deviation and beta are estimated for each firm before and after the going concern audit report date. The pre-going concern audit report period is [-130, -10] and the post-going concern audit report period is [10, 130], with the event date day [0] being either the audit report date or the 10-K report filing date. The change in standard deviation and beta for each firm is the difference between the pre- and post –period estimations.

The standard deviation is calculated as follows:

$$\sigma = \sqrt{\frac{\sum_{t=1}^{n}(R_{it} - \overline{R}_{it})^2}{n-1}} \tag{8}$$

Where,

R_{it} = return of stock i in period t
$\overline{R}_{it}$ = mean of values R_{it}
n = sample size

and the change in standard deviation is defined as,

$$\Delta\sigma = \sigma_{[10,130]} - \sigma_{[-130,-10]} \tag{9}$$

where [10, 130] and [-130,-10] indicate estimation periods, the audit report date being the event date [0].

The beta is defined as follows:

$$\beta_i = \frac{\sigma_{im}}{\sigma_m^2}, \tag{10}$$

where

σ_{im} = covariance between stock *i's return and the market return (Russell 3000 index)*
σ_m^2 = variance of the market return *(Russell 3000 index)*

and the change in beta is defined as,

$$\Delta\beta = \beta_{[10,130]} - \beta_{[-130,-10]} \tag{11}$$

where as before [10, 130] and [-130,-10] indicate estimation periods, with the audit report date being the event date [0].

For testing H_{10}, H_{11} and H_{12} a similar regression model is used as in Chapter 5. Here, the changes in STDEV and BETA are used as the dependent variables:

(12) $$\Delta STDEV_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_i + e_i$$

(13) $$\Delta BETA_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_i + e_i$$

Where:

MOWN = percentage of closely held shares
SIZE = logarithm of total assets
DA = percent of total debt to total assets
Z = Altman Z-score (1-year lagged) re-estimated by Grice (1997)
e = error term

The independent variables are as defined in Section 5.3. (p. 58).

The influence of outliers is controlled for by winsorizing all variables at two standard deviations from the mean (see e.g. Bernard et al. 1990). All tests are conducted and reported using winsorized and unwinsorized data.

7.4 Results

This section presents the results from the empirical analysis on changes in volatility and systematic risk after the going concern audit report date. First, descriptive statistics are presented. Second, results on the average change in volatility and systematic risk. Third, results are provided from the regression analysis on the relationship between information asymmetry, information environment, agency costs of debt, and changes in risk. Finally, additional analysis provides the results from empirical tests using the 10-K filing date as the event date.

7.4.1 Descriptive statistics

Table 24 presents descriptive statistics for the variables used in analyzing the evidence for hypotheses H_9, H_{10}, H_{11} and H_{12}. Again, Panel A contains the unwinsorized statistics while in Panel B the variables are winsorized at two standard deviations from the mean. Panel A and B means and medians all show an increase in volatility and systematic risk. This would indicate a higher volatility and higher systematic risk after the going concern audit report as expected. When examining

the statistics of the independent variables used in the regression it is clear that the firms in the sample are financially severely distressed. Means and medians for free cash flow per assets are negative likewise returns, earnings and book values. The standard deviations and ranges for some control variables highlight the need to control for extreme values. Therefore more attention is paid to the winsorized data in Panel B.

Table 25 presents the pairwise correlation matrix of the variables used in the regression analysis. The dependent variable STDEV is not significantly correlated with any of the independent variables in Panel A or Panel B. BETA, on the other hand, in Panel B is significantly negatively correlated with MOWN and positively with SIZE. The correlations between the independent variables are similar to those described in Section 5.3. In Panel B, SIZE is negatively correlated with MOWN. Furthermore, SIZE correlates with DA and Z as expected. This indicates that larger firms have less management ownership, less leverage (DA), and less reported financial distress.

Systematic risk and volatility for a 240-day period around the event date

Figures 3 and 4 illustrate the development of the volatility and systematic risk in a 240-day period around the going concern audit report date. In Figure 3, the standard deviation of the stock returns from the preceding 120 days is calculated for each day. The figure clearly suggests that there is an ascending trend in the volatility of the returns in the entire period, but also that there is a clear increase after the event date. The increase in the volatility over the 240-day period may be caused by several factors beside the going concern audit report. It is also highly likely and almost certain that the firms disclose information (not controlled for in this figure) during the period that may affect the volatility of returns. Interestingly, however, the figure illustrates a definite increase in the volatility just a few days before and after the event day, which could be a result of the going concern audit report.

Figure 4 illustrates the daily systematic risk for a 240-day period. The betas here are estimated using a 120-day estimation period. In order to illustrate the development of the beta from day to day in Figure 4, absolute values of daily betas are used to calculate the means. Absolute values have to be used because the sample consists of a significant number of firms with severe financial difficulties. Because of these difficulties several firms have negative betas, and for the purpose of this figure an increase in the negative beta is interpreted as an increase in systematic risk. For this reason, Figure 4 should be interpreted with caution. However, as in Figure 3, there seems to be a clear increase in the systematic risk just before the event date. This increase could be a result of the audit report.

Table 24. Descriptive statistics of variables (Audit report date)[a]

PANEL A. Original data set

	Δ STDEV	Δ BETA	MOWN	SIZE	DA	Z
Mean	0.007	0.334	38.481	2.465	64.518	-11.638
Median	0.000	0.074	35.401	2.230	23.006	-3.631
Maximum	0.782	2.771	97.103	10.506	3189.561	8.012
Minimum	-0.371	-2.032	0.000	-10.054	0.000	-257.393
Std. Dev.	0.084	0.765	24.789	2.628	233.029	28.011
Skewness	4.653	0.196	0.426	-0.037	11.017	-5.375
Kurtosis	44.254	4.017	2.316	5.022	141.898	39.390
n	237	237	226	234	235	197

PANEL B. Winsorized data set

	Δ STDEV	Δ BETA	*MOWN*	*SIZE*	*DA*	*Z*
Mean	0.003	0.331	38.928	2.501	45.624	-10.134
Median	0.000	0.077	35.992	2.230	23.006	-3.631
Maximum	0.180	2.058	92.117	7.950	337.244	0.348
Minimum	-0.126	-1.714	0.968	-1.813	0.000	-84.687
Std. Dev.	0.046	0.731	25.079	2.394	68.866	18.752
Skewness	0.701	0.107	0.422	0.403	2.729	-2.961
Kurtosis	5.205	3.356	2.271	2.810	10.967	11.132
n	237	237	228	234	235	197

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
[a] denotes the event date used
The variables are defined as follows:
Δ BETA = change in stock beta
Δ STDEV = change in standard deviation
MOWN = percentage of closely held shares
SIZE = natural logarithm of total assets
DA = percent of total debt to total assets
Z = Altman Z-score (1-year lagged)

Table 25. Correlation matrix (Audit report date)[a]

PANEL A. Original data set

	Δ STDEV	Δ BETA	MOWN	SIZE	DA	Z
Δ STDEV	1					
Δ BETA	-0.134*	1				
MOWN	0.057	-0.181**	1			
SIZE	-0.093	0.106	-0.187***	1		
DA	0.023	0.003	0.296***	-0.213	1	
Z	0.021	-0.067	-0.061	0.377***	-0.256***	1

PANEL B. Winsorized data set

	Δ STDEV	Δ BETA	MOWN	SIZE	DA	Z
Δ STDEV	1					
Δ BETA	-0.158**	1				
MOWN	0.070	-0.210***	1			
SIZE	-0.073	0.124*	-0.230***	1		
DA	0.052	-0.056	0.295***	-0.178**	1	
Z	0.021	0.004	-0.120*	0.459***	-0.331***	1

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
[a] denotes the event date used
The variables are defined as follows:
Δ BETA = change in stock beta
Δ STDEV = change in standard deviation
MOWN = percentage of closely held shares
SIZE = natural logarithm of total assets
DA = percent of total debt to total assets
Z = Altman Z-score (1-year lagged)

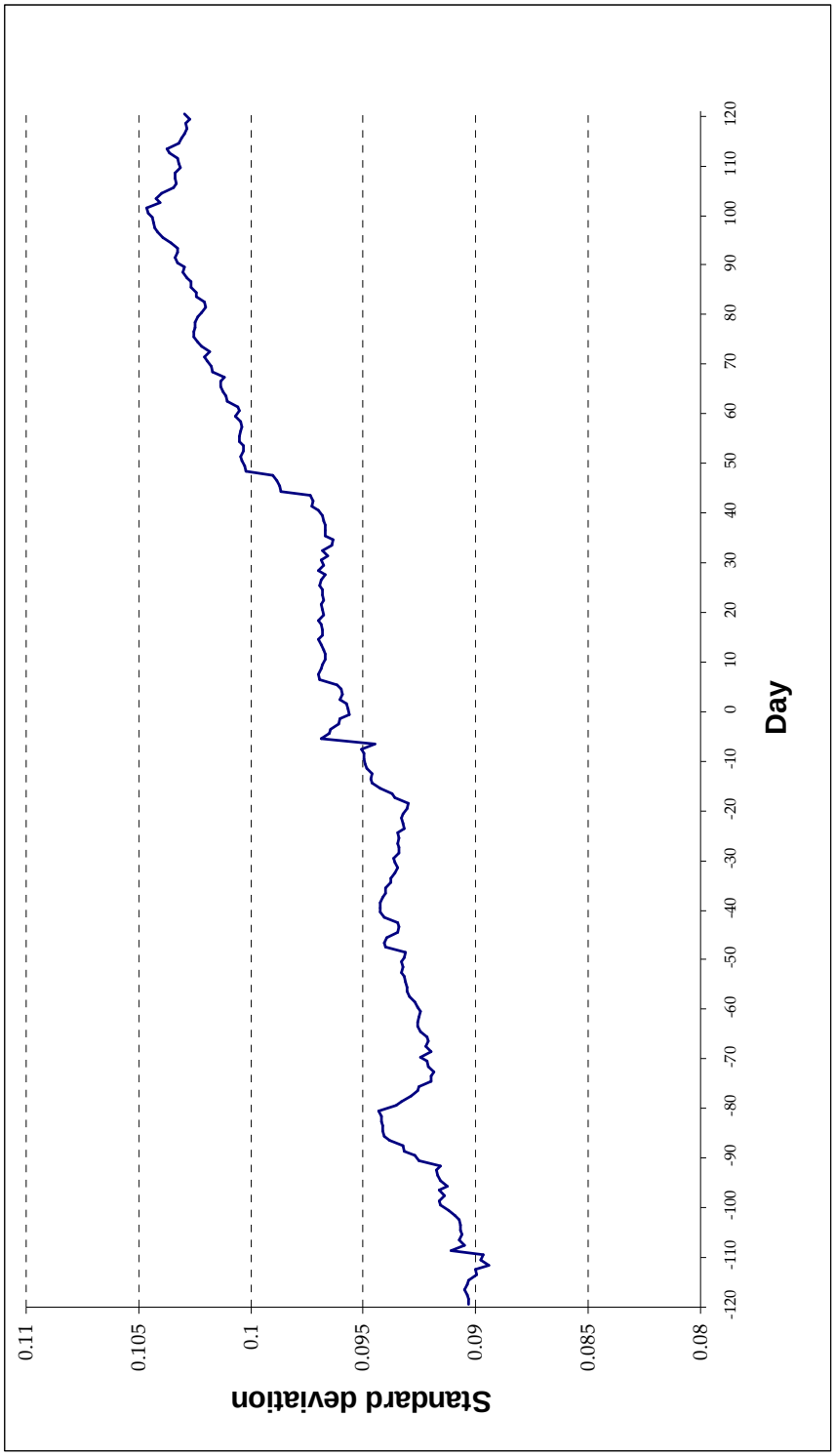

Figure 3. Volatility of stock returns for a 240-day period around the going concern audit report date.

