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The Effects of Auditor Alumni Affiliation in Top Management and on the Audit Committee

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Abstract

This thesis examines the effects of auditor alumni affiliation on audit quality, by using a new proxy in the field of auditor alumni affiliation studies: committing a type II error regarding the issuance of a going concern opinion. Both auditor alumni affiliation in top management and on the audit committee are tested. In addition, the effects of an affiliated chair on the audit committee are examined. The results show that auditor alumni affiliation has no significant effect on audit quality. This applies for both auditor alumni affiliation in top management and auditor alumni affiliation on the audit committee. Furthermore, the results show that the effect of auditor alumni affiliation on audit quality is not significantly stronger when the affiliated audit committee member is the chair of the audit committee.

Key words: affiliation, alumni affiliation, auditor alumni affiliation, audit quality, auditor independence, going concern opinion, GCO, type II error

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Chapter 1: Introduction

It is common for employees in the field of public accounting to switch professions and choose a job in a field outside public accounting. More than half the people who initially started working for an external auditing company choose to leave the profession at a certain point in their career (Arlinghaus & Cashell, 2001). A substantial amount of these alumni ends up filling a position in a company's top management or becoming a member on one of their boards. In 2017, 61% of the audit committee chair positions and 64% of the positions of CFO in the United Kingdom were employed by someone who had previously worked for an audit firm (Smith, 2007). The reason audit alumni are chosen to work in top management or as a member of a board is sensible, as 'financial expertise' is one of the most important requirements for these positions. Audit alumni therefore have the required experience and seem to be the perfect candidates.

However, hiring audit alumni for such crucial positions can lead to auditor alumni affiliation: situations occur where managers or board members used to work for the incumbent external auditor. Auditor alumni affiliation does not have to be a 'bad' thing, as long as both the employees and the external auditor remain independent and professional. However, regulators and stakeholders have raised their concerns as auditor alumni affiliation could affect auditor independence and audit quality (Jones, 2012). Because of the auditing scandals from the early 2000s, audit quality became a focus for the public and therefore a more sensitive subject than ever. It is necessary for regulators and stakeholders to investigate the causes and effects of auditor alumni affiliation and, if required, make suitable regulation regarding this subject.

Regarding auditor alumni affiliation, some positions within a company a more crucial than others. One of these positions is (a member or chairman of) the audit committee. Since 2002, the Sarbanes-Oxley Act (SOX) mandates audit committees to be fully independent with respect to the related company. Nonetheless, the question remains if this is truly the case, since members of the audit committee are usually selected and paid by the company's board or top management. Because members of the audit committee are responsible for the selection of the external auditor, however, they fill a critical position and therefore the (in)dependence of the audit committee with respect to the subject of auditor alumni affiliation should be taken in mind and be evaluated. Next to the audit committee, top management also fulfills a crucial role regarding this subject. Although top management usually does not select the external auditor, in most cases they do have a significant influence on the selection process and the

ultimate decision (Dhaliwal, Lamoreaux, Lennox, & Mauler, 2015). Next to that, the agency theory explains that the interests of top management and the shareholders of the company may not be aligned and top management may pursue their own interests rather than the interests of the shareholders. In this situation, top management may not be entirely independent regarding the selection of the external auditor and the process of the external audit.

Thus, auditor alumni affiliation in both the audit committee and in top management could impair auditor independence and audit quality. It is therefore essential to investigate if and how alumni affiliation impairs these concepts. In this way, companies and their shareholders will get a better understanding of the effects of auditor alumni affiliation and regulators can evaluate existing standards and regulations and, if necessary, make new ones. Existing literature focuses mainly on auditor alumni affiliation in top management and not on the audit committee. However, investigating the effects of auditor alumni affiliation in both these positions will reveal the potential differences driven by different incentives. Next to that, a suitable proxy for auditor independence and audit quality is hard to find resulting in studies done with less suitable proxies, which can negatively affect the results. This thesis investigates the effects of auditor alumni affiliation in both top management and on the audit committee and examines the potential differences. Next to that, a suitable proxy for audit quality will be used, which is never used before within the field of auditor alumni affiliation studies: committing a type II error regarding going-concern opinions (GCO's). This thesis will investigate this with the following research question:

> *''Does auditor alumni affiliation in top management and auditor alumni affiliation on the audit committee affect audit quality?''*

The effect of auditor alumni affiliation on the chance of making a type II error when issuing GCO's is tested by performing a logistic regression. Next to that, additional analyses are performed investigating the effect of affiliated audit committee chairs on audit quality. A sample of 208 bankrupt companies, over a time period of 2003 till 2019, is used to perform these regressions. The results show that auditor alumni affiliation has no significant effect on the chance of committing type II errors, thus no effect on audit quality. Having unaffiliated executives with auditing experience, however, does have a significant effect on audit quality: when the CEO and/or CFO has auditing experience (with a Big Four company) and did not work for the incumbent external auditor, the odds of GCO issuance increase and the odds of

making a type II error decrease. In short, having unaffiliated executives with auditing experience increases the audit quality. Further results suggest the effect of auditor alumni affiliation on audit quality is not significantly stronger when the affiliated audit committee member is the chair of the audit committee.

The results of this paper suggest that auditor alumni affiliation, both in top management and on the audit committee, is not harmful for the audit quality or auditor independence. This could be the result of enhanced regulation on this topic by the Sarbanes-Oxley Act since 2002. This thesis contributes to the ongoing debate on auditor alumni affiliation, implying that auditor alumni affiliation is not as bad as some stakeholders may think, especially because of the existing regulation. Next to that, it expands the relatively small amount of prior literature on this topic, introducing a new proxy to measure audit quality (within the field of auditor alumni affiliation studies).

This research has a few limitations. The first one is the relatively small sample of 208 companies. Although the sample size is comparable to other studies focusing on type II errors, it could still influence the significance of the results. Another limitation is the accuracy of the affiliation data. Both existing databases and handcollection (with proxy statements) are used to make sure no affiliation data would be left out. However, some affiliation data could still be missing. The last limitation is that the results of this thesis only apply to the United States, since a sample of bankrupt US companies is used. No conclusions or implications can therefore be drawn for other parts of the world, also because of different regulations, cultures and audit practices.

Chapter 2: Literature Review

This chapter provides a literature review on the most important concepts regarding the topic of this thesis. Section 2.1 describes the different kinds of alumni affiliation that occur. Section 2.2 explains the different theories and views regarding the causes and effects of auditor alumni affiliation. Section 2.3 explains relevant SOX regulation and the effect SOX has on auditor alumni affiliation in both top management and on the audit committee. Section 2.4 discusses why it is important that especially auditor alumni affiliation in top management and auditor alumni affiliation on the audit committee are studied. Section 2.5 discusses the concepts of auditor independence and audit quality and the different measurements used with respect to these subjects. And section 2.6 provides a short overview of findings from prior literature.

2.1 Types of auditor alumni affiliation

Lennox (2005) describes three kinds of auditor alumni affiliation: employment affiliations, alma mater affiliations and chance affiliations. The first one involves an affiliation due to the fact that an employee of an audit firm leaves the firm and subsequently joins a company who is a client of the same audit firm. For example: an employee of KPMG leaves the audit firm and directly joins company X as a CFO. However, the external auditor of company X is also KPMG. In this way, the CFO of company X and the external auditor of company X are affiliated. This type of affiliation is also called the 'revolving-door' affiliation and is prohibited for certain executives since 2002: an audit firm may not perform an external audit for a company if executives holding accounting or finance positions of that company have worked for the audit firm within the preceding year. In this way, regulators hope to reduce the social ties between these executives and the external auditor and thereby prevent impairment of professional skepticism, auditor independence and audit quality (SOX, 2002). See section 2.3 for a more comprehensive explanation regarding SOX.

The second one, alma mater affiliation, occurs when an employee of an audit firm leaves the firm, joins a company who is audited by another audit firm, but the employee persuades the company to hire the audit firm where he/she worked for. To stick with the same example: an employee of KPMG leaves the audit firm and subsequently joins company X as a CFO. The external auditor of company X is Deloitte. Then, the employee persuades company X to hire KPMG instead. If company X hires KPMG, the CFO of company X and the external auditor of company X are, again, affiliated.