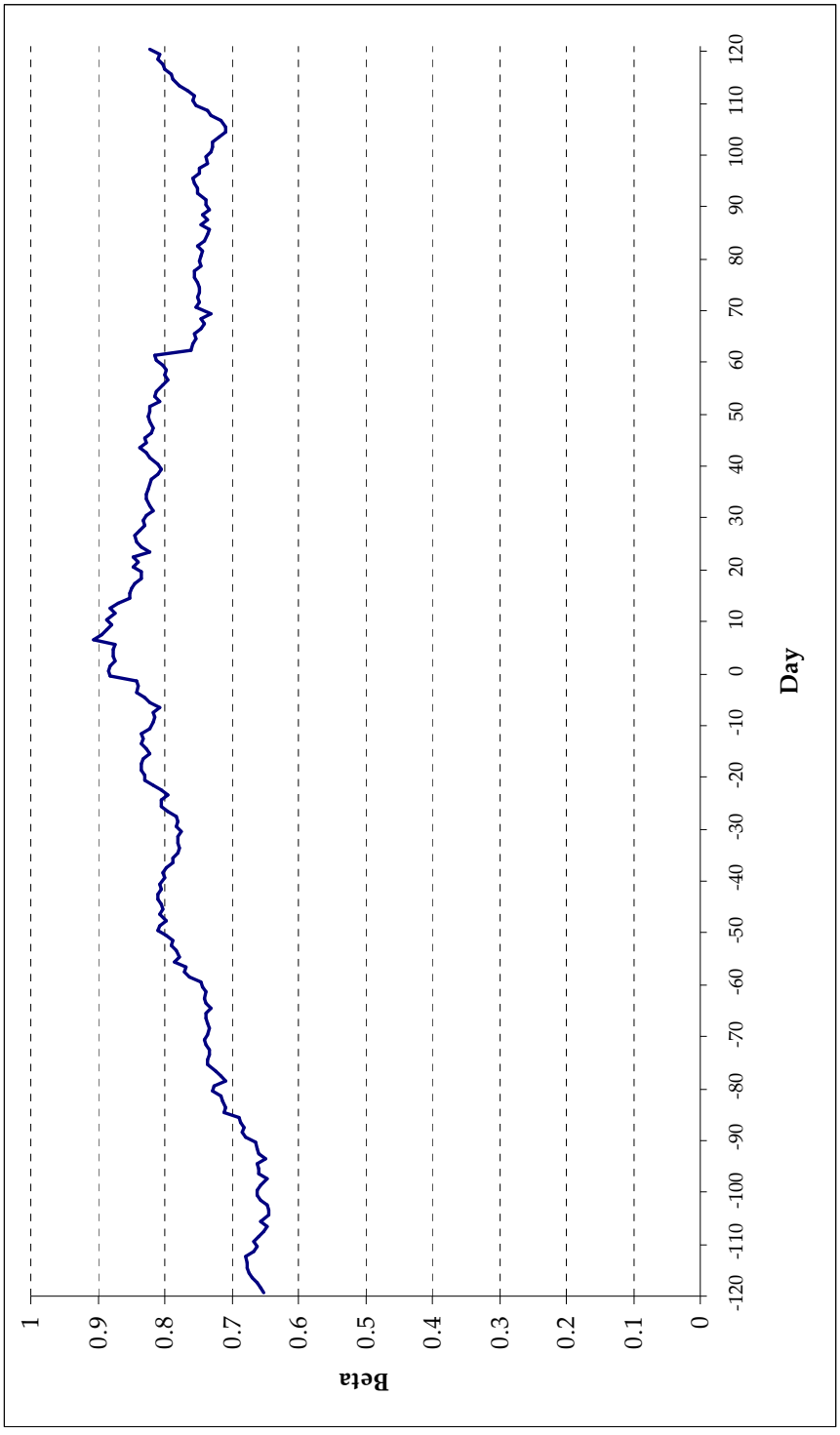

Figure 4. Systematic risk of stock for a 240-day period around the going concern audit report date.

7.4.2 Change in volatility and systematic risk after the going concern audit report date

Table 26 reports the results in the change in return volatility and systematic risk after a going concern audit report. The statistics in both Panel A and Panel B show that there has been a statistically significant increase in the systematic risk after the going concern audit report. Panel A contains the unwinsorized observations whereas in Panel B the potential effect of outliers has been reduced by winsorizing the data at two standard deviations from the mean.

This finding suggests that after the going concern audit report, the stock returns of the sample firms react more to the movement of the overall market. This implies that the going concern audit report has increased the uncertainty of the stock compared to the market. The results regarding the change in volatility reveal that on average volatility has increased, but the change is not statistically significant. Therefore no conclusions about the impact of the going concern audit report on the volatility can be drawn. Hypothesis H_9 is supported, specifically in terms of the change in systematic risk.

Table 26. Change in volatility and systematic risk after going concern audit report (Audit report date)[a]

PANEL A. Original data set

Period	**Mean change**	**T-statistic**
Δ Standard deviation	0.007	1.312
Δ Beta	0.463***	6.986

PANEL B. Winsorized data set

Period	**Mean change**	**T-test**
Δ Standard deviation	0.003	0.943
Δ Beta	0.468***	7.259

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively
[a] denotes the event date used

7.4.3 Information asymmetry, information environment, agency costs of debt, and the change in volatility and systematic risk

Table 27 illustrates the relationship between the information asymmetry, information environment, agency cost of debt, and the change in volatility and systematic risk by regressing change in STDEV and BETA on the independent variables MOWN, SIZE, DA and Z. The estimation results in Panel A give weak indications that the information asymmetry could explain changes in volatility. However, this relationship is statistically insignificant when the previously reported financial distress is controlled for.

The change in beta does not seem to be significantly related to the first three variables of interest, but the Z-score seems to have the expected effect. The more financial distress the financial statement has signaled in the previous year, the less the systematic risk increases after the audit report date. This indicates that the risk effect of the going concern audit report information could be preempted by the financial information already available on the market.

In panel B none of the independent variables are statistically significantly related to STDEV. Additionally, the relationship between BETA and Z is here statistically insignificant, whereas SIZE appears to have a weak positive relationship with BETA in the column with Z included, and MOWN a negatively significant relationship with BETA. The positive relationship between BETA and SIZE suggests that firms with richer information environments have a larger increase in BETA. Similarly, the negative effect of MOWN on BETA indicates that as information asymmetry increases also BETA increases.

As in Chapter 5 and Chapter 6, the adjusted R^2's are also low here. However, this is consistent with existing research (e.g. Knechel et al. 2007; Fleak et al. 1994; Chen et al. 2000). The reported F-statistics are insignificant in all models, which implies that the possibility that the regression coefficients are different from zero cannot be rejected. This casts doubt on the existence of the findings described above. As a conclusion, no convincing evidence is found for hypotheses H_{10}, H_{11} and H_{12}.

7.4.4 Change in volatility and systematic risk around the 10-K report date

This section complements the analysis conducted in the previous section. Here the event date of the analysis is the 10-K report filing date instead of the audit report date. The 10-K report filing date has traditionally been used in research. Whereas it is suggested that around the audit report date the abnormal returns are due to informed trading, the 10-K report filing date is clearly the date when the audit report is made available to the investors. The problem with this date is that the audit report is filed together with the annual report and therefore the observed abnormal returns may be affected by the accompanying information.

Table 27. Regressions of changes in volatility and systematic risk, and firm characteristics (Audit Report date)[a]

PANEL A. Original data set

Model: STDEV = $\alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + e_i$, Dependent Variable: Change in Standard Deviation			Model: BETA = $\alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + e_i$, Dependent Variable: Change in Beta	
Variable	STDEV	STDEV	BETA	BETA
Constant	1.566[a]	2.298	48.989***	34.449*
	(1.292)[b]	(1.138)	(3.344)	(1.766)
MOWN	-0.000***	0.007	-0.459	-0.372
	(-5.259)	(0.282)	(-1.312)	(-0.969)
SIZE	-0.307	-0.569	4.049	6.300
	(-1.150)	(-1.434)	(1.563)	(1.564)
DA	0.0198	0.000	0.038	0.026
	(0.678)	(0.136)	(0.426)	(0.254)
Z		0.025		-0.445***
		(1.321)		(-3.029)
# of observations	217	191	217	191
Adj. R^2	-0.002	-0.001	0.008	0.010
F-statistic	0.825	0.964	1.440	1.358

Table 27. Continued

PANEL B. Winsorized data set

Model: STDEV = α+ β_1MOWN$_i$+ β_2SIZE$_i$+ β_3DA$_i$+ β_4Z$_{i-1}$+ e$_i$,
Dependent Variable: Change in Standard Deviation

Model: BETA = α+ β_1MOWN$_i$+ β_2SIZE$_i$+ β_3DA$_i$+ β_4Z$_{i-1}$+ e$_i$,
Dependent Variable: Change in Beta

Variable	STDEV	STDEV	BETA	BETA
Constant	-0.121[a]	0.320	48.155***	34.544*
	(-0.159)[b]	(0.373)	(3.027)	(1.756)
MOWN	0.015	0.019	-0.549*	-0.508
	(0.872)	(1.152)	(-1.710)	(-1.453)
SIZE	-0.058	-0.175	4.868	7.310*
	(-0.413)	(-1.142)	(1.628)	(1.799)
DA	0.003	-0.001	0.067	0.055
	(0.449)	(-0.259)	(0.656)	(0.423)
Z		0.015		-0.565
		(1.003)		(-1.376)
# of observations	217	191	217	191
Adj. R^2	-0.003	-0.003	0.008	0.016
F-statistic	0.769	0.877	1.440	1.600

Table 27. Continued

Notes:

[a] denotes the event date used, [b] the coefficient, and [c] t- statistic

***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively

PANEL B. Observations winsorized at two standard deviations from the mean

All coefficients *100

The t-statistics are based on White's heteroskedasticity consistent standard errors (White 1980)

The variables are defined as follows:

MOWN = percentage of closely held shares

SIZE = natural logarithm of total assets

DA = percent of total debt to total assets

Z = Altman Z-score (1-year lagged)

Descriptive statistics

Table 28 tabulates the descriptive statistics of the change in standard deviation and beta, and the independent variables used in the regression analysis. In Panel A the changes in volatility and systematic risk are both negative, indicating that the riskiness has decreased after the 10-K report. However, in Panel B, when the extreme observations are winsorized at two standard deviations from the mean, the change in ΔSTDEV remains negative but ΔBETA is positive.

Table 28. Descriptive statistics of variables (10-K date)[a]

TABLE 28.
Descriptive statistics of variables
(10-k date)[a]

PANEL A. Original data set

	Δ STDEV	Δ BETA	MOWN	SIZE	DA	Z
Mean	-0.004	-0.004	38.481	2.465	64.518	-11.638
Median	-0.002	-0.002	35.401	2.230	23.006	-3.631
Maximum	0.005	0.048	97.103	10.506	3189.561	8.012
Minimum	-0.009	-0.093	0.000	-10.054	0.000	-257.393
Std. Dev.	0.004	0.021	24.789	2.628	233.029	28.011
Skewness	0.019	-0.492	0.426	-0.037	11.017	-5.375
Kurtosis	1.850	5.104	2.316	5.022	141.898	39.390
n	237	237	226	234	235	197

PANEL B. Winsorized data set

	Δ STDEV	Δ BETA	*MOWN*	*SIZE*	*DA*	*Z*
Mean	-0.004	0.014	38.928	2.501	45.624	-10.134
Median	-0.002	0.009	35.992	2.230	23.006	-3.631
Maximum	0.005	0.048	92.117	7.950	337.244	0.348
Minimum	-0.009	0.000	0.968	-1.813	0.000	-84.687
Std. Dev.	0.004	0.012	25.079	2.394	68.866	18.752
Skewness	-0.033	0.751	0.422	0.403	2.729	-2.961
Kurtosis	1.751	2.253	2.271	2.810	10.967	11.132
n	237	237	228	234	235	197

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
[a] denotes the event date used
The variables are defined as follows:
Δ BETA = change in stock beta
Δ STDEV = change in standard deviation
MOWN = percentage of closely held shares
SIZE = natural logarithm of total assets
DA = percent of total debt to total assets
Z = Altman Z-score (1-year lagged)

The correlation matrix in Table 29 shows that there are no significant correlations between the ΔSTDEV and the independent variables. In contrast, MOWN is significantly negatively correlated with ΔBETA. The correlations between the independent variables are similar to those in Table 25 explained previously.

Table 29. Correlation matrix (10-K date)[a]

PANEL A. Original data set

	Δ STDEV	Δ BETA	MOWN	LNTA	DA	Z
Δ STDEV	1					
Δ BETA	0.378***	1				
MOWN	-0.083	-0.079	1			
SIZE	0.087	-0.041	-0.187***	1		
DA	-0.063	-0.031	0.296***	-0.213***	1	
Z	-0.018	-0.029	-0.061	0.377***	-0.256***	1

PANEL B. Winsorized data set

	Δ STDEV	Δ BETA	MOWN	LNTA	DA	Z
Δ STDEV	1					
Δ BETA	-0.236***	1				
MOWN	-0.088	-0.122*	1			
SIZE	0.124	-0.055	-0.230***	1		
DA	0.012	-0.097	0.295***	-0.178**	1	
Z	0.018	0.100	-0.120*	0.459***	-0.331***	1

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
[a] denotes the event date used
The variables are defined as follows:
Δ BETA = change in stock beta
Δ STDEV = change in standard deviation
MOWN = percentage of closely held shares
SIZE = natural logarithm of total assets
DA = percent of total debt to total assets
Z = Altman Z-score (1-year lagged)

Changes in volatility and systematic risk after the 10-K report date

Table 30 presents the univariate results for the change in volatility and systematic risk. In the original data set Panel A the ΔSTDEV and ΔBETA are both statistically significantly negative around the date when the 10-K report is filed with the SEC. The reduction in the volatility and systematic risk is a surprise if it is assumed that the going concern audit report is disclosed for the first time at that date and if the report is expected to be relevant to the investors.

In the winsorized results of Table 30 Panel B the systematic risk has, however, increased (t-stat = 17.032), while the volatility has decreased. The increase in systematic risk proposes that stocks' sensitivity to overall market movements has increased.

The reduction of systematic risk and volatility after the 10-K report date could be explained primarily by the announcement of the annual financial report. Financial information disclosures help to align the estimations of the investors thereby reducing uncertainty. The results in Panel B suggest that the systematic risk increases after the 10-K report announcement, but the volatility caused by the spread of estimations on the future is reduced.

Table 30. Change in volatility and systematic risk after the going concern audit report (10-K date)[a]

PANEL A. Original data set

Period	**Mean change**	**T-statistic**
Δ Standard deviation	-0.004***	-13.484
Δ Beta	-0.004***	-2.995

PANEL B. Winsorized data set

Period	**Mean change**	**T-test**
Δ Standard deviation	-0.004***	-13.722
Δ Beta	0.014***	17.032

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively
[a] denotes the event date used

Information asymmetry, information environment and changes in systematic risk and volatility

Table 31 complements the analysis on changes in systematic risk and volatility around the 10-K report filing date of firms disclosing a going concern audit report. Specifically, the changes in systematic risk and volatility are regressed on the firm's information asymmetry, information environment, agency costs of debt and previously disclosed information concerning financial distress. The purpose is to examine whether some of these attributes affect the relevance of the going concern audit report.

As in the previous sections, information asymmetry is expected to increase the relevance of information disclosed, whereas richness of the information environment, leverage and previously disclosed information concerning financial distress are likely to decrease the change systematic risk and volatility.

The results from the regression analyses in Table 31 indicate only some weak evidence that only the information asymmetry between management and owners has an effect on the change volatility after the 10-K report filing date. However, when financial distress is controlled for this relationship is statistically insignificant. In Panel B of Table 31 the change in beta is significantly higher when the reported financial distress is lower. This is as expected, since the going concern audit report is less expected for those firms with better financial situation and therefore the going concern problems come as a bigger surprise.

Overall, these results suggest that around the 10-K report filing date the systematic risk increases and volatility decreases when extreme observations are dealt with. Furthermore, the results provide some evidence that the disclosed level of financial distress affects the change in systematic risk around the 10-K report, but the other variables expected to affect the relevance of audit report information prove insignificant.

Table 31. Regressions of changes in volatility and systematic risk, and firm characteristics (10-K date)[a]

PANEL A. Original data set				
Model: $STDEV = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + e_i$, Dependent Variable: Change in Standard Deviation			Model: $STDEV = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + e_i$, Dependent Variable: Change in Beta	
Variable	STDEV.	STDEV.	BETA	BETA
Constant	-0.425[b]***	-0.440***	-0.292	0.065
	(-8.748)[c]	(-6.287)	(-1.495)	(0.151)
MOWN	0.000***	-0.000	-0.000	-0.008
	(5.531)	(-0.045)	(-0.214)	(-1.065)
SIZE	0.012	0.021	-0.067	-0.093
	(0.900)	(1.462)	(-1.088)	(-1.087)
DA	0.000	0.000	0.000	-0.001
	(0.980)	(0.696)	(-0.588)	(-0.613)
Z		-0.001		-0.001
		(-0.911)		(-0.251)
# of observations	226	193	212	180
Adj. R^2	-0.005	-0.008	-0.009	-0.009
F-statistic	0.645	0.608	0.390	0.659

Table 31. Continued

PANEL B. Winsorized data set					
Model: STDEV = α+ β_1MOWN$_i$+ β_2SIZE$_i$+ β_3DA$_i$+ β_4Z$_{i-1}$+ e$_i$, Dependent Variable: Change in Standard Deviation			Model: STDEV = α+ β_1MOWN$_i$+ β_2SIZE$_i$+ β_3DA$_i$+ β_4Z$_{i-1}$+ e$_i$, Dependent Variable: Change in Beta		
Variable	STDEV.	STDEV.	BETA	BETA	
Constant	-0.177	0.317	1.596	1.852***	
	(-0.230)	(0.362)	(7.488)	(7.608)	
MOWN	0.010	0.016	-0.003	-0.005	
	(0.635)	(0.976)	(-0.882)	(-1.369)	
SIZE	-0.009	-0.154	0.023	-0.034	
	(-0.068)	(-1.038)	(0.618)	(-0.750)	
DA	0.003	-0.001	-0.001	0.000	
	(0.478)	(-0.272)	(-0.699)	(0.166)	
Z		0.014		0.009**	
		(0.907)		(2.071)	
# of observations	226	193	212	180	
Adj. R^2	-0.008	-0.007	-0.001	0.006	
F-statistic	0.416	0.658	0.441	1.251	

Table 31. Continued.

Notes:

[a] denotes the event date used, [b] the coefficient, and [c] t- statistic

***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively

PANEL B. Observations winsorized at two standard deviations from the mean

All coefficients *100

The t-statistics are based on White's heteroskedasticity consistent standard errors (White 1980)

The variables are defined as follows:

MOWN = percentage of closely held shares

SIZE = natural logarithm of total assets

DA = percent of total debt to total assets

Z = Altman Z-score (1-year lagged)

7.5 Concluding remarks

This chapter investigates the effect of auditors' going concern audit reports on the systematic risk and volatility. The purpose of the analysis is to study whether the announcement of the going concern audit report affects the investors' assessments of the riskiness of the firm and whether the report affects the spread of investors' future estimates. First, this chapter focuses on the volatility and systematic risk changes after the audit report date, whereas the last section analyzes risk changes after the 10-K filing date. Second, to further analyze the effects of firm specific characteristics, regression analysis is used to seek for evidence of a relationship between the change in volatility and systematic risk, and proxies for information asymmetry, information environment and agency costs of debt.

Overall, the results in Chapter 7 indicate that the auditors' going concern reports have the expected positive effect on the systematic risk. Around both alternative event dates the change in systematic risk is positive and significant. This indicates that the going concern audit report significantly increases the riskiness of the firm. Support for hypothesis H_9 is found.

Further investigation using a regression analysis shows that firm specific characteristics of information asymmetry, information environment or agency costs of debt do not affect the changes in volatility and systematic risk. However, previous disclosures on financial distress have a negative affect on the systematic risk. No support for hypotheses H_{10}, H_{11} or H_{12} is found.

8 AUDITORS' INTERNAL CONTROL WEAKNESS DISCLOSURES AND CHANGES IN SYSTEMATIC RISK AND VOLATILITY

The theoretical analysis of this dissertation suggests that auditors' internal control weakness disclosures have the potential to affect the price of the underlying stock. Chapter 6 of the dissertation empirically analyzed whether abnormal returns exist around the audit report is signed or filed to the SEC. The purpose of this chapter is to further analyze this issue. In detail, the effects of auditors' internal control weakness disclosures on the volatility of the stock returns and the systematic risk are investigated. Since a stock price change can be a result of adjustments in expected future cash flows or adjustments in the riskiness of the firm, this chapter provides empirical evidence whether the riskiness of the firm has indeed changed.

8.1 Hypothesis development

The Sarbanes-Oxley Act (SOX 2002) Section 404 requires that management maintain adequate internal controls over financial reporting and provide an auditor's attestation of its effectiveness in the annual report. The purpose of auditors' internal control weakness disclosures is to give an objective attestation of the effectiveness of internal control structures and procedures, and to inform financial statement users about material weaknesses.

Internal control weakness disclosures may address specific accounting issues or broader control issues that the auditor has identified as material weaknesses. Internal control weaknesses can affect the quality of accounting and financial information and increase the information risk of financial statement users.

8.1.1 Uncertainty and risk changes around internal control weakness disclosures

Weaknesses in internal controls may also signal how management is fulfilling its governance responsibilities. Credit rating agencies, for instance, have noted that internal control weaknesses should be considered in the credit rating process (Moody's Investor Service 2004; Fitch Ratings 2005). Additionally, Francis et al. (2004, 2005) have documented that information risk is positively related to the cost of equity. If auditors' internal control weakness reports help investors in identifying and communicating such uncertainties in a firm that affect the future expectations of a firm, then it is expected that there is a change in the volatility of the stock returns and the systematic risk of the stock around the time when the weaknesses are communicated to the markets.

In particular, there are two factors that may have an impact on the relationship between internal control weakness disclosures and changes in riskiness. First, the most important factor is whether the effectiveness of internal controls is relevant information for the investors or not, i.e. whether it affects the risk levels of the firm. Second, given that the information is relevant and does indeed affect the risk levels, the next question is whether the disclosure of the auditor's attestation is a valuable source for that information. Are the investors able to benefit from other accounting or non-accounting sources of information to reach the same conclusion?

In this chapter of the dissertation the change in volatility (standard deviation of the returns) and systematic risk (beta) are used to measure whether an adjustment in the risk levels of the firms has occurred. Standard deviation is a general measure of volatility, and here it measures how the observed returns are scattered around the mean. The standard deviation incorporates information about the uncertainty in the markets concerning the possible outcomes. The higher the standard deviation is, the more uncertainties are considered to exist about the future of the firm.

The CAPM beta measures the sensitivity of the stock to market movements. It is an estimate of the systematic risk of the stock and in capital market research it can be used for testing the announcement effect. Beta is an important factor of event studies because it isolates the firm-specific effect from the market movements (Hong and Sarkar 2007).

There are no published papers in auditing exploring the effects of auditors' internal control weakness disclosures on volatility or systematic risk. Ashbaugh-Skaife et al. (2009) show that firms with internal control weaknesses have higher systematic risk. However, they do not study whether this has increased as a result of the auditors' 404 disclosures. Recent studies have focused on the effects of management's Section 302 internal control reports and auditors' Section 404 reports on the cost of capital (Ogneva et al. 2007; Beneish et al. 2008) and abnormal stock returns (Beneish et al. 2008; Hammersley et al. 2008). Ogneva et al. (2007) find that internal control weaknesses are not directly associated with higher cost of capital, while Beneish et al. (2008) find that they are. Additionally, both Beneish et al. (2008) and Hammersley et al. (2008) find a significant abnormal stock reaction to disclosures on internal control weaknesses. Fargher et al. (1998) study the systematic risk changes around all types of qualified audit opinion announcements and withdrawals. They find significantly lower systematic risk levels after withdrawal announcements, indicating that audit reports do indeed have an impact on the levels of systematic risk.

In light of the literature reviewed in this dissertation, internal control weaknesses can be expected to affect the quality of accounting information, and therefore affect the information risk of the investors. As a consequence of the impaired information quality and increased information risk, it can be hypothesized that the

volatility returns and the systematic risk of the stock increase after the auditor's internal control weakness disclosures.

H_{13}: Auditors' internal control weakness disclosures are associated with an increase in volatility and systematic risk.