The most common type of auditor alumni affiliation, according to the research of Lennox in 2005, is chance affiliation. Chance affiliations occur randomly: there is no underlying intention or reason for the affiliation. In our example, chance affiliation occurs when the employee of KPMG leaves the audit firm. Ten years later, the employee becomes CFO at company X and, by chance, company X is audited by KPMG. In this way, the CFO of company X and the external auditor of company X are affiliated, but this was not intentional. The other types of affiliation, however, are most of the time intentional: employment affiliation mostly occurs when company X wants to hire a member of the external auditors' team because of, for example, their financial expertise or skills. Alma mater affiliation occurs when the employee of company X wants to hire their former employer as external auditor because, for example, they want to do their former employer a favor or they are genuinely

convinced their former employer is a better external auditor than the incumbent external auditor.

The Independence Standards Board (ISB) (1999) enumerates three concerns of impaired audit quality, related to employment affiliation:

1. The first one can occur when the employee still works for the audit firm but has received an offer from the audit client. If this offer is worthwhile, it is conceivable the employee (and the rest of the audit team) will be encouraged not to confront the audit client with problems discovered during the audit (as they are afraid the audit client will withdraw the offer).
2. The second concern and third concern can occur when the employee now works for the audit client. Due to the social relationships the employee has with the audit firm, and especially the audit team, the audit team might be unwilling to question the assertions of the employee.
3. The third concern is about the familiarity of the employee with the audit procedures of the audit firm. Due to this familiarity, the employee could easily circumvent essential parts of these audit procedures, resulting in undiscovered problems.

Although the ISB raised those concerns specifically considering situations where an employee of the audit firm leaves the firm to work for an audit client (employment affiliation), the second and third concern are also applicable in situations of alma mater affiliation and even in situations of chance affiliation (Lennox, 2005). Therefore, I will not focus on the different types of auditor alumni affiliation, as every type of affiliation can lead to the same effects.

2.2 Theories on auditor alumni affiliation

2.2.1 Social identity theory and organizational identification

The social identity theory is developed within the social psychology literature, first named by researchers Tajfel and Turner in 1979. The theory suggests that individuals form an image of themselves by classifying themselves into various groups, such as male/female, supporter of a sports team, or being a student. The individuals in one group seek positive aspects of the group in which they belong and negative aspects of groups in which they do not belong. By making these comparisons, the self-image and self-esteem of the individuals is enhanced.

Organizational identification can be seen as a specific form of social identification, in which the individual forms a self-image based on their membership in a particular organization (Mael & Ashforth, 1992). Organizational identification has similarities with organizational commitment, organizational loyalty and organizational satisfaction, but it is definitely not the same. According to Mael and Ashforth, organizational identification is related to a specific organization, while the other constructs (loyalty, commitment…) are a characteristic of the individual and can be related to other organizations as well. If an individual identifies himself or herself with an organization, the individual would experience a physic loss if they would leave the organization. However, it is possible to identify with multiple groups or organizations concurrently and also after the individual left the organization (Mael & Ashforth, 1992).

Iyer, Bamber and Barefield (1997) where the first ones who applied the social identity theory and organizational identification to auditor alumni affiliation. They introduced a model to measure the organizational identification of employees who left the firm and they investigated the effect of organizational identification on the alumni's inclination to benefit their former firm. Their results suggest that employees who left the audit firm are, due to organizational identification, still inclined to benefit the audit firm by, for example, hiring them as an external auditor.

In line with Iyer et al., Christensen, Omer, Shelley, & Wong (2019) find a relation between auditor alumni affiliation on the audit committee and the hiring of affiliated external auditors: if any of the members on the audit committee is affiliated with an external auditor by prior employment, the affiliated auditor is hired more. Next to that, Christensen et al. state that auditor alumni affiliation also improves the audit quality, as social identity theory suggests that affiliated members of the audit committee can use their identification and shared knowledge with the external auditor to improve the process and communication. However, Bhattacharjee & Brown (2018) suggest and find impaired audit quality and auditor independence due to auditor alumni affiliation, explained by social identity theory. Because individuals will seek positive in-group characteristics and negative out-group characteristics to enhance their self-image, it is feasible an affiliated external auditor will have more trust in affiliated managers' work and assertions and this can lead to an (unjustified) lenient approach of the auditor during the evaluation. Martinov-Bennie, Cohen, & Simnett (2011) adopt a different approach. According to them, social identity theory suggests that when a manager (in this research: a CFO) is an ex-auditor, the external auditor will be more independent and skeptic, because they will identify more with the client and their profession if the CFO is an

ex-auditor (as opposed to when the CFO does not have any auditing background). Because the external auditor will identify more with his/her profession, he/she is more likely to adapt the profession's norms and values and, therefore, will be more skeptical and independent. However, the researchers did not find any supportive evidence for this theory.

As seen from previous studies explained in this section, social identity theory and organizational identification can both improve and impair audit quality and auditor independence, depending on how these theories are explained. This indicates how ideas and evidence on the topic of auditor alumni affiliation are mixed and how important it is to investigate the relation between auditor alumni affiliation and audit quality further.

2.2.2 Cognitive proximity and social proximity

Related to the subjects of social identification theory and organizational identification, are cognitive proximity and social proximity. Cognitive proximity means that two actors are sharing a common knowledge. Social proximity means that two actors have socially embedded relations (Ittonen, Myllymäki, & Tronnes, 2019). Cognitive proximity can be used as an advantage in the case of auditor alumni affiliation: because the external auditor and the employee of the audit client share a same knowledge base, they will understand each other better, can meet each other's expectations and communication will be smoother. Social proximity, however, is a two-edged sword: although having a socially embedded relation can help by, for example, sharing the same values and smoother communication, most of the time social proximity has negative effects. In the case of auditor alumni affiliation, social proximity (and also organizational identification) can lead to impaired auditor skepticism, auditor independence and audit quality. Based on this theory, Ittonen et al. (2019) found that having an affiliated member in the audit committee leads to lower audit fees, higher proportions of non-audit fees and, most importantly, these associations are stronger in the context of earnings management.

2.2.3 Engagement risk theory

During the client acceptance phase, the auditor needs to determine if they want to audit the particular client for the coming years or if they will not. The acceptance of the client depends on the profitability of it. If the auditor will most likely suffer a loss from the engagement, due to the client-related risks, the auditor will not accept the client. To evaluate

the client-related risks and make a decision on the future profitability, the audit firm evaluates three risks: the client's business risk (i.e. the client's financial condition), the audit risk (i.e. the inherent risk and control risk) and the auditor's business risk (the chance the auditor will suffer a loss from the engagement) (Johnstone, 2000). This evaluation is also used for determining the height of the audit fees: if the total of these three kind of risks is higher, the auditor has to perform more audit procedures to ensure that he can give an appropriate evaluation on the correctness of the financial statements of the client. Also, if the engagement has more chance to end up in a loss for the auditor, the auditor tries to compensate it with higher audit fees.

Basioudis (2007) applies this engagement risk theory to auditor alumni affiliation in top management. According to him, audit firms actively prepare employees to work for existing and prospective clients. By this 'outplacement' of employees, audit firms seek to decrease client-related risks and, thereby, decrease the chance of suffering a loss from the engagement. Because auditor alumni possess financial and technical knowledge and expertise, they are more suited than non-auditor alumni to serve a position in top management. Because of this, audit firms will most likely think the financial statements are of better quality and the client-related risks are reduced, because multiple studies showed that audit firms reduce their audit fees if a former employee of the audit firm now works at the audit client. Based on this theory, Basioudis investigates the relation between auditor alumni affiliation and the height of the audit fees. The results, indeed, show a negative association: if at least one director is affiliated with the incumbent auditor, the audit fees are lower. Basioudis explains this as a positive effect, as he is convinced the audit fees are lower because of the enhanced financial statements and reduced engagement risk. However, I think he needs to be aware of the negative effects of social identity theory: it could well be the audit firm wants to do the director a favor by offering lower audit fees to the audit client. Next to that, the audit firm could be less skeptical and independent, resulting in performing less audit procedures than should have been performed. Significant and material mistakes can remain unseen if the audit firm does less than it is supposed to do. Ittonen et al. (2019) and Menon & Williams (2004) also warn for these kind of pitfalls.