8.1.2 Information asymmetry, information environment, agency costs of debt, and risk changes around internal control weakness disclosures

Information asymmetry

In light of the literature reviewed in Chapter 2, Chapter 3 and the hypothesis development in Chapter 5 it is expected that the level of information asymmetry between management and owners will affect the relationship between auditors' internal control weakness disclosures and the riskiness of the firm. In detail, firms with low information asymmetry are expected to have fewer agency problems and less conflict of interests. Therefore, in firms with lower information asymmetry, the internal control weaknesses and internal control weakness disclosures are easier to foresee and consequently the future and the risk level of the firm are less unpredictable.

In terms of uncertainty and risk changes, the expectations above would imply that the information contained in the internal control weakness disclosure, causes a smaller change in volatility and systematic risk in firms with higher management ownership (lower information asymmetry). This is because the owners are more aware of the underlying issues of the auditor's conclusion due to lower information asymmetry and their interests are more aligned with those of the management.

H_{14}: The information asymmetry between management and owners has a positive affect on the change in volatility and systematic risk after auditors' internal control weakness disclosures.

Information environment

Similar expectation can be made for the effect of the information environment. Information environment refers to the richness of accounting and non-accounting information available to investors from different sources. To begin with, the firms themselves may differ substantially in the amount of information that they publish, and additionally, there are different actors that produce information evaluated by the capital markets. For example, a large number of news agencies follow and report information that may either directly or indirectly, combined with some other information, affect investment decisions. Additionally, financial analysts and rating agencies announce, for instance, forecasts, industry reports, earn-

ings estimates and risk analyses, all of which affect the information environment and the investors' abilities to accurately estimate the future cash flows of the firms.

The key assumption in this dissertation is that owners of firms with richer information environments are less likely to revise their expectations of the firm's future earnings or risk after the firm discloses e.g. an audit report. This is due to two reasons: (i) investors have more information available to make more accurate predictions and thus the uncertainty remains lower even after unexpected disclosures, (ii) firm specific information disclosures can be anticipated using available information and therefore the surprise of the disclosure is preempted and the stock market effect around the disclosure is reduced. For example, Callen et al. (2006) document that SEC filings are less relevant to investors with more information available. In a similar vein, Mitra et al. (2005) report that firms with a richer information environment exercise less accounting discretion and therefore have higher quality information and investors have less information risk.

As a result, the change in volatility and systematic risk subsequent to the auditors' internal control weakness disclosure is expected to be lower for firms with richer information environment.

H_{15}: The information environment of the firm has a negative affect on the change in volatility and systematic risk after the auditors' internal control weakness disclosures.

Agency costs of debt

As with information environment and information asymmetry, it is expected that the agency costs of debt could have an affect on conflict of interests, the quality and quantity of information available, and therefore on the risk affects of auditors' internal control weakness disclosures.

The review of the literature in previous chapters reveals that bondholders protect themselves against potential losses. The means of protection include insisting on increased control or monitoring of the management, increased amount or quality of disclosed information or demanding a higher interest rate, shorter maturity time and restricting covenants. In this dissertation it is hypothesized that these demands from the bondholder have an affect on the management discipline and information quality. From the investors' point of view, the information risk should be significantly lower when management discipline and information quality is higher, and as a consequence the uncertainty surrounding investment decision making should be lower.

In this dissertation it is hypothesized that, agency costs of debt are negatively related to the change in volatility and systematic risk after the auditors' internal control weakness disclosures.

H_{16}: The agency costs of debt of the firm have a negative affect on the change in volatility and systematic risk after the auditors' internal control weakness disclosures.

8.2 Data

In the analysis of risk changes around internal control weakness audit reports the same data is used as in Chapter 6. The sample consists of 354 Russell 3000 Index firms, all with a first time auditor's internal control weakness disclosure publicly available in Audit Analytics. All audit reports are from years ending 2005–2007.

Volatility of the stock returns and systematic risk are estimated using daily closing price data from Datastream for 354 firms and for the Russell 3000 index. In addition to the stock price data needed to estimate the changes in volatility and risk, the regression analysis of this chapter requires data on the independent variables information asymmetry, information environment, leverage and disclosed financial distress. This data is from Thomson Financial Worldscope. Information about the content of the management's internal control efficiency report is gathered from the Audit Analytics database. Table 13 of Section 6.2. (p.106) clarifies the distribution of the sample audit reports across time and industries.

8.3 Methodology

This chapter of the dissertation examines whether the auditor's internal control weakness disclosure affects the change in volatility of the firm's stock return or the systematic risk. The econometrics literature recognizes standard deviation as a statistical measure of spread. In this study it measures the spread of expected future outcomes, i.e. the volatility of the returns. In stable conditions where the uncertainty is small, the estimates of expected future cash flows are more aligned between actors. On the other hand in unstable conditions, where uncertainty increases, future outcomes are more difficult to predict and the volatility in stock returns is expected to increase.

To empirically test whether the return volatility and systematic risk of the stock changed after a going concern audit report, the standard deviation and beta are estimated for each firm before and after the going concern audit report date. The pre-going concern audit report period is [-130, -10] and the post-going concern audit report period is [10, 130], the audit report date being day [0]. The change in standard deviation and beta for each firm is the difference between the pre- and post –period estimations.

The standard deviation and the change in standard deviation are estimated as in Equations (8) and (9) of Section 7.3. (p. 130). Likewise, the beta and the change in beta are defined as in Equations (10) and (11) of Section 7.3. (p. 130). Finally,

for testing H_6 and H_7 a regression model similar to Equation (7) of Section 6.3 (p. 95) is applied. Here, the change in STDEV and BETA are used as the dependent variables, whereas in Section 6 the dependent variable is the standardized abnormal return:

$$(14)\ \Delta STDEV_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_i + \beta_5 ICE\_CONFL_i + e_i$$

$$(15)\ \Delta BETA_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_i + \beta_5 ICE\_CONFL + e_i$$

where the independent variables are as defined on in Section 5.3 on page 58 and Section 6.3. on page 95. The influence of outliers is controlled for by winsorizing all variables at two standard deviations from the mean (see e.g. Bernard et al. 1990). All tests are conducted and reported using winsorized and unwinsorized data.

8.4 Results

The results from the empirical analyses are now presented. The purpose is to examine whether the auditor's internal control weakness disclosure affects the riskiness of the firm. In detail, the first section focuses on changes in the volatility and systematic risk levels after the weakness disclosure. The second section provides a more thoroughgoing analysis of whether firm specific features, such as information asymmetry, information environment, agency cost of debt, financial distress or management's reporting on internal controls affect the changes in the riskiness of the firm after the auditor's weakness disclosure.

The results are reported using two alternative event dates. In the first part the audit report date is considered the first date of trade on the auditor's internal control weakness disclosure. Then, the second part applies the filing date of the 10-K annual report as the event date. The 10-K report date is traditionally used, because it is the most obvious date when the information is made public. The problem with this date lies in the large amount of simultaneous information that the annual report contains. However, as reviewed in previous chapters, several studies have advocated the use of the date of the actual event, here the audit report date, because it is normally the date when the auditor hands over the report to the management of the firm, and thus the first possible date that trade can take place on the basis of information contained in the auditor's report.

8.4.1 Descriptive statistics

Table 32 presents descriptive statistics for the variables used in analyzing hypotheses H_{13}, H_{14}, H_{15} and H_{16}. Panel A contains the statistics using the original data set while in Panel B the variables are winsorized at two standard deviations from the mean. Panel A and B means and medians all show an increase in volatility and

systematic risk. This would indicate that the auditor's internal control weakness disclosure has increased the volatility and systematic risk. The statistics for the independent variables used in the regression show that the firms in the sample are on average financially distressed, measured with the Z-score, but to a far less extent than the going concern firms in Chapter 5 and Chapter 7. The mean management ownership is about 20 percent, but the spread is relatively big, from less than one percent to over 90 percent. Leverage is about 20 percent on average, and after winsorizing the extreme values the maximum DA is below 100 percent. Finally, in 16.7 percent of the cases (59 observations) the management and audit report on internal controls are contradictory, and the dummy receives the value one.

Table 33 tabulates the correlations between the dependent and independent variables used in this empirical analysis. Interestingly, the change in volatility is significantly negatively correlated with SIZE and Z. This implies that the uncertainty, measured by the volatility, is less affected in firms with a richer information environment and more stable financial condition. In addition, larger firms (SIZE) in the sample have less management ownership (MOWN), higher leverage (DA), more stable financial position (Z) and more often conflicting management and audit reports on internal controls (ICE_CONFL). The last observation is somewhat surprising. Generally, the management of larger firms would be expected to be better able to evaluate the effectiveness of the internal controls. One explanation could be that the weaknesses are more obvious in smaller firms that are growing faster and going through restructuring, whereas in the larger and more stable firms the identification of weaknesses is more demanding for the management as well.

Systematic risk and volatility for a 240-day period around the internal control weakness disclosure

Figure 5 and Figure 6 illustrate the movement of the volatility and systematic risk the around the internal control weakness disclosure. These figures use, as in the previous chapter, an estimation period of 120 days for calculating the standard deviation and beta for each day in the 240-day period around the disclosure.

Figure 5 illustrates a decrease in the volatility in the period preceding the internal control weakness report. About 30 days before the audit report is issued the decrease ends and the standard deviation stabilizes. Figure 6 shows that the systematic risk of the sample firms has been decreasing in the pre-event period as well. The decreasing trend ends around the date on which the auditor issued the internal control weakness disclosure. After the disclosure the systematic risk remains relatively stable for 90 days, thereafter increasing. The change in the decreasing trend in the pre-event period could be due to the auditor's disclosure. Interestingly, the systematic risk does not start increasing shortly after the disclosure, but rather only 3 months later, therefore it is most likely due to some other reason in addition to or regardless of the auditor's internal control weakness disclosure.

Table 32. Descriptive statistics of variables (Audit report date)[a]

PANEL A. Original data set

	Δ STDEV	Δ BETA	MOWN	SIZE	DA	Z	ICE_ CONFL
Mean	0.007	0.023	23.058	6.940	23.511	-0.460	0.167
Median	0.002	0.001	18.642	6.737	18.465	0.111	0.000
Maximum	0.126	2.270	91.913	13.625	135.462	6.902	1.000
Minimum	-0.023	-2.007	0.022	2.672	0.000	-48.643	0.000
Std. Dev.	0.017	0.536	19.820	1.687	24.060	3.471	0.373
Skewness	2.171	-0.123	1.177	0.854	1.286	-9.740	1.789
Kurtosis	12.323	4.448	4.178	4.631	4.808	123.598	4.200
n	354	354	347	352	351	320	354

PANEL B. Winsorized data set

	Δ STDEV	Δ BETA	*MOWN*	*SIZE*	*DA*	*Z*	ICE_ CONFL
Mean	0.007	0.025	22.845	6.907	23.174	-0.189	0.167
Median	0.002	0.003	18.642	6.737	18.465	0.111	0.000
Maximum	0.096	1.333	75.645	10.339	87.087	1.253	1.000
Minimum	-0.023	-1.578	0.329	4.241	0.000	-4.931	0.000
Std. Dev.	0.015	0.493	19.158	1.518	22.941	1.207	0.373
Skewness	1.526	-0.139	1.018	0.420	1.005	-2.328	1.789
Kurtosis	7.087	3.285	3.514	2.506	3.375	8.907	4.200
n	354	354	347	352	351	320	354

Notes:

PANEL B. Observations winsorized at two standard deviations from the mean

[a] denotes the event date used

The variables are defined as follows:

Δ BETA = change in stock beta

Δ STDEV = change in standard deviation

MOWN = percentage of closely held shares

SIZE = natural logarithm of total assets

Z = Altman Z-score (1-year lagged)

DA = percent of total debt to total assets

ICE_CONFL = conflict in the internal control effectiveness reports from the management and the auditor

Table 33. Correlation matrix (Audit Report date)[a]

PANEL A. Original data set

	Δ STDEV	Δ BETA	MOWN	SIZE	DA	Z	ICE_ CONFL
Δ STDEV	1						
Δ BETA	0.107**	1					
MOWN	0.049	-0.046	1				
SIZE	-0.177***	0.028	-0.104*	1			
DA	-0.048	0.050	0.086	0.372***	1		
Z	-0.199***	-0.078	-0.005	0.149***	-0.003	1	
ICE_ CONFL	-0.021	-0.080	0.090*	0.201***	0.048	0.035	1

PANEL B. Winsorized data set

	Δ STDEV	Δ BETA	MOWN	SIZE	DA	Z	ICE_ CONFL
Δ STDEV	1						
Δ BETA	0.101*	1					
MOWN	-0.007	-0.030	1				
SIZE	-0.131**	0.045	-0.113**	1			
DA	-0.038	0.067	0.072	0.391***	1		
Z	-0.090*	0.038	-0.030	0.300***	-0.051	1	
ICE_ CONFL	-0.007	-0.081	0.077	0.194***	0.056	0.007	1

Notes:

PANEL B. Observations winsorized at two standard deviations from the mean

[a] denotes the event date used

The variables are defined as follows:

Δ BETA = change in stock beta

Δ STDEV = change in standard deviation

MOWN = percentage of closely held shares

SIZE = natural logarithm of total assets

DA = percent of total debt to total assets

Z = Altman Z-score (1-year lagged)

ICE_CONFL = conflict in the internal control effectiveness reports from the management and the auditor

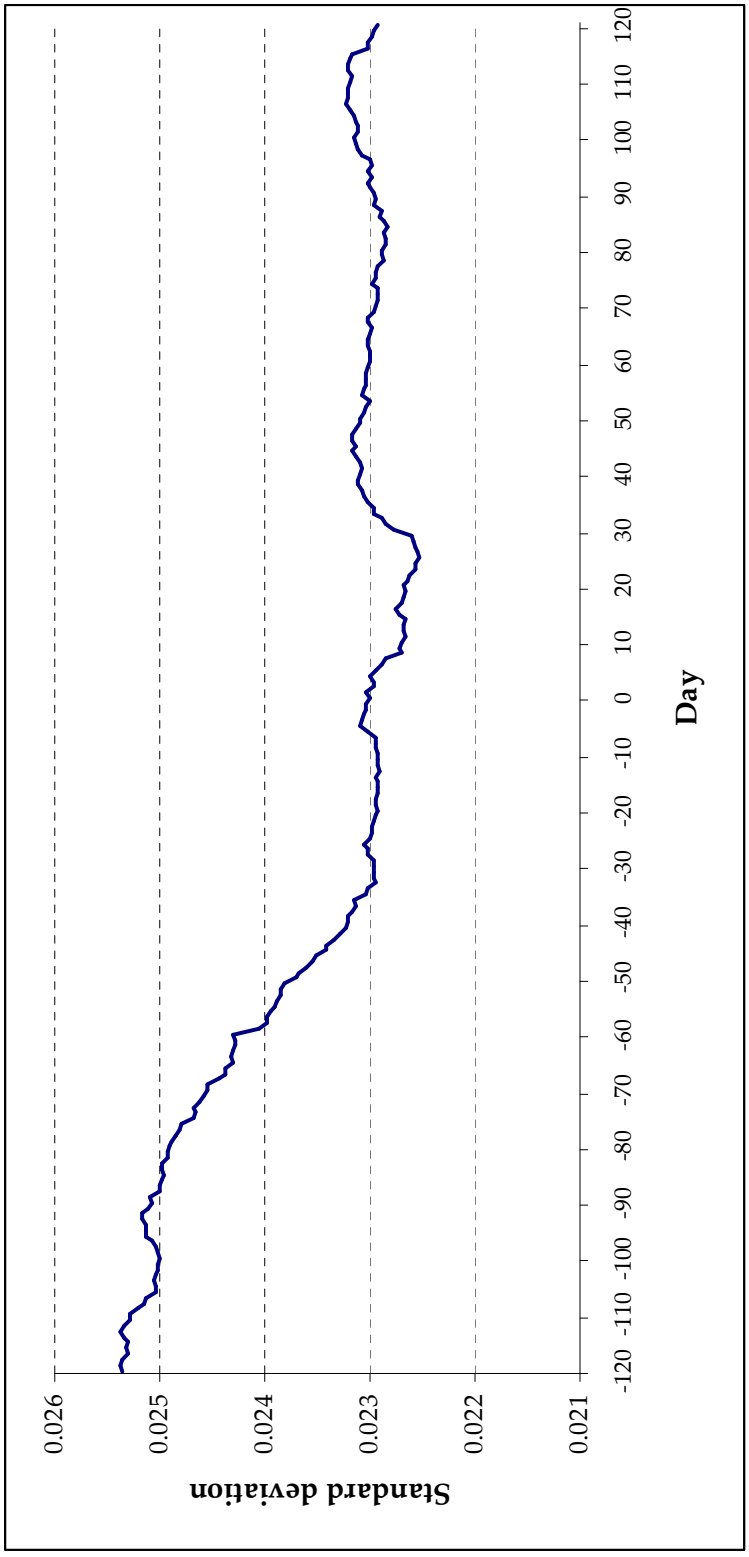

Figure 5. Volatility of stock returns for a 240-day period around the internal control weakness disclosure date.

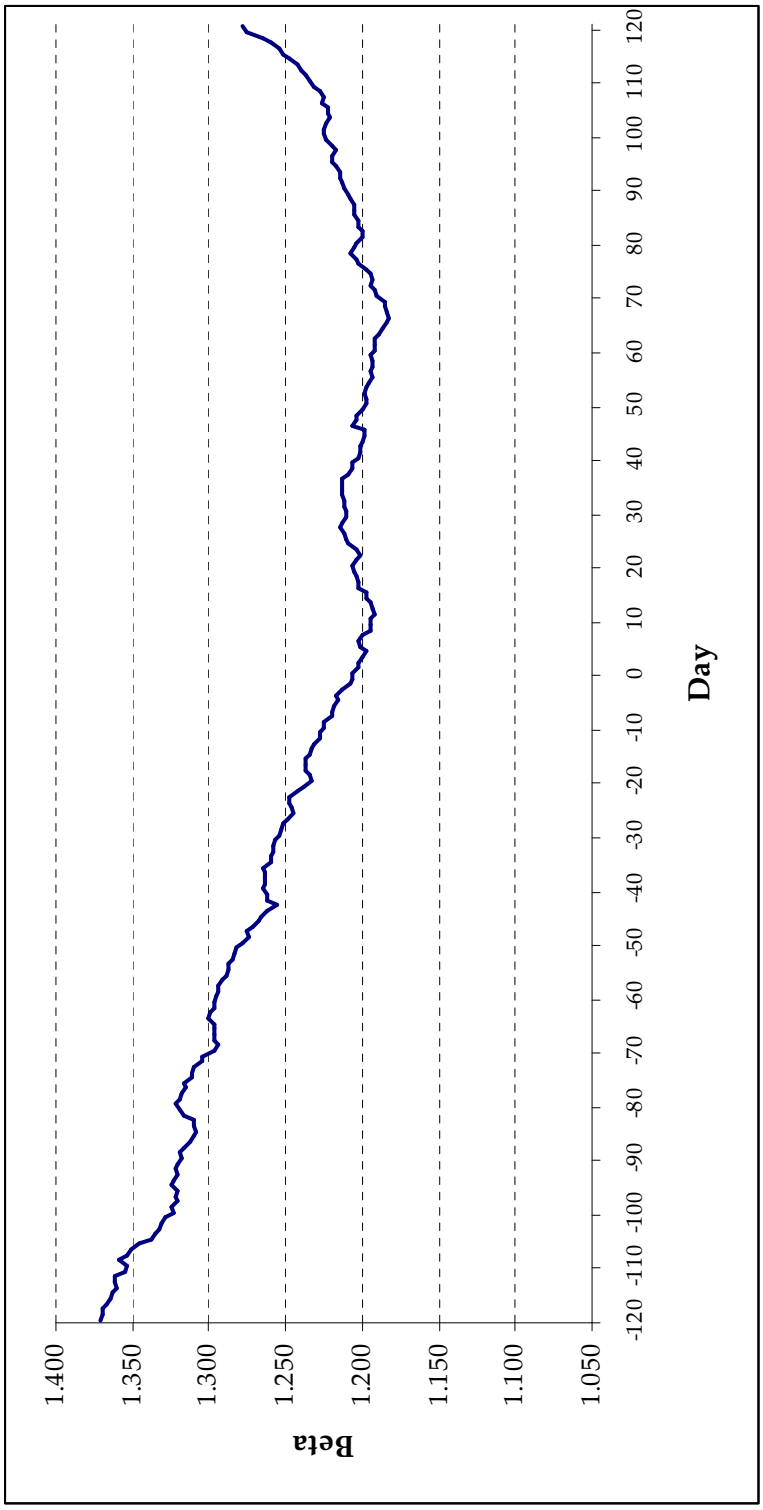

Figure 6. Systematic risk of the stock for a 240-day period around the internal control weakness disclosure date.

8.4.2 Change in volatility and systematic risk after the internal control weakness disclosure date

Table 34 presents the results from the analysis of the changes in systematic risk and volatility after the auditor's internal control weakness disclosure. The mean changes in both measures are positive, indicating that the riskiness or uncertainty has increased. The change in volatility is statistically significant at the 1 percent level (t-stat in Panel B =8.675). This increase in volatility is as expected according to the literature and thus provides evidence supporting hypothesis H_{13}. The result can be interpreted to indicate that the internal control weakness disclosure has increased the uncertainty related to the price of the stock. Additional tests (not tabulated) on only those 295 firms that do not have conflicting Section 302 and Section 404 reports reveal results similar to those in Table 34, that the change in volatility is positive (mean change = 0.007) and statistically significant at the 1 percent level (t-stat for the winsorized observations = 7.750). These additional findings show that the volatility increase in Table 34 is not driven by the 59 cases with conflicting internal control reports.

Table 34. Change in volatility and systematic risk after internal control weakness disclosure (Audit report date)[a]

PANEL A. Original data set

Period	**Mean change**	**T-statistic**
Δ Standard deviation	0.007***	8.390
Δ Beta	0.023	0.819

PANEL B. Winsorized data set

Period	**Mean change**	**T-test**
Δ Standard deviation	0.007***	8.675
Δ Beta	0.025	0.970

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively
[a] denotes the event date used

8.4.3 Information asymmetry, information environment, agency cost of debt, and the change in volatility and systematic risk

Table 35 reports the results from the analysis on the relationship between change in volatility and systematic risk, and information asymmetry, information environment and agency cost of debt. Additionally, the effects of reported financial distress and management reporting on internal controls are controlled for.

The first two columns of Panel A and Panel B illustrate how the variables studied affect the change in volatility. The results confirm that the information environment of the firm is statistically significantly related to the change in volatility. This finding also holds after controlling for the management report and the financial distress reported in the previous year. In detail, firms with richer information environment have significantly smaller changes in volatility. This suggests that the internal control weaknesses are not identifiable for firms with richer information environments and therefore this information is already taken into account when the auditor's internal control weakness is disclosed. Alternatively, the richer information environment may not be able to identify the internal control weaknesses, but the availability of diverse information cushions them against an increase in uncertainty.

In this sample the information asymmetry and agency cost of debt or financial distress and management reports for that matter, do not have a significant affect on the change in the volatility of the firm. Since the variable ICE_CONFL was significantly negatively related to the abnormal returns around the auditor's internal control weakness disclosure, it is slightly surprising that contradictory management and auditor disclosures on internal control efficiency do not increase uncertainty. The regression regarding the change in systematic risk reveals that none of the variables studied have an affect. This is on the other hand also the case in the analysis on the abnormal returns.