2.3 Sarbanes Oxley Act: section 301 (AC responsibility) & 206 (revolving-door)

Due to the corporate- and accounting scandals in the early 2000's, such as Enron and Worldcom, new regulation had to be implemented to enhance the audit quality and auditor

independence and to reinforce public trust in the accounting world. In 2002, The United States of America introduced a new federal law called the Sarbanes-Oxley Act, named after the two major bill sponsors. This law incorporated rules on multiple segments of corporate governance and public accounting. Regarding this thesis, two sections of the Act are of major importance: section 301 and section 206.

Section 301 gives the audit committee the full responsibility on everything that has to do with the external auditor. Before SOX, it was not uncommon that the management of a firm chose the external auditor and determined their compensation. However, because the management of a firm can have different incentives than its shareholders and these incentives can be conflicting, it would not make sense to leave such a delicate subject, where independency is one of the most important factors, to the management of the firm. Therefore, section 301 of SOX mandates that the audit committee has the full responsibility on the appointment, compensation and oversight of any registered public accounting firm who issue an audit report or provide other related work. Also, the public accounting firm has to report directly to the audit committee. Next to that, section 301 requires the members of the audit committee to also be on the board of directors of the same firm, or, if the member is not on the board of directors, to be fully independent otherwise. This means that members of the audit committee may not accept compensatory fees from the firm, except in their role of audit committee member. Next to that, they may not be an affiliated person of the firm or any of its subsidiaries (SOX, 2002).

Section 206 is about revolving door practices, explained in section 2.1 of this thesis. This section prohibits a public accounting firm to perform audit services for clients with employers who also worked for the public accounting firm over the past year. To be more precise: if any of the client's chief executive officer, controller, chief financial officer, chief accounting officer or other person who serves an equivalent position, also worked for the public accounting firm in the past year, the public accounting firm is not allowed to perform audit services for the client (SOX, 2002). This is also called the ''one-year cooling off period''. This section of SOX instantly prohibits one of the three forms of auditor alumni affiliation: employment affiliation. Regulators try to reduce the (negative) effects of auditor alumni affiliation with this rule. However, other forms of auditor alumni affiliation can still have the same effects and therefore, it is important to also pay attention to alma mater affiliations and chance affiliations (Lennox, 2005).

The Sarbanes-Oxley Act imposes rules that significantly change the field of auditor alumni affiliation. Next to that, not much auditor alumni affiliation research has been done in

the period after SOX; only three studies based on archival data from the period after SOX have been conducted (see Table 1). Apart from that, three experiments related to auditor alumni affiliation are executed in the period after SOX. Carcello, Hermanson and Ye (2011) analyzed more than 250 studies concerning corporate governance and accounting/auditing quality and also call for more research on the post-Sox period. Therefore, in this thesis, I will focus specifically on the post-SOX period, to examine potential effects of auditor alumni affiliation within this new regulation and to make the research as relevant as possible by focusing on the last 16 years.

2.4 Importance of audit committee and top management

2.4.1 Top management

The relation between the management of a company and its shareholders is a well-discussed and well-written subject. In listed companies, the ownership and the management of a firm are separated and this separation can cause problems. Jensen and Meckling were the first researchers who described this in 1976, with the principal-agent theory. This theory explains that the agent (in this case: the management of the firm) has to perform in the best interests of the principal (in this case: the shareholders of the firm). However, the agent has its own interests, which conflict with the interests of the principal. Due to information asymmetry, it is possible for the agent to act in its own interests without the principal knowing it (on time). In this way, management of a company could, for example, engage in earnings management to get performance-based compensation while the actual performance is much worse. Because management has the incentives to manipulate financial reports, they also have an incentive to hire an affiliated external auditor. If (employees in) top management and the external auditor are familiar, the social ties and organizational identification could result in impaired auditor independence and impaired audit quality. Affiliated external auditors are more likely to not report certain issues with respect to the financial reports or they will perform less audit procedures, in line with the engagement risk theory, and therefore will not discover these problems.

Since 2002, top management may no longer appoint the external auditor. This would eliminate the risk of management hiring an affiliated external auditor to benefit themselves. However, the risk of having an affiliated external auditor by chance who will benefit management, is still there. Next to that, even if management is no longer allowed to appoint the external auditor, they still have a significant influence on the selection and appointment.

In many cases, top management advises the audit committee or makes recommendations for them. Sometimes, top management makes the Request for Proposal and in some cases they even make the selection decision, with the (perfunctory) approval of the audit committee (Dhaliwal et al., 2015).

Because the management of a firm may pursue their own incentives and because top management still has a significant influence on the appointment process of the external auditor, it is important to investigate the effects of auditor alumni affiliation within top management. To do that, I will focus on the CEO and CFO as these positions belong to the most important ones in a company's top management.

2.4.2 Audit committee members

As explained in section 2.3, section 301 of SOX gives the audit committee full responsibility on the appointment, compensation and oversight of the external auditor. Next to that, the members of the audit committee also need to be a member on the board of directors or –when they are not a member on the BoD- they have to be independent with respect to the firm. Their independence with respect to the firm and full responsibility with respect to every element regarding the external auditor, would suggest that auditor alumni affiliation will not have negative effects with respect to the auditor independence or audit quality: although members of the audit committee are affiliated with the external auditor, they do not have incentives to make the firm look better and manipulate figures, as top management does have. However, audit committees are also responsible for the oversight of the financial reporting process of the company. If the members on the audit committee did not execute this task sufficiently, it would be in their benefit to appoint an external auditor they know and have social ties with. In this way, the social ties between the audit committee and the external auditor could lead to reduced auditor independence and audit quality by not addressing the poor financial reporting quality. All this in order to avoid that the audit committee will be put in a bad light.

Next to that, despite the imposed regulations with respect to independence and although they may appear independent, audit committee members can still be not independent in fact. The influence of top management, especially when top management is involved in the board selection process, can result in reduced independence of audit committee members. Carcello, Neal, Palmrose, and Scholz (2011) found that, even after the implementation of SOX in 2002, the CEO still had a significant influence on the selection process of the audit

committee, which resulted in impaired audit committee independence through more restatements.

Because audit committee members are not always fully independent, and because they do have incentives to appoint affiliated external auditors and to make themselves look better, it is critical to also investigate the effects of auditor alumni affiliation on the audit committee. Although auditor alumni affiliation within top management and auditor alumni affiliation on the audit committee both can have effects on the audit quality, there could be differences due to different incentives. Therefore, it is interesting to examine if there are any differences between these two groups.

2.5 Proxies for auditor independence and audit quality

Regulators are concerned about auditor alumni affiliation, mostly because it can affect the audit quality (ISB, 1999). Audit quality can be defined as the joint probability that an issue in the financial reports is discovered and reported by the auditor (DeAngelo, 1981). Reporting the issue is as important as discovering the issue. Auditor independence is therefore strongly related to audit quality and this makes it necessary to also look at auditor independence. Due to the audit- and corporate governance scandals in the early 2000's, audit quality has become an even more important issue. Not only the level of audit quality itself, but the perceived audit quality and auditor independence for the public became a sensitive and crucial subject. It is therefore necessary to investigate the effects of auditor alumni affiliation on these two concepts. However, audit quality and auditor independence are both difficult to operationalize. Prior studies that investigated the relation between auditor alumni affiliation and audit quality have incorporated a wide range of measurements for audit quality and auditor independence. For example, the propensity of issuing a clean audit opinion (Lennox, 2005), the level of audit fees (Basioudis, 2007; Christensen et al., 2019; Ittonen et al., 2015), the level of non-audit services fees (NAS fees) (Ittonen et al., 2019; Naiker, Sharma, and Sharma, 2013; Ye, Carson, and Simnett, 2011) the level of abnormal accruals (Geiger, North, & O'Connell, 2005; Menon & Williams, 2004), the propensity of issuing a going concern opinion (Dhaliwal et al., 2015; Ye et al., 2011), the likelihood of just meeting earnings forecasts (Dhaliwal et al., 2015), restatements (Christensen et al., 2019), or late fillings of material weaknesses (Christensen et al., 2019) (see Table 1).

For simplicity and relevance, I will evaluate the most recent used proxies, incorporated by studies using a sample from the period after SOX. Looking at the three archival studies

done with a post-SOX sample, it is worth mentioning two of the three studies use the level of NAS fees as one of their proxies for audit quality/auditor independence (Ittonen et al., 2015; Naiker et al., 2013). Further, two studies use the level of audit fees as (another) proxy (Christensen et al., 2019; Ittonen et al., 2015;) and one study uses restatements and late fillings of material weaknesses as a proxy (Christensen et al., 2019).

I believe the use of audit fees or NAS fees as a proxy for audit quality is problematic as the results cannot be unambiguous. Lower audit fees in situations of an external audit with an affiliated external auditor can be a sign of enhanced communication and synergies between the firm and the external auditor. Because of this, the external audit will be more efficient and audit fees can be reduced. On the other hand, lower audit fees can also be a result of decreased effort and performing less audit procedures by the auditor because the auditor wants to do the affiliated employee a favor or is biased and estimates the financial reporting quality higher than it actually is. The same goes for NAS fees: a high level of NAS fees could be a result of the enhanced synergies and communication on the external audit. The firm and the affiliated external auditor want to acquire economies of scale by letting the same audit firm help with other aspects of the company, next to the external audit. However, a high level of NAS fees can also be an indication of a dominant negotiation position of the external auditor or it can be that the affiliated employee wants to do the external auditor a favor by providing more work opportunities (Ittonen et al., 2015; Menon & Williams, 2004) . Based on this argumentation, I am convinced audit fees and NAS fees are not a suitable proxy for audit quality or auditor independence.

Using restatements as a proxy for audit quality or auditor independence is also problematic as these restatements can also be done after the external auditor has discovered a problem. In this case, it is not the auditor's fault, but the company's. The propensity of issuing a going concern opinion is more suited: this proxy is unambiguous and operationalizes both audit quality and auditor independence (Lennox, 2005; Dhaliwal et al., 2015; Ye et al., 2011). However, the propensity of issuing a GCO does not actually show the (result of) the impaired auditor independence and audit quality: it only determines if a GCO should have been given based on financial indicators of the firms. If the firms that should have gotten a GCO based on their financial performance, do not go bankrupt in the end, no harm is caused. The external auditor was right to not give a GCO, regardless of which reasons he had.

Because this proxy does not actually show the results, I will use a different proxy: committing a type II error. If a firm that does not receive a GCO ultimately goes bankrupt, the external auditor commits a type II error (a false negative): he should have given the GCO, but

did not do it, and now the firm went bankrupt. If auditor alumni affiliation reduces auditor independence and audit quality, I expect that affiliated external auditors will be more likely to commit a type II error than non-affiliated external auditors.

Table 1: Literature review

Authors (YEAR)	Sample period	Independent variable	Dependent variable	Data source	Journal	Top management, AC or both	Title	Audit quality impaired or improved?
Lennox (2005)	1995-1998	Dummy variable for executive affiliation.	Dummy variable for unfavorable audit opinion.	Compustat, Edgar, 10-K fillings, Dun & Bradstreet	JAE	Top management.	Audit quality and executive officers' affiliations with CPA firms	Impaired
Basioudis (2007)	1996/1997	Dummy variables for executive affiliation, non-executive affiliation and top-executive affiliation.	Natural logarithm of audit fees.	ICAEW, PWC Corporate Register, One-Source, Fame.	JBFA	Top management.	Auditor's Engagement Risk and Audit Fees: The Role of Audit Firm Alumni	N/A
Finley et al. (2019)	1990-2013	Dummy variables for executive affiliation	Hazard rate; likelihood of an executive change or an auditor change in the year of hiring.	BoardEx, Compustat	CAR	Top management.	Employee Movements from Audit Firms to Audit Clients	Not sure
Menon & Williams (2004)	1998/1999	(1) Dummy variable for executive employment affiliation. (2) Dummy variables for affiliation of financial officer or AC member.	(1) Proxies for abnormal accruals. (2) Difference between abnormal accruals of company with affiliation and matched company without affiliation.	Compustat, Compact Disclosure, SEC fillings	AR	Top management and AC	Former Audit Partners and Abnormal Accruals	Impaired (earnings management)
Dhaliwal et al. (2015)	1995-2009	(1) Dummy variables for executive affiliation (2) Dummy variable for post-sox observations	(1) Dummy variable for GCO. (2) Dummy variable for just meeting earnings forecast.	Auditor-Trak, Audit Analytics, 10-k fillings and proxy statements	CAR	Top management, moderating effect independence AC	Management Influence on Auditor Selection and Subsequent Impairments of Auditor Independence during the Post-SOX Period	No effect
Geiger et al. (2005)	1989 – 1999	Variables for affiliation and audit experience without affiliation.	Increased accounting accruals, based on the Jones	Dow Jones Interactive	JAAF	Top management	The Auditor-to-Client Revolving Door and	No effect

			model (proxy for earnings management)	database, Compustat,			Earnings Management	
Ye et al. (2011)	2002	(1) Dummy variable for BoD affiliation (2) Interaction effect of feeratio (NAS to total fees paid to auditor) and Alumni	(1) Level of NAS fees (2) Propensity of issuing GCO in financially distressed sample	Audit Opinions Database, annual reports (10-k reports)	AJPT	Directors (excluding AC)	Threats to Auditor Independence: The Impact of Relationship and Economic Bonds	Impaired
Christensen et al. (2019)	2004-2012	Dummy variable for AC affiliation	(1) Subsequent financial statement restatements (2) Late filling of a material weakness (3) Log of audit fees	BoardEx, Audit Analytics and Compustat	AJPT	AC	Affiliated Former Partners on the Audit Committee: Influence on the Auditor-Client Relationship and Audit Quality	Improved
Ittonen et al. (2019)	2004-2012	(1) Dummy variable for AC affiliation (2) Dummy variable if the chair of the AC is affiliated.	(1) Log of Audit fees (2) Log of non-Audit fees (3) Ratio of NAS to total fees.	BoardEx Bankscope, Audit Analytics, Datastream	MAJ	AC	Banks' audit committees, audit firm alumni and fees paid to audit firm	Impaired
Naiker et al. (2013)	2004-2005	(1) Dummy variable for AC affiliation (2) Dummy variable for audit experience but no affiliation.	Ratio of NAS to total fees.	Corporate Library's Board Analyst database, Compustat, Audit Analytics, proxy fillings, company websites.	AR	AC	Do Former Audit Firm Partners on Audit Committees Procure Greater Nonaudit Services from the Auditor?	Improved

Note: overview of prior literature regarding the subject of auditor alumni affiliation.

2.6 Findings from prior literature

Evidence from prior literature regarding the effects of auditor alumni affiliation on audit quality, is mixed. Some researchers who examined auditor alumni affiliation within top management found impaired audit quality due to the affiliation (Favere-Marchesi & Emby, 2018; Lennox, 2005; Menon & Williams, 2004; Ye et al., 2011) while others found improved audit quality (Basioudis, 2007). Next to that, some researchers did not find any clear effects of auditor alumni affiliation on audit quality (Dhaliwal et al., 2015; Finley, Kim, Lamoreaux, & Lennox, 2019; Geiger et al., 2005; Martinov-Bennie et al., 2001). Although research on auditor alumni affiliation on the audit committee is less extensive, evidence from this research is also not conclusive: some researchers found impaired audit quality due to the affiliation (Ittonen et al., 2019; Menon & Williams, 2004) and some found improved audit quality (Christensen et al., 2019; Naiker et al., 2013). As already mentoined in Chapter 2, auditor alumni affiliation can have a negative effect on audit quality because the affiliated employee knows the audit procedures and could circumvent them, because auditors are doing less than they are supposed to do due to missplaced trust, or because auditors intentionally do not report misstatements due to social ties. On the other hand, auditor alumni affiliation can also have positive effects on the audit quality, due to higher synergies between the client and the external auditor or due to the financial expertise auditor alumni have.

Chapter 3: Hypotheses development

3.1 Auditor alumni affiliation on audit quality

As already explained in section 2.6, findings from prior literature regarding the effect of auditor alumni affiliation on audit quality are mixed: some researchers find a positive effect, some researchers find a negative effect and some researchers find no distinguished effect. This holds on both research focusing on auditor alumni affiliation in top management and research focusing on auditor alumni affiliation on the audit committee (although the latter one is substantially less researched).

The Sarbanes-Oxley Act implemented strict rules regarding auditor alumni affiliation (especially employement affiliation) and regarding the responsibilities of the audit committee, which most likely will affect the effects auditor alumni affiliation can have on audit quality. However, there is not much research done on this relation in the post-SOX period. Next to

that, as already explained in section 2.5, proxies used for audit quality and auditor independece are problematic. It is therefore important to examine the effects of auditor alumni affiliation on audit quality in the post-SOX period and with more suited proxies.