Table 35. Regressions of changes in volatility and systematic risk, and firm characteristics (Audit Report date)[a]

PANEL A. Original data set

Model:

$STDEV_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + \beta_5 ICE\_CONFL_i + e_i$,

Dependent Variable: Change in Standard Deviation

Model:

$BETA = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + \beta_5 ICE\_CONFL_i + e_i$,

Dependent Variable: Change in Beta

Variable	STDEV	STDEV	BETA		BETA	
Constant	1.870***	1.415***		3.155		5.437
	(3.951)	(3.401)		(0.228)		(0.406)
MOWN	0.003	0.004		-0.133		-0.185
	(0.426)	(0.574)		(-1.008)		(-1.282)
SIZE	-0.175***	-0.137**		-0.087		-0.308
	(-2.852)	(-2.525)		(-0.051)		(-0.182)
DA	0.001	0.000		0.129		0.141
	(0.286)	(-0.097)		(1.173)		(1.191)
Z		-0.085				-1.191
		(-1.115)				(-1.066)
ICE_CONFL		-0.006				-7.515
		(-0.028)				(-0.984)
# of observations	346	314	346		314	
Adj. R^2	0.024	0.055		-0.004	0.001	
F-statistic	3.833**	4.642***		0.623	0.384	

Table 35. Continued

PANEL B. Winsorized data set				
Model:			Model:	
$STDEV_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + \beta_5 ICE\_CONFL_i + e_i$,			$BETA = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + \beta_5 ICE\_CONFL_i + e_i$,	
Dependent Variable: Change in Standard Deviation			Dependent Variable: Change in Beta	
Variable	STDEV	STDEV	BETA	BETA
Constant	1.632***	1.164***	-1.006	9.599
	(3.217)	(2.943)	(-0.076)	(0.678)
MOWN	-0.002	-0.001	-0.080	-0.139
	(-0.419)	(-0.313)	(-0.640)	(-0.998)
SIZE	-0.135**	-0.088*	0.319	-1.117
	(-2.084)	(-1.664)	(0.187)	(-0.566)
DA	0.001	-0.001	0.147	0.202
	(0.309)	(-0.273)	(1.284)	(1.585)
Z		-0.105		2.092
		(-0.947)		(0.656)
ICE_CONFL		0.012		-7.306
		(0.064)		(-0.996)
# of observations	346	314	346	314
Adj. R^2	0.008	0.008	-0.003	-0.003
F-statistic	0.117	0.181	0.560	0.530

Table 35. Continued

Notes:

[a] denotes the event date used, [b] the coefficient, and [c] t- statistic

***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively

PANEL B. Observations winsorized at two standard deviations from the mean

All coefficients *100

The t-statistics are based on White's heteroskedasticity consistent standard errors (White 1980)

The variables are defined as follows:

MOWN = percentage of closely held shares

SIZE = natural logarithm of total assets

DA = percent of total debt to total assets

Z = Altman Z-score (1-year lagged)

ICE_CONFL = conflict in the internal control effectiveness reports from the management and the auditor

8.4.4 Change in volatility and systematic risk around the 10-K report date

To complete the analysis of the volatility and systematic risk changes around the auditor's internal control weakness reports, an alternative event date is tested here. As described in the previous chapters of this dissertation, the date of public disclosure of audit reports is not a straightforward issue. When examining short-term market impacts of financial disclosures, the determination of the appropriate event date is a key concern. Markets are expected to quickly incorporate all new and relevant information and therefore, if measured at the wrong point in time, the results of the analysis may be affected.

This section of the dissertation is not as sensitive to the event date as, for example, the empirical analyses in Chapter 5 and Chapter 6, because +/- 9 days around the event date is not included in the estimation of pre- and post-period volatility and systematic risk. However, because the 10-K filing date may be, and in most cases is, more than 9 days after the audit report date, it is of interest in this dissertation also to examine the risk effects of internal control weaknesses around the 10-K report filing date.

Descriptive statistics

Table 36 presents the descriptive statistics for the change in volatility, the change in systematic risk and the independent variables used in the regressions. Panel A presents the statistics from the original data set and Panel B from the winsorized data. MOWN, SIZE, DA, Z and ICE_CONFL have been discussed in the Section 8.4.1.

The mean and median change in volatility is negative, but close to zero, suggesting that there is only a modest decrease in volatility after the 10-K report with the auditor's internal control weakness disclosure is filed. The change in systematic risk is also on average negative and modest. This implies that the announcement of the audit report together with the annual report does not seem to increase the riskiness of the firms.

The correlations in Panel A of Table 37 reveal that the change in systematic risk is negatively related to Z. This indicates that the weak financial standing that the firm has announced earlier moderates the increase in systematic risk. Panel B indicates that the correlation between the change in volatility and Z in Panel A was driven by extreme values. In Panel B the change in volatility is positively correlated with SIZE, DA and Z. This suggests that the auditor's internal control weakness disclosure increases volatility more in firms with rich information environment, more agency costs of debt and stronger financial position. The correlations between the independent variables are as explained in Section 8.4.1.

Table 36. Descriptive statistics of variables (10-K date)[a]

PANEL A. Original data set

	Δ STDEV	Δ BETA	MOWN	SIZE	DA	Z	ICE_ CONFL
Mean	-0.000	-0.002	23.058	6.940	23.511	-0.460	0.167
Median	-0.000	-0.002	18.642	6.737	18.465	0.111	0.000
Maximum	0.127	1.911	91.913	13.625	135.462	6.902	1.000
Minimum	-0.062	-1.814	0.022	2.672	0.000	-48.643	0.000
Std. Dev.	0.011	0.423	19.820	1.687	24.060	3.471	0.373
Skewness	4.450	0.214	1.177	0.854	1.286	-9.740	1.789
Kurtosis	54.736	6.014	4.178	4.631	4.808	123.598	4.200
n	354	354	347	352	351	320	354

PANEL B. Winsorized data set

	Δ STDEV	Δ BETA	*MOWN*	*SIZE*	*DA*	*Z*	ICE_ CONFL
Mean	-0.001	-0.001	22.845	6.907	23.174	-0.189	0.167
Median	-0.001	-0.002	18.642	6.737	18.465	0.111	0.000
Maximum	0.031	1.181	75.645	10.339	87.087	1.253	1.000
Minimum	-0.027	-1.017	0.329	4.241	0.000	-4.931	0.000
Std. Dev.	0.007	0.361	19.158	1.518	22.941	1.207	0.373
Skewness	-0.093	0.223	1.018	0.420	1.005	-2.328	1.789
Kurtosis	5.918	3.552	3.514	2.506	3.375	8.907	4.200
n	354	354	347	352	351	320	354

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
[a] denotes the event date used
The variables are defined as follows:
Δ BETA = change in stock beta
Δ STDEV = change in standard deviation
MOWN = percentage of closely held shares
ICE_CONFL = conflict in the internal control effectiveness reports from the management and the auditor
Z = Altman Z-score (1-year lagged)
DA = percent of total debt to total assets
SIZE = natural logarithm of total assets

Table 37. Correlation matrix (10-K date)[a]

PANEL A. Original data set

	Δ STDEV	Δ BETA	MOWN	SIZE	DA	Z	ICE_ CONFL
Δ STDEV	1						
Δ BETA	0.040	1					
MOWN	0.081	0.027	1				
SIZE	0.043	-0.016	-0.104*	1			
DA	0.048	0.059	0.086*	0.372***	1		
Z	-0.181***	-0.130**	-0.005	0.149***	-0.003	1	
ICE_ CONFL	0.008	0.021	0.090	0.201***	0.048	0.035	1

PANEL B. Winsorized data set

	Δ STDEV	Δ BETA	MOWN	SIZE	DA	Z	ICE_ CONFL
Δ STDEV	1						
Δ BETA	-0.031	1					
MOWN	-0.023	0.016	1				
SIZE	0.192***	-0.034	-0.113**	1			
DA	0.111**	0.018	0.072	0.391***	1		
Z	0.136**	-0.122**	-0.030	0.300***	-0.051	1	
ICE_ CONFL	0.016	0.007	0.077	0.194***	0.056	0.007	1

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
[a] denotes the event date used
The variables are defined as follows:

Δ BETA = change in stock beta
Δ STDEV = change in standard deviation
MOWN = percentage of closely held shares
SIZE = natural logarithm of total assets
DA = percent of total debt to total assets
Z = Altman Z-score (1-year lagged)
ICE_CONFL = conflict in the internal control effectiveness reports from the management and the auditor

Change in volatility and systematic risk after the 10-K report

Table 38 presents the mean changes in volatility and systematic risk after the filing of the 10-K report containing the auditor's internal control weakness disclosure. The mean change in volatility is negative in both Panel A and Panel B. However, only in panel B, after the extreme observations have been dealt with, is the decrease in volatility statistically different from zero. The mean change in systematic risk is negative in both the original as well as the winsorized data set, but the change is statistically insignificant.

Table 38. Change in volatility and systematic risk after the auditor's internal control weakness disclosure (10-K date)[a]

PANEL A. Original data set

Period	**Mean change**	**T-statistic**
Δ Standard deviation	-0.000	-0.659
Δ Beta	-0.002	-0.107

PANEL B. Winsorized data set

Period	**Mean change**	**T-test**
Δ Standard deviation	-0.001***	-2.650
Δ Beta	-0.001	-0.023

Notes:
PANEL B. Observations winsorized at two standard deviations from the mean
***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively
[a] denotes the event date used

The statistically significant (t-stat = -2.650) decrease in volatility is unexpected if the 10-K report is considered to be the first day of trade on the audit report information, and if the audit report information is relevant. The evidence in the previous section indicates that the volatility increased significantly after the audit report date, which could indicate that the auditor's internal control weakness disclosure has affected the volatility before the 10-K filing date. Given the evidence on the analysis using the audit report date the decrease in volatility around the 10-K filing date is not surprising, because the uncertainty impact of the internal control weakness is already incorporated in the volatility. Furthermore, one significant factor explaining the decrease in volatility after the 10-K filing date is the disclosure of annual report information. Annual reports reduce the information asymmetry between investors and enrich the information environment and thus it has the potential to remove some of the uncertainties in the stock markets.

Information asymmetry, information environment, agency cost of debt and the change in volatility and systematic risk

Table 39 presents the results from the regression analysis. The purpose of the regression is to find out which factors affect the change in volatility and systematic risk after the filing date of the 10-K report with the auditor's internal control weakness disclosure.

The change in volatility in Panel A is unrelated to the independent variables. However, in Panel B, with the extreme observations winsorized, the results show that leverage is positively related to the change in volatility after controlling for disclosed financial distress and disclosed management report on internal controls. When previous disclosures (Z and ICE_CONFL) are not included in the regression, then information environment is positively related to the change in volatility.

The change in systematic risk is to a large extent unaffected by the independent variables. In Panel A the disclosed financial distress (Z) is significantly (t-statistic = -1.802) related to the change in systematic risk. However, this finding appears to be driven by some extreme observations, because in Panel B the relationship is insignificant.

Overall, the selected independent variables are unable to significantly explain the variation of the change in systematic risk. In contrast, the change in volatility appears to be related to some of the variables, in particular to leverage.

Table 39. Regressions of changes in volatility and systematic risk, and firm characteristics (10-K date)[a]

PANEL A. Original data set

Model:
$STDEV_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + \beta_5 ICE\_CONFL_i + e_i$,
Dependent Variable: Change in Standard Deviation

Model:
$BETA = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + \beta_5 ICE\_CONFL_i + e_i$,
Dependent Variable: Change in Beta

Variable	STDEV	STDEV	BETA	BETA
Constant	-0.349	-0.310	1.354	1.506
	(-1.148)	(-1.252)	(0.127)	(0.141)
MOWN	0.005	0.004	0.037	0.035
	(0.865)	(0.718)	(0.298)	(0.267)
SIZE	0.024	0.017	-0.852	-1.065
	(0.551)	(0.535)	(-0.600)	(-0.729)
DA	0.001	0.003	0.140	0.175
	(0.676)	(1.035)	(1.010)	(1.225)
Z		-0.061		-1.339*
		(-0.877)		(-1.802)
ICE_CONFL		-0.073		0.387
		(-0.721)		(0.060)
# of observations	346	314	346	314
Adj. R^2	0.001	0.030	-0.002	0.008
F-statistic	1.121	2.933**	0.721	1.481

Table 39. Regressions

PANEL B. Winsorized data set

Model: $STDEV_i = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + \beta_5 ICE\_CONFL_i + e_i$,
Dependent Variable: Change in Standard Deviation

Model: $BETA = \alpha + \beta_1 MOWN_i + \beta_2 SIZE_i + \beta_3 DA_i + \beta_4 Z_{i-1} + \beta_5 ICE\_CONFL_i + e_i$,
Dependent Variable: Change in Beta

Variable	STDEV	STDEV	BETA	BETA
Constant	-0.615***	-0.333*	5.567	1.266
	(-3.386)	(-1.860)	(0.552)	(0.124)
MOWN	-0.000	-0.001	0.017	0.021
	(-0.125)	(-0.850)	(0.148)	(0.176)
SIZE	0.072***	0.029	-1.067	-0.546
	(2.902)	(1.116)	(-0.798)	(-0.391)
DA	0.001	0.004**	0.061	0.059
	(0.990)	(2.567)	(0.607)	(0.599)
Z		0.060		-3.106
		(1.517)		(-1.322)
ICE_CONFL		-0.038		-0.039
		(-0.505)		(-0.007)
# of observations	346	314	346	314
Adj. R^2	0.029	0.034	-0.006	-0.002
F-statistic	4.407***	3.210***	0.268	0.861

Table 39. Regressions

Notes:

[a] denotes the event date used, [b] the coefficient, and [c] t- statistic

***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively

PANEL B. Observations winsorized at two standard deviations from the mean

All coefficients *100

The t-statistics are based on White's heteroskedasticity consistent standard errors (White 1980)

The variables are defined as follows:

MOWN = percentage of closely held shares

SIZE = natural logarithm of total assets

DA = percent of total debt to total assets

Z = Altman Z-score (1-year lagged)

ICE_CONFL = conflict in the internal control effectiveness reports from the management and the auditor

8.5 Concluding remarks

This chapter reports the results from the empirical analysis of changes in volatility and systematic risk after auditor's internal control weakness disclosures. First, the analysis provides some evidence on the change in volatility after the audit report date. The volatility increases significantly after the internal control weakness report has been dated, as hypothesized in H_{13}. This finding indicates that the uncertainty of the firm's stock increases significantly after the audit report.

Next the chapter analyzes the relationship between information asymmetry, information environment, agency costs of debt and changes in risk. The results support only the hypothesis H_{15}, that there is a negative relationship between information environment and change in volatility after auditor's internal control weakness report date. The finding suggests, as expected, that in a richer information environment the internal control weaknesses do not induce as big an increase in risk to the markets as in weak information environments. No support for hypothesis H_{14} or H_{16} is found.

On the contrary, the findings suggest that the systematic risk of the firms receiving an internal control weakness disclosure is not significantly affected. The empirical tests document neither a significant average change nor any association between systematic risk and information asymmetry, information environment, leverage, financial distress or management's reporting on internal controls.

To conclude the analysis, the latter part of this chapter provides a robustness test of volatility and systematic risk changes after the 10-K report filing date. The results suggest that the filing of the internal control weakness disclosure with the 10-K report does not increase the volatility or the systematic risk, but rather a decrease in the volatility is documented. This reduction is probably due to the disclosure of additional firm-specific information in the annual filing which enriches the information environment and while reducing the uncertainty in the markets the estimates of the investors are aligned. Finally, there is some evidence in Panel B of Table 39 that the agency costs of debt are positively related to the change in volatility. However, the evidence above suggests that the change in volatility after the 10-K report is rather a result of the other information contained in the annual filing than the internal control weakness information.

9 CONCLUSIONS AND IMPLICATIONS

The relevance of audit report information on the stock markets has been studied in several papers since the late 1970's. Three decades later the evidence continues to be to some extent inconclusive. The main explanation for the contradictory findings seems to be differences in statistical methods and measurements used. Still, the question receives continuous attention in the audit and financial accounting research. This proves that the underlying question is relevant from the academic as well as the practical point of view.

The fundamental question has several aspects. First, does the audit report contain any relevant information? Second, is the audit report a unique and timely source for this information, or is the equivalent or substitute information available from some other source. Third, does the information cause a revision in stock prices and when does this occur?

Most of the literature so far has studied the abnormal reaction or post announcement drift to the publication of a modified audit report or indirectly the abnormal reactions to some other announcement, while controlling for the type of information contained in the audit report that the firm previously received. This dissertation approaches the questions above by studying two types of audit reports: the going concern audit report and the internal control weakness disclosure. Limiting the sample further to first time qualified audit reports, serves to further limit the ability of the markets' to predict the content of the report.

The going concern audit report implies severe financial or operational difficulties and questions the firm's ability to survive. This report type, if any, could have a measurable effect on the stock. Meanwhile, auditor's internal control weakness disclosures have been mandated only recently in response to accounting and auditing scandals. The purpose of these disclosures is to reduce information asymmetries and conflicts of interests between insiders and outsiders. Due to their more qualitative nature (compared e.g. to the going concern audit report), internal control weaknesses are expected to be more difficult to predict using available information combined with their relationships to accounting quality and management discipline, these reports are expected to be relevant to investors.

Earlier studies have used several alternative periods to measure the stock market reaction, both the estimated announcement dates and the actual announcement dates of the annual reports, short periods and long periods. This study is the first to report results using the audit report date, i.e. the date on which the auditor signed the report, as the event date. However, due to the experimental nature of this date, all tests have also been performed using the conventional 10-K report filing date.

The selection of the audit report date is supported by two considerations. First, the audit report date is probably the first possible date on which the audit report is available to anyone but the auditor. In this study, for example, the going concern

audit report is dated on average 25 days before the 10-K report is filed. Second, studies on other audit related information announcements, e.g. auditor switches in the 8-K reports (Knechel et al. 2007), have reported significant market reactions using the date of the actual event (dismissal of the incumbent auditor - contracting of the new auditor). The problem with using the dates of the actual events, here the audit report date, is that it is not clear how this information becomes available to the non-informed trader. For this reason, it is assumed in this study that the reactions around the audit report date are a result of trading on private information. The literature on informed trading (e.g. Jayaraman 2008; Tookes 2008; Huddart et al. 2007; Frankel et al. 2004) report evidence of more informed trading on small firms, when information asymmetry is greater and information environment is poorer, and finally when the informed actors are in possession of precise information.

This dissertation suggests additionally that the market reaction to audit report information may be affected by firm specific characteristics. The literature suggests that the need for monitoring, e.g. auditing, is greater in firms with a high level of information asymmetry and conflict of interest. Following audit demand and audit fee studies that have focused on these issues, this study analyzes whether firms with different degrees of information asymmetry, information environment and agency costs of debt are associated with a different kind of stock market reaction. Chapter 2 reviews extensive literature in financial accounting and auditing that supports these expectations.

Finally, financial accounting research has found that significant and new information has the potential to either increase or reduce the uncertainty and risk associated with the firm subsequent to the information revelation. This study addresses this issue first by looking at whether the volatility and systematic risk change after the going concern audit report has been dated. The empirical examination in this dissertation is concluded by analyzing whether agency problems are related to changes in the volatility of returns and systematic risk.

The theoretical analysis in this dissertation builds on the economic framework of auditing proposed by agency theory. From this perspective, auditing is an essential foundation in monitoring the fulfilling of contracts between the management and the ownership. The agency relationship between managers and owners is associated with conflict of interests and information asymmetry and in theory auditing should help to manage these problems. Moreover, information environment, i.e. the firm's exposure to scrutiny by the authorities or analyst and media attention, and bondholder requirements, may affect the conflict of interests. Consequently, the magnitude or severity of the agency problems is expected to affect the demand for audit services and on the other hand this defines what kind of a role auditing is expected to play in monitoring the firm.

Abnormal returns, change in volatility and change in systematic risk are here used to measure whether the information in the going concern audit report and the auditors' internal control weakness disclosures affect the stock markets. There is

considerable evidence to support a correlation between stock price changes and earnings information (Ball et al. 1968; Bernard et al. 1989; Jegadeesh et al. 2006) and other financial information (Ou et al. 1989; Livnat et al. 1990; Sloan 1996). In this study, the audit report is considered to be a source of information and audit reports are thought to have the potential to change market responsiveness to earnings by adding noise or reducing the persistency of reported earnings (Choi et al. 1992).

Using data from Russell 3000 index firms listed in the U.S. this dissertation focuses on the relevance of audit opinion information using stock market reactions. U.S data is used for obvious reasons. It is the only market that has a sufficient number of going concern or internal control weakness audit reports. For example, in a recent paper by Citron et al. (2008) the authors use U.K. data from 1994 to 2000 and with similar criteria as those in this study find 102 first-time going concern audit reports. Ogneva et al. (2007) found 97 going concern opinions from the Australian market during 1995-2004. Finally, the sample used by Pucheta et al. (2004) consisted of 119 qualified audit reports in the period 1992–1995, but only 15 of these were classified as going concern. Additionally, auditor's internal control weakness disclosures are required by the Sarbanes-Oxley Act (SOX 2002) and are therefore available only for firms listed on U.S. stock exchanges.

All audit reports in the sample are dated after the events around Enron and Arthur Andersen. These events may have affected the auditors' reporting decisions and also investors' responsiveness to bad news. Thus only audit reports after those events are used.

Standardized abnormal stock returns around the alternative event dates are defined in this study as the standardized market model adjusted daily abnormal returns. The two event dates are the audit report date, i.e. the date printed on the audit report, and the 10-K report filing date. Standardized abnormal returns are analyzed in three different periods: [-1], [0] and [+1]. Also, standardized cumulative abnormal returns are analyzed in three periods: [-1,+1], [-1, 0] and [0,+1]. The change in standard deviation and the change in beta are used to measure the changes in volatility and systematic risk. The change is calculated from periods [-130, 10] and [10, 130], the audit report date or the 10-K filing date being the day [0].

Table 40 presents the hypotheses tested and the main findings of this study. Hypotheses H_1–H_4 deal with the abnormal reaction to going concern audit reports, H_5–H_8 with the abnormal reaction to internal control weakness disclosures, H_9–H_{12} with the change in volatility and systematic risk after going concern audit reports, and finally hypothesis H_{13}–H_6 with the change in volatility and systematic risk after internal control weakness disclosures. The main findings from the robustness tests using the 10-K report filing date are summarized in Table 41.

Table 40. The hypotheses and findings of this study

Hypothesis	Finding
H_1: Going concern audit reports are associated with negative abnormal stock returns	This study finds no support for H_1. There is no evidence of negative and statistically significant standardized abnormal returns around the *audit report date* (Table 5).
H_2: The information asymmetry between management and owners has a negative affect on the market reaction to going concern audit reports.	This study finds no support for H_2. There is no evidence that information asymmetry is negatively and statistically significantly related to standardized abnormal returns around the *audit report date* (Table 6–7).
H_3: The information environment of the firm has a positive affect on the market reaction to going concern audit reports.	**This study finds support for H_3.** There is evidence that information environment is positively and significantly related to standardized abnormal returns around the a*udit report date* (Table 6–7).
H_4: Agency costs of debt have a positive affect on the market reaction to going concern audit reports.	**This study finds support for H_4.** There is evidence that agency costs of debt are positively and significantly related to standardized abnormal returns around the a*udit report date* (Table 6–7).
H_5: Auditors' internal control weakness disclosures are associated with negative abnormal stock returns	This study finds no support for H_5. There is no evidence of significant negative standardized abnormal returns around the *audit report date*. On the contrary, Table 16 reports positive abnormal returns.
H_6: Information asymmetry between the management and the owners has a negative affect on the market reaction to auditors' internal control weakness disclosures.	This study finds no support for H_6. There is no evidence that information asymmetry is related to standardized abnormal returns around the *audit report date* (Table 17–18).
H_7: The information environment of the firm has a positive affect on the market reaction to auditors' internal control weakness disclosures.	This study finds no support for H_7. There is no evidence that information environment is related to standardized abnormal returns around the *audit report date* (Table 17–18).
H_8: Agency costs of debt have a positive effect on the market reaction to auditors' internal control weakness disclosures.	This study finds no support for H_7. There is no evidence that agency costs of debt are related to standardized abnormal returns around the *audit report date* (Table 17–18).