Based on the mixed evidence of prior literature, a positive, negative or even no effect can be expected regarding auditor alumni affiliation and audit quality. Therefore, hypothesis 1a and 1b will be stated in null form:

H1a: Performing audits on companies with an affiliated, former auditor as CFO or CEO is not associated with more or less type II errors regarding going concern opinions.

H1b: Performing audits on companies with an affiliated, former auditor on the audit committee is not associated with more or less type II errors regarding going concern opinions.

3.2 Effect of the chair of the audit committee

The chair of the audit committee has more influence and responsibility than any other member of the audit committee. Because of this, it would make sense to investigate how the effect of audit firm alumni affiliation on audit quality changes if specifically the chair of the audit committee is affiliated. Ittonnen et al. (2019) and Christensen et al. (2019) already investigated the effects on audit fees and NAS fees, and the tenure of the audit-partner relationship when the chair of the audit committee is affiliated rather than when one or more members of the audit committee are affiliated. They both conclude that the results of having one or more affiliated audit committee members are even more pronounced when the chair of the audit committee is the affiliated member. Based on these results, the second hypothesis is stated as follows:

H2: The effect of having an affiliated audit committee member on type II errors is stronger when the affiliated member is the chair of the audit committee.

Chapter 4: Research design

4.1 Hypothesis 1

To examine if affiliated auditors are more likely to commit a type II error, a sample of bankrupt clients is used. In this way, I can examine in which cases the auditor did not issue a going concern opinion when he should have. For the operationalization of the constructs, see Figure 1. For hypothesis 1a and 1b, following prior literature (Dhaliwal et al., 2015; Lennox, 2005; Ye et al., 2011), a logit regression is performed. The dependent variable is GCO and the independent variables are AC_AFF and EXC_AFF. The regression analysis is as follows:

$$GCO_{it} = \beta_0 + \beta_1 EXC\_AFF_{it} + \beta_2 AC\_AFF_{it} + \beta_3 AC\_UNAFF + \beta_4 EXC\_UNAFF + \beta_5 ALTMAN + \beta_6 GCO\_PRIORYEAR + \beta_7 SIZE + \beta_8 NET\_INCOME + \beta_9 PROF + \beta_{10} LEV + \beta_{11} LIT + \beta_{12} LOSS + \varepsilon_{it} \quad (1)$$

The variable GCO is a dummy variable which equals one if a going concern opinion is given in the year prior to bankruptcy and zero otherwise. The variable AC_AFF is a dummy variable which equals one if at least one member of the audit committee is a former employee of the incumbent external auditor and zero otherwise. EXC_AFF is also a dummy variable which equals one if the CFO and/or CEO is a former employee of the incumbent external auditor and zero otherwise.

4.1.1 Control variables

Following auditor alumni affiliation literature where the propensity of issuing a going concern opinion is tested (Lennox, 2005; Ye et al., 2011) and literature where the accuracy of going concern opinions is tested by (not) committing type II errors (Berglund, Eshleman, & Guo, 2018; Berglund, Herrman, & Lawson, 2018; Geiger, & Dasaratha, 2006), a control variable is added representing the financial health of the firms. ALTMAN is the Altman financial distress score, or z-score, representing the financial health of the firms during the fiscal year corresponding to the issued going concern opinion. This score includes five indicators of financial distress and is captured in the following formula:

*Altman = 1.2 * (working capital/total assets) + 1.4 * (retained earnings/total assets) + 3.3 * (EBITDA/total assets) + 0.6 * (market value of equity/total liabilities) + 1.0 (sales/total assets)*

The lower the score, the more chance the company will go bankrupt in the upcomming year and if the score is below 1.8, it is likely the company will go bankrupt. Because variables of financial distress can be both correlated with the independent variable and the dependent variable, it is necessary to add them into the equation. Keeping in mind a firm being in financial distress will more likely go bankrupt than firms which are not, I expect the first to be more likely to receive a GCO.

Christensen et al. (2019) explains that management affiliation can affect audit committee affiliation and the other way around. Because other elements of similarity between the client and the firm can affect the results, it is necessary to incorporate the dummy variables for both audit committee affiliation and executive affiliation into the same regression. Next to that, having unaffiliated executives or audit committee members with CPA experience, who prior worked for a Big Four company, can also be correlated with the dependent variable, GCO, and the independent variable, affiliation (Christensen et al., 2019; Lennox, 2005; Ittonen et al., 2019; Naiker et al., 2013). It is therefore necessary to include dummy variables for unaffiliated employees with CPA- and Big Four experience. Since having CPA experience is an indicator of having financial expertise, communication between the company and the external auditor could be more efficient and smoother, resulting in more accurate GCO issuances. On the other hand, employees with CPA experience know how the external auditors work (e.g. audit procedures, rules etc.), which makes it more easy to circumvent crucial parts of these procedures, resulting in undiscovered problems. Therefore, I am not sure if having an unaffiliated executive with experience (EXC_UNAFF=1) and/or having an unaffiliated audit committee member with experience (AC_UNAFF=1) will more or less likely result in the issuance of a GCO.

The fourth control variable is the dummy variable GCO_PRIORYEAR, which equals 1 if the company received a going concern opinion in the fiscal year prior to the current fiscal year, and zero otherwise. Although not all prior research concerning affiliation and going concern opinion issuance incorporates this variable, it is highly crucial to incorporate it to avoid endogeneity issues. Carson, Fargher, Geiger, Lennox, Raghunandan, & Willekens (2013) explain this variable is incorporated by multiple researchers as an explanatory variable, to predict GCO issuance: if a company already received a GCO in the previous year, it is

more likely to receive a GCO in the current year. Next to that, directors of a company can consider hiring a new, affiliated external auditor if they received a GCO in the previous year, just to try not to receive one this year. Because the variable can be correlated with both the independent variable and the dependent variable, it is necessary to include it in the equation. Looking at Carson et al. (2013), I predict GCO_PRIORYEAR will have a positive relation with GCO: companies who received a GCO in the previous year will more likely receive a GCO in the current year.

Next to the financial variable ALTMAN, a view more financial control variables are added, in line with prior literature ((Dhaliwal et al., 2015; Lennox, 2005; Ye et al., 2011). Because these control variables are financial indicators, they could both be correlated with the independent variable of affiliation and the dependent variable, the issuance of a going concern opinion. Based on prior literature, the following financial control variables are incorporated: NET_INCOME, PROF, LEV and LOSS. PROF and LEV are short for profitability and leverage, respectively. Profitability is calculated by dividing net income to total assets, leverage is calculated by dividing total liabilities to total assets. LOSS is a dummy variable which equals 1 if net income is below 0 and zero otherwise. See Table 2 for definitons and predicted signs of the variables.

The last two control variables which are incorporated into equation (1) are SIZE and LIT. SIZE is measured by computing the log of total assets of the companies. Bigger companies are less likely to go bankrupt and therefore are less likely to receive a going concern opinion (Lennox, 2005). Next to that, bigger companies are more likely to attract Big Four alumni, as they are used to work for a big company. LIT is short for ‘’high litigation industry’’. Dhaliwal et al. (2015) argued that some industries experience more litigation than other industries. Based on SIC codes, the dummy variable LIT is made to indicate if the company operates in a high litigation industry or not. These SIC codes are: 2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370.

Figure 1: Libby boxes

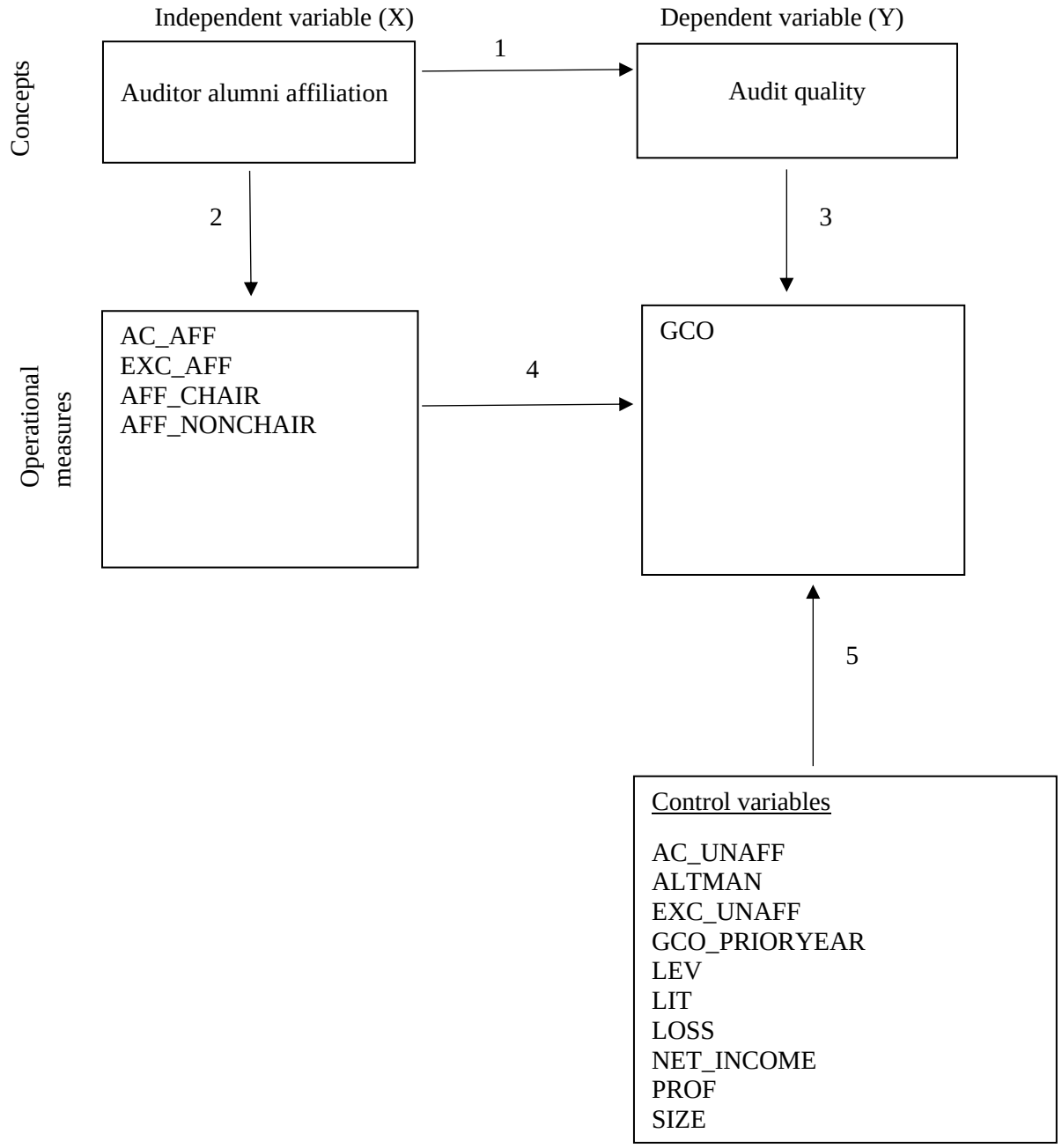

Table 2: Description of all variables

Variable name	Description	Type	Used database	Expected sign
AC_AFF	Dummy variable which equals one if at least one member of the audit committee previously worked for the incumbent auditor.	Independent variable	BoardEx, Audit Analytics and hand collection	?
AFF_CHAIR	Dummy variable which equals one if at least one member of the audit committee previously worked for the incumbent auditor and is the chair of the audit committee.	Independent variable	BoardEx, Audit Analytics and hand collection	?
AC_UNAFF	Dummy variable which equals one if at least one member of the audit committee previously worked for a Big Four auditor, but not the incumbent auditor.	Control variable	BoardEx, Audit Analytics and hand collection	?
AFF_NONCHAIR	Dummy variable which equals one if at least one member of the audit committee previously worked for the incumbent auditor and is not the chair of the audit committee.	Independent variable	BoardEx, Audit Analytics and handcollection	?
ALTMAN	A financial distress score introduced by Altman in 1968 (z-score). The lower the score, the higher the probability of bankruptcy in the following two years.	Control variable	Compustat	-
EXC_AFF	Dummy variable which equals one if the CEO and/or the CFO previously worked for the incumbent auditor.	Independent variable	BoardEx, Audit Analytics and hand collection	?
EXC_UNAFF	Dummy variable which equals one if the CEO and/or CFO previously worked for a Big Four auditor, but not the incumbent auditor	Control variable	BoardEx, Audit Analytics and hand collection	?
GCO	Dummy variable which equals one if the company received a going concern opinion within 12 months before bankruptcy	Dependent variable	Audit Analytics	N/A
GCO_PRIORYEAR	Dummy variable which equals one if the company received a going concern opinion in the year prior to the current fiscal year	Control variable	Audit Analytics	+
LEV	Variable defining the leverage of the company. Computed by dividing total liabilities to total assets.	Control variable	Compustat	+
LIT	Dummy variable which equals 1 if the company operated in a high litigation industry and zero otherwise.	Control variable	Compustat	+

LOSS	Dummy variable which equals 1 if net income of the company is below 0, and zero otherwise.	Control variable	Compustat	+
NET_INCOME	Variable defining the net income of the company.	Control variable	Compustat	-
PROF	Variable defining the profitability of the company. Computed by dividing net income to total assets.	Control variable	Compustat	-
SIZE	Variable defining the size of the company. Computed by taking the logarithm of total assets of the company	Control variable	Compustat	-

4.2 Hypothesis 2

The second analysis examines if the effect of auditor alumni affiliation on audit quality is stronger when the affiliated audit committee member is the chair of the audit committee. To test this, equation (1) will be used again, where the dependent variable is a proxy for audit quality: a dummy variable which equals one if the bankrupt firm received a GCO in the year prior to bankruptcy and zero otherwise. The logit regression is as follows:

$$GCO_{it} = \beta_0 + \beta_1 AFF\_CHAIR_{it} + \beta_2 AFF\_NONCHAIR + \beta_3 EXC\_AFF + \beta_4 AC\_UNAFF + \beta_5 EXC\_UNAFF + \beta_6 ALTMAN + \beta_7 GCO\_PRIORYEAR + \beta_8 SIZE + \beta_9 NET\_INCOME + \beta_{10} PROF + \beta_{11} LEV + \beta_{12} LIT + \beta_{13} LOSS + \varepsilon_{it} \quad (2)$$

The independent variables in this equation are AFF_CHAIR and AFF_NONCHAIR. AFF_CHAIR is a dummy variable which equals one if the affiliated audit committee member is the chair of the audit committee and zero otherwise. AFF_NONCHAIR is a dummy variable which equals one if the affiliated audit committee member is not the chair of the audit committee. The control variables are the same as the control variables in equation (1).

4.3 Sample selection

This thesis uses type II errors concerning the issuance of a going concern opinion as a proxy for audit quality and auditor independence. To identify such type II errors, a sample of bankrupt companies is needed, since committing a type II error indicates a false negative: the external auditor should have issued a going concern opinion (as seen by the bankruptcy of the company) but did not issue any. Because the Sarbanes-Oxley Act was implemented in 2002

and this regulation has had significant impact on auditor alumni affiliations (see also section 2.3 of this thesis), it is interesting to investigate the potential relation between auditor alumni affiliation and audit quality after the implementation of SOX. Therefore, a sample of bankrupt companies from the years 2003 till 2019 is extracted from Compustat and CRSP, which gives an initial sample of 1.902 bankrupt companies. To identify if a going concern opinion has been given to a company within the year before bankruptcy and by which external auditor, the database Audit Analytics is used. By merging the sample of bankrupt companies with the data of Audit Analytics, 975 observations remain unmatched, which leaves a sample of 927 companies. The database Compustat is used to identify most control variables. Observations that remain unmatched after merging with Compustat, or observations that had missing control variables, were deleted, which gives us a remaining sample of 497 companies. Observations of financial institutes (9) and non-Big Four auditors (268) were also deleted, following Lennox & Park (2007). Deleting non-Big Four auditors is crucial, since there are significant differences between Big Four auditors and non-Big Four auditors, most importantly in committing type I and type II errors (Carson et al., 2013). The ultimate sample, therefore, are 220 bankrupt companies for which I could identify auditor alumni affiliation on the audit committee and in top management. See Table 3, Panel A for the steps taken in the sample selection process.