Table 40. Continued

Hypothesis	Finding
H_9: Going concern audit reports are associated with an increase in volatility and the systematic risk.	**This study finds support for H_9.** There is evidence of significant increase in systematic risk after the going concern *audit report date* (Table 26).
H_{10}: The information asymmetry between management and owners has a positive affect on the change in volatility and systematic risk after the going concern audit reports.	This study finds no support for H_{10}. There is no evidence that information asymmetry is related to the change in volatility and systematic risk after the *audit report date* (Table 27).
H_{11}: The information environment of the firm has a negative affect on the change in volatility and systematic risk after the going concern audit reports.	This study finds no support for H_{11}. There is no evidence that information environment is negatively related to the change in systematic risk after the *audit report date*. On the contrary, Table 27 indicates some support that they are positively related.
H_{12}: Agency costs of debt of a firm have a negative affect on the change in volatility and systematic risk after the going concern audit reports.	This study finds no support for H_{12}. There is no evidence that agency costs of debt are related to the change in volatility and systematic risk after the *audit report date* (Table 27).
H_{13}: Auditors' internal control weakness disclosures are associated with an increase in volatility and systematic risk.	**This study finds support for H_{13}.** There is evidence that the volatility increases significantly after the *audit report date* (Table 34).
H_{14}: The information asymmetry between management and owners has a positive affect on the change in volatility and systematic risk after auditors' internal control weakness disclosures.	This study finds no support for H_{14}. There is no evidence that information asymmetry is related to the change in volatility and systematic risk after the *audit report date* (Table 35).
H_{15}: The information environment of the firm has a negative affect on the change in volatility and systematic risk after the auditors' internal control weakness disclosures.	**This study finds support for H_{15}.** There is evidence that information environment is negatively related to the change in volatility after the *audit report date* (Table 35).
H_{16}: The agency costs of debt of the firm have a negative affect on the change in volatility and systematic risk after the auditors' internal control weakness disclosures.	This study finds no support for H_{16}. There is no evidence that agency costs of debt are related to the change in systematic risk after the *audit report date* (Table 35).

Table 41. Summary of the robustness tests.

Test	Finding
Going concern audit reports are associated with negative abnormal stock returns	There is **evidence** of negative and statistically significant standardized abnormal returns around the *10-K report filing date* (Table 10).
The information asymmetry between management and owners has a negative affect on the market reaction to going concern audit reports.	There is **evidence** that information asymmetry is negatively and statistically significantly related to standardized abnormal returns around the *10-K report filing date*. (Table 11–12)
The information environment of the firm has a positive affect on the market reaction to going concern audit reports.	There is **some evidence** that information environment is positively and significantly related to standardized abnormal returns around the *10-K report filing date* (Table 11).
Agency costs of debt have a positive affect on the market reaction to going concern audit reports.	There is no evidence that agency costs of debt are positively and significantly related to standardized abnormal returns around the *10-K report filing date* (Table 11–12).
Auditors' internal control weakness disclosures are associated with negative abnormal stock returns	There is no evidence of significant negative standardized abnormal returns around the *10-K report filing date*. On the contrary, Table 21 reports positive abnormal returns around this event date.
Information asymmetry between the management and the owners has a negative affect on the market reaction to auditors' internal control weakness disclosures.	There is no evidence that information asymmetry is related to standardized abnormal returns around the *10-K report filing date.* (Table 22–23).
The information environment of the firm has a positive affect on the market reaction to auditors' internal control weakness disclosures.	There is no evidence that information environment is positively related to standardized abnormal returns around the *10-K report filing date.* Contrary to expectations Tables 22–23 show a negative relationship.
Agency costs of debt have a positive effect on the market reaction to auditors' internal control weakness disclosures.	There is no evidence that agency costs of debt are related to standardized abnormal returns around the *10-K report filing date.* (Table 22–23).

Table 41. Continued

Test	Finding
Going concern audit reports are associated with an increase in volatility and the systematic risk.	There is **evidence** of significant increase in systematic risk after the going concern *10-K report filing date* (Table 30). Contrary to expectations the volatility decreases.
The information asymmetry between management and owners has a positive affect on the change in volatility and systematic risk after the going concern audit reports.	There is no evidence that information asymmetry is related to the change in volatility and systematic risk after the *10-K report filing date*. (Table 31).
The information environment of the firm has a negative affect on the change in volatility and systematic risk after the going concern audit reports.	There is no evidence that information environment is negatively related to the change in volatility and systematic risk after the *10-K report filing date* (Table 31).
Agency costs of debt of a firm have a negative affect on the change in volatility and systematic risk after the going concern audit reports.	There is no evidence that agency costs of debt are related to the change in volatility and systematic risk after the *10-K report filing date* (Table 31).
Auditors' internal control weakness disclosures are associated with an increase in volatility and systematic risk.	There is no evidence that volatility and systematic risk increases significantly after the *10-K report filing date*. On the contrary Table 38 reports a volatility reduction after this event date.
The information asymmetry between management and owners has a positive affect on the change in volatility and systematic risk after auditors' internal control weakness disclosures.	There is no evidence that information asymmetry is related to the change in volatility and systematic risk after the *10-K report filing date* (Table 39).
The information environment of the firm has a negative affect on the change in volatility and systematic risk after the auditors' internal control weakness disclosures.	There is no evidence that information environment is negatively related to the change in volatility and systematic risk after the *10-K report filing date* (Table 39).
The agency costs of debt of the firm have a negative affect on the change in volatility and systematic risk after the auditors' internal control weakness disclosures.	There is no evidence that agency costs of debt are negatively related to the change in volatility and systematic risk after *10-K report filing date*. On the contrary, Table 39 reports some evidence of a positive effect.

Going concern audit reports

The first empirical analysis of this study focuses on the event date abnormal returns to going concern audit report announcements. As mentioned above, in this study two alternative event dates are used, (i) the audit report date and (ii) as a test for robustness the 10-K report filing date.

The empirical results suggest first that in the sample there are no negative abnormal stock returns around the going concern audit report date. Further analysis indicates, however, that the firm's information environment and the agency costs of debt have a significant positive effect on abnormal returns. This suggests, as hypothesized, that for firms with a rich information environment, e.g. media coverage, analyst following etc., and debt imposed management discipline have significantly less negative abnormal returns. The going concern problems are not as surprising for the investors of these firms, or alternatively, as suggested by the informed trading literature, the use of private information in stock market trading is more difficult in these firms. Moreover, financial distress reported the previous year also has an affect on abnormal returns. Abnormal returns are less negative for firms reporting more distress, indicating that distress reduces the surprise of the going concern audit report.

Additional tests using the 10-K report filing date indicate that around the 10-K date there is a significant negative abnormal reaction to the going concern audit report. Furthermore, the information asymmetry and information environment of the firm affect the abnormal returns as expected.

This dissertation also examines the effect of going concern audit report announcements on the change in volatility and systematic risk of the stock. The purpose of this is to investigate also using additional measures whether the going concern audit reports have information content. Abnormal stock reactions can be a result of changes in estimates of future cash flows or the riskiness of the firm. By estimating the change in systematic risk around the going concern audit report the risk effect of the audit report is investigated. Volatility measures the uncertainty or the spread of the stock price estimates.

The empirical evidence suggests that the systematic risk increases significantly after the audit report date. This implies that the going concern audit report increases the riskiness of the firm. Furthermore, for firms with richer information environment the systematic risk is suggested to increase more. There seems to be a contradiction in the effect of information environment on abnormal returns and systematic risk. This contradiction indicates that the richer information environment can be used to predict the future cash flows of the firm, i.e. the quantitative estimates, but the risk effect of the going concern audit report is more difficult to mitigate even in a richer information environment.

The volatility and systematic risk analysis is complemented by analyzing changes after the 10-K report. The evidence implies that volatility decreases and systemat-

ic risk increases after the 10-K report announcement. This suggests that volatility reacts to the annual report information as a whole rather than to the audit report information because uncertainties and risks are likely to be reduced when annual reports are filed, but systematic risk in suggested to have increased due to the audit report.

Auditor's internal control weakness disclosures

The second types of audit reports used in this dissertation are the auditors' internal control weakness disclosures. The purpose of this dissertation is to study abnormal stock returns and volatility and systematic risk changes around the disclosures of such reports.

First, the evidence from the analysis of the abnormal returns indicates, contrary to expectations, that around the audit report date there are no negative abnormal returns. Quite the contrary, the evidence indicates positive reactions. The firm specific characteristics used in this dissertation have no affect on the abnormal returns. It is difficult to find explanations for the significant positive abnormal returns over a long period, as indicated by Figure 2. One possible reason is that because the firms with internal control weaknesses tend to be, according to the literature, smaller, and are growing rapidly, they have ongoing restructurings or organizational changes. Hence the future cash flow generating ability of the firms increases constantly and therefore abnormal returns for these firms are positive.

Around the 10-K report date the abnormal returns are also significantly positive. Evidence suggests, however, that around the 10-K date the information environment also has a negative affect on the abnormal returns. This could indicate that internal control weaknesses are more difficult to anticipate using available information and therefore the reaction is more negative for the firms with richer information environments because they are generally expected to be more stable and predictable. Finally, contradictory management and auditor assessments of internal control effectiveness have a significant negative impact on abnormal returns.

The volatility and systematic risk analysis reveals that after the internal control weakness disclosure volatility increases significantly. This suggests that even if the abnormal returns, contrary to expectations, are positive, the uncertainty and the spread of expectations has increased significantly. This change could derive from internal control weaknesses. Moreover, information environment is negatively related to the change in volatility, as expected. The uncertainty increases less for firms with more information available.

All in all, internal control weakness disclosures do not seem to have a negative affect on abnormal returns as expected. However, internal control weaknesses significantly increase the volatility of the stock returns and the spread of the expectations between investors.

Overall conclusion

In general, the results of this dissertation suggest to some extent that audit report information may be used in stock market trades around the audit report date. There is no direct evidence of this, but the relationship between information environment, agency costs of debt, and abnormal returns around the going concern audit report suggests that where public attention and management discipline is expected to be lower, private information is used more. This is consistent with the findings from the informed trading literature and with the findings of e.g. Carter et al. (1999) and Knechel et al. (2007) that the actual date of the event may be relevant, rather than the date of the announcement. However, in this dissertation a significant negative abnormal reaction is documented around the date of the public announcement. It is important to note that if there is a reaction due to the use of private information around the report date, there may also be a reaction around the public announcement. This is conditional on the assumption that investors using private information must avoid getting caught and therefore may not be able to take full advantage of the private information.

The findings of this dissertation also confirm that information environment and agency costs of debt have a significant impact on the relevance of audit report information, both going concern and internal control weakness. Public attention, increased quantity and quality of information, and management discipline are factors that are likely to affect the relevance of the information.

In light of the findings of this dissertation, audit reports are suggested to have increased the systematic risk of the stock (going concern audit reports) and the volatility of the returns (internal control weaknesses). This is also an important extension to the dissertation, because the abnormal stock returns may be a result of revisions in future cash flow estimates, revisions in the riskiness of the firm, or of both.

These findings confirm the theoretical framework used in this study. According to the existing theory, the auditing of financial statements increases the informativeness and perceived quality of the financial statements, and the audit report, when qualified, reflects the auditor's opinion of the firm's condition taking account of information that is not available for outsiders. In addition, the empirical evidence in this dissertation also confirms the effects of firm specific characteristics on the relevance of auditing.

Implications

The results of this dissertation have implications for interested parties of the firm, financial markets, auditors and researchers. From the financial markets' point of view in particular, the going concern audit report but also to some extent the internal control weakness disclosure seem to be relevant sources of information. In

particular, where the qualified audit report is not expected, the information is indeed relevant.

From the stock market regulators' point of view the suggestion is interesting that for firms with specific characteristics the stock prices may be moving on the date of the audit report because of private information. The results of the audits are generally announced publicly at a later point in time in the 10-K filing. The evidence indicates that in smaller listed firms with poorer information environment the abnormal reaction is more negative. These firms are not in the primary focus of the SEC, for example, and the fact that they are monitored less closely may enable the use of private information in trading the stock.

For auditors this dissertation confirms that firm specific features affecting the conflict of interests are associated with the relevance of the audit report information, if not the relevance of the whole auditing process. This information can be essential in planning the audit engagement and in making reporting decisions.

Finally, the implications for researchers interested in financial markets and audit reporting, or any audit issue for that matter, is that when planning an event study the date of the actual event is applicable as the first day of trade. As this study and Knechel et al. (2007) suggest, trade may take place earlier than the traditional event dates, i.e. the 10-K or 8-K filing dates. Equally important for audit research is the evidence of this study on the relationship between the information environment, agency costs of debt, and reactions to going concern audit reports or internal control weakness disclosures. These factors should be taken into account when studying the relationship between the auditor and the firm or the relevance of auditing to the shareholders.

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