To identify if the directors of the companies were affiliated with the external auditor at the time of GCO issuance, a mix of existing databases and hand collecting is used. BoardEx provides employment data for a fair amount of directors. Missing employment data is gathered by hand collecting the data from proxy statements, which provide employment data of directors since section 407 of SOX required this in 2002. Next to that, the proxy statements are used to check the employment data from BoardEx and to make sure the data is complete. For auditor alumni affiliation in audit committees an extra step is taken in the sample selection process: audit committees with less than three persons are removed from the sample as these audit committees are generally too small to work effectively (ASX, 2019). This leaves a sample of 208 companies for which auditor alumni affiliation on the audit committee is identified.

Table 3, Panel B shows the yearly distribution of the firms. Note the relatively few observations in the final sample in the year 2003. This is because the year of bankruptcy is used to make the distribution. For the research design, audit opinions within a year before bankruptcy are gathered to determine the going concern opinion. Due to the implementation of the Sarbanes-Oxley Act, only fiscal years starting from 2003 are used. Many observations

of firms that went bankrupt in 2003 with a last audit opinion in 2002 therefore could not be used.

Table 3: Sample selection process
Panel A: sample selection

Number of bankrupt firms available over 2003-2020		1,902
Less: firm-year observations unmatched with Audit Analytics	(975)	
Less: firm-year observations unmatched with Compustat	(317)	
Less: firm-year observations with missing control variables	(113)	
Less: firm-year observations in financial services industries (SIC 6000-6999)	(9)	
Less: firm-year observations of non-Big Four auditors	(268)	
Less: firm-year observations with less than three AC members	(12)	
Sample used to test H1 and H2		208

Panel B: yearly distribution of bankrupt firms

Year	**Initial sample**	**Final sample**
2003	214	1
2004	128	16
2005	103	15
2006	83	10
2007	125	6
2008	206	13
2009	300	28
2010	129	11
2011	102	10
2012	81	10
2013	81	6
2014	42	12
2015	59	11
2016	98	21
2017	57	9
2018	39	11
2019	54	18
2020	1	
Total	**1,902**	**208**

Note: sample selection process and yearly distribution of the initial sample and final sample (after all alterations).

Chapter 5: Results

5.1 Descriptive statistics

Table 4 provides descriptive statistics of the variables used in the regressions. Panel A shows the number of observations, mean and standard deviation of three subsamples concerning audit committee members (AC members): affiliated companies (1), unaffiliated companies with auditing experience (2) and companies without auditing experience (3). The total number of observations for the AC members sample is 208. Out of these 208 companies, 19 companies have affiliated AC members, 52 companies have unaffiliated AC members with auditing experience and 137 companies have no AC members with auditing experience (neither affiliated nor unaffiliated). The variable of interest is the independent variable GCO. Because this variable is a dummy variable, it can only be 0 or 1. Looking at the mean of GCO, it is clear that unaffiliated companies without auditing experience, or (3), got relatively more going concern opinions than the rest of the subsamples: in 51.8% of the cases, sample (3) got a going concern opinion, in comparison to 38.5% and 47.4% for subsamples (2) and (1), respectively. In other words, the descriptive statistics illustrate that, concerning AC members, in cases of companies without auditing experience (3), external auditors make the least amount of type II errors, following by affiliated companies (1) and unaffiliated companies with auditing experience (2). Looking at the control variables in Panel A, the statistics show that 21.1% of the affiliated companies by AC members also have affiliated executives. Next to that, the average z-score in all subsamples is quite low, with a maximum of -5.868 and a minimum of -8.750, all well below the threshold of 1.8 (see also section 4.1.1). Companies without AC members with auditing experience (3) received the most going concern opinions in the previous year, followed by affiliated companies (1); 14.6% and 10.5% respectively. Unaffiliated companies with auditing experience (2) received the least going concern opinions in the previous year, 5.8%. This supports the assumption that receiving a going concern opinion in the previous year is correlated with having affiliated AC members in the current year. However, receiving a going concern opinion in the previous year also seems to be correlated with having AC members without auditing experience in the current year. This can be explained as follows: it is likely that companies who do not have AC members with auditing experience, also did not have them in the previous year. This could be an incentive for the external auditor to issue a going concern opinion, due to the lack of financial expertise within the audit committee.

Panel B shows the descriptive statistics concerning executives, also divided into the same three subsamples. The total number of observations in this sample is 220. Out of these 220 companies, 19 companies have affiliated executives, 42 companies have unaffiliated executives with auditing experience, and 159 companies have no executives with auditing experience (neither affiliated nor unaffiliated). Looking at the variable of interest, GCO, the statistics show affiliated companies (1) got relatively more going concern opinions than the rest of the subsamples: in 57.9% of the cases, subsample (1) got a going concern opinion, in comparison to 54.8% and 46.5% for subsamples (2) and (3), respectively. Worth noticing, is the relatively big gap between the subsample of companies without auditing experience (3) and the other subsamples: most type II errors are made within this sample. Looking at the control variables, the statistics show the average z-score is a little higher compared to the sample of AC members. However, the z-score is still quite low, with a maximum of -3.774 and a minimum of -8.370. The subsample of affiliated companies (1) received the most going concern opinions in the previous year, relatively, (21.1%) and the subsample of unaffiliated companies with auditing experience the least (2.4%). This supports the assumption explained above: companies who received a going concern opinion in the previous year are more likely to hire an affiliated external auditor in the current year.

Panel C presents descriptive statistics regarding chairs and non-chairs of the audit committee. For the first two subsamples, sample (1) and sample (2), a further division is made into chair- and non-chair groups. All groups incorporate more chairs than non-chairs, so most of the (affiliated) AC members with audit experience are chairman/chairwoman. Also noteworthy is that, for each group, having an (affiliated) chair with auditing experience rather than having a (affiliated) non-chair with auditing experience, will result in a higher chance of getting a going concern opinion. Especially affiliated companies, subsample (1), show a pronounced difference in the chance of getting a going concern opinion between the two groups: 57.1% (chair) as opposed to 20.0% (non-chair). The z-score is also considerably higher in the second group, however, still below the threshold of 1.8.

Table 4: Descriptive statistics

Panel A: Descriptive statistics concerning affiliated AC members

	Affiliated companies			Unaffiliated companies with CPA experience			Companies without CPA experience		
Variable	**N**	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**
GCO	19	0.474	0.513	52	0.385	0.491	137	0.518	0.502
ALTMAN	19	-8.750	31.684	52	-5.868	27.598	137	-6.457	30.122
EXC_AFF	19	0.211	0.419	52	0.077	0.269	137	0.080	0.273
EXC_UNAFF	19	0.211	0.419	52	0.231	0.425	137	0.168	0.375
GCO-PRIORYEAR	19	0.105	0.315	52	0.058	0.235	137	0.146	0.354
LEV	19	1.123	0.401	52	1.050	0.690	137	1.084	0.813
LIT	19	0.158	0.375	52	0.135	0.345	137	0.124	0.331
LOSS	19	0.842	0.375	52	0.904	0.298	137	0.905	0.294
NET_INCOME	19	-421.313	973.753	52	-386.962	817.575	137	-241.965	534.549
PROF	19	-0.741	1.531	52	-1.023	4.671	137	-0.766	2.849
SIZE	19	6.393	2.110	52	6.556	2.117	137	6.094	1.727

Panel B: Descriptive statistics concerning affiliated executives

	Affiliated companies			Unaffiliated companies with CPA experience			Companies without CPA experience	
Variable	**N**	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**
GCO	19	0.579	0.507	42	0.548	0.504	159	0.465	0.500
ALTMAN	19	-7.984	31.590	42	-3.774	11.800	159	-8.370	33.865
AC_AFF	19	0.211	0.419	39	0.103	0.307	150	0.073	0.262
AC_UNAFF	19	0.316	0.478	39	0.333	0.478	150	0.247	0.433
GCO_PRIORYEAR	19	0.211	0.419	42	0.024	0.154	159	0.151	0.359
LEV	19	0.937	0.440	42	1.165	0.711	159	1.125	0.858
LIT	19	0.211	0.419	42	0.119	0.328	159	0.113	0.318
LOSS	19	0.895	0.315	42	0.905	0.297	159	0.893	0.310
NET_INCOME	19	-224.698	474.285	42	-184.764	507.508	159	-315.513	696.586
PROF	19	-0.736	1.472	42	-0.667	1.563	159	-0.834	3.701
SIZE	19	5.812	1.882	42	6.265	1.994	159	6.187	1.954

Panel C: Descriptive statistics concerning affiliated chairs

	Affiliated companies (n=19)						Unaffiliated companies with CPA experience (n=52)					Companies without CPA experience (n=137)	
	Chair			Non-Chair			Chair			Non-Chair			
Variable	**N**	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**
GCO	14	0.571	0.514	5	0.200	0.447	36	0.389	0.494	16	0.375	0.500	0.518	0.502
ALTMAN	14	-12.163	36.606	5	0.807	2.756	36	-7.205	33.085	16	-2.859	4.653	-6.457	30.122
EXC_AFF	14	0.286	0.469	5	0.000	0.000	36	0.111	0.319	16	0.000	0.000	0.080	0.273
EXC_UNAFF	14	0.143	0.363	5	0.400	0.548	36	0.278	0.454	16	0.125	0.342	0.168	0.375
GCO_PRIORYEAR	14	0.143	0.363	5	0.000	0.000	36	0.056	0.232	16	0.063	0.250	0.146	0.354
LEV	14	1.200	0.433	5	0.907	0.185	36	1.151	0.781	16	0.822	0.335	1.084	0.813
LIT	14	0.071	0.267	5	0.400	0.548	36	0.139	0.351	16	0.125	0.342	0.124	0.331
LOSS	14	0.786	0.426	5	1.000	0.000	36	0.917	0.280	16	0.875	0.342	0.905	0.294
NET_INCOME	14	-509.232	1130.681	5	-175.140	95.580	36	-426.584	899.723	16	-297.814	609.567	-241.965	534.549
PROF	14	-0.913	1.761	5	-0.257	0.284	36	-1.309	5.608	16	-0.379	0.386	-0.766	2.849
SIZE	14	6.090	2.135	5	7.251	1.993	36	6.692	2.067	16	6.250	2.265	6.094	1.727

Note: this table provides descriptive statistics for the variables used to test hypothesis 1 and 2. Panel A provides descriptive statistics concerning the sample of audit committee members. The sample is divided into three subsamples: companies with affiliated AC members (1), companies with unaffiliated AC members with audit experience (2) and companies without AC members with audit experience (3). The number of observations, mean and standard deviation of all variables, for each subsample are displayed. Panel B provides the same descriptive statistics as Panel A, for the sample of executives. Panel B divides the sample of executives into the same three subsamples as in Panel A. Panel C provides descriptive statistics for the variables used to specifically test hypothesis 2. The sample of audit committee members is used and divided into three subsamples: companies with affiliated AC members (1), companies with unaffiliated AC members with audit experience (2) and companies without CPA experience (3). A second division is made into Chair and Non-Chair, depending on the question if either the chair is affiliated (has audit experience) or another member is affiliated (has audit experience). The mean and standard deviation of all variables, for each subsample are displayed.
NET_INCOME is in millions of dollars.

5.2 Correlation matrix

Table 5 Panel A provides the Pearson Correlation Matrix for the dependent and independent variables used in regression (1). The variables of interest, AC_AFF and EXC_AFF are both not significantly correlated with the dependent variable, GCO. This suggests that alumni affiliation has no significant effect on the issuance of a going concern opinion and the chance of committing a type II error.

All control variables, except for EXC_UNAFF and LIT, are significantly correlated with GCO. The signs of the control variables which are financial indicators, LEV, LOSS, PROF, and NET_INCOME, are all as expected: the worse the company is performing financially, the more likely it will receive a going concern opinion. The sign of the last financial indicator, ALTMAN, is also as expected: it is negatively correlated (r = -0.206), meaning the lower the z-score, the higher the chance of getting a going concern opinion. The variable SIZE is negatively correlated with GCO. This means the bigger the company, the less chance it has to receive a going concern opinion (r = -0.335). This is also as predicted (see also section 4.1.1). GCO_PRIORYEAR is also as expected: receiving a going concern opinion in the previous year will increase the chance of receiving a going concern opinion in the current year (r = 0.283). AC_UNAFF is negatively correlated with GCO (r = -0.129), which suggests that having unaffiliated audit committee members with auditing experience will decrease the chance of getting a going concern opinion and thereby increase the chance of committing a type II error.

Based on the Pearson correlation matrix, multicollinearity could be an issue since some independent variables are highly correlated with each other: the highest correlation is between PROF and ALTMAN (r = 0.841). To rule out multicollinearity issues, the variance inflation factors (VIF) are calculated. Table 5 Panel B provides the VIF's. As seen in this table, all VIF's are well below the common threshold of 10, indicating that multicollinearity will not be an issue in the regressions that will be performed.

Table 5: Correlation matrix
Panel A: Pearson Correlation Matrix

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1)	GCO	1.000												
(2)	EXC_AFF	0.054	1.000											
(3)	AC_AFF	-0.005	**0.131**	1.000										
(4)	EXC_UNAFF	0.055	**-0.149**	0.019	1.000									
(5)	AC_UNAFF	**-0.129**	0.033	-0.042	0.069	1.000								
(6)	ALTMAN	**-0.206**	-0.005	-0.024	0.059	0.024	1.000							
(7)	GCO_PRIORYEAR	**0.283**	0.072	-0.015	**-0.155**	**-0.124**	**-0.059**	1.000						
(8)	LEV	**0.248**	-0.069	0.019	0.030	-0.024	**-0.259**	0.024	1.000					
(9)	LIT	0.024	0.082	0.027	-0.005	-0.009	**-0.063**	**-0.063**	**0.092**	1.000				
(10)	LOSS	**0.211**	-0.001	-0.060	0.015	-0.048	**-0.081**	**-0.084**	**0.094**	0.037	1.000			
(11)	NET_INCOME	**-0.130**	0.028	-0.061	0.074	-0.057	0.031	**0.123**	**-0.169**	**0.110**	**-0.224**	1.000		
(12)	PROF	**-0.190**	0.006	0.008	0.019	-0.024	**0.841**	0.027	**-0.256**	**-0.122**	**-0.097**	**0.074**	1.000	
(13)	SIZE	**-0.335**	-0.057	0.027	0.024	0.109	**0.440**	**-0.260**	**-0.205**	**-0.228**	**-0.123**	**-0.357**	**0.340**	1.000

Panel B: Variance inflation factors

Variable	VIF
ALTMAN	4.15
PROF	3.97
SIZE	1.81
NET_INCOME	1.44
LEV	1.16
LOSS	1.15
GCO_PRIORYEAR	1.14
LIT	1.10
EXC_AFF	1.07
EXC_UNAFF	1.06
AC_UNAFF	1.04
AC_AFF	1.04
Mean VIF	1.68

Note: correlation matrix and variance inflation factors concerning the variables used in regression analysis (1). The correlations in **bolt** are significant at the 0.1 level.

5.3 Multivariate analysis: auditor alumni affiliation on audit quality

Table 6 shows the results of the logit regression between going concern opinions and auditor alumni affiliation. The first independent variable of interest, AC_AFF, has a negative coefficient (-0.219). Because the dependent variable is a dichotomous variable, and therefore a logit regression is performed, the results first have to be transformed to interpret them. A coefficient of -0.219 means an odd ratio of ($e^{-.219}$=) 0.803. Holding everything else constant, having an AC member who used to work for the incumbent external auditor, decreases the odds of getting a going concern opinion with 19.7%. Or in other words, the odds of committing a type II error increase with 19.7% when at least one AC member is affiliated. The second independent variable of interest, EXC_AFF, has a positive coefficient (0.510). Transforming this coefficient results in an odds ratio of ($e^{.510}$=) 1.665. Holding everything else constant, this means having a CEO or CFO who used to work for the incumbent external auditor, increases the odds of getting a going concern opinion with 66.5%. Or: the odds of committing a type II decrease with 66.5% when the CEO and/or CFO is affiliated.

However, the results of both AC_AFF and EXC_AFF are not significant (p = 0.741 and p = 0.409). Therefore, I cannot conclude having an affiliated AC member of having an affiliated executive has an effect on the audit quality. Hypothesis 1a was stated as follows:

> *H1a: Performing audits on companies with an affiliated, former auditor as CFO or CEO is not associated with more or less type II errors regarding going concern opinions.*

Based on the results of the regression, I cannot reject the first hypothesis: there is no evidence that having an affiliated CFO or CEO has an effect on the chance of committing a type II error. These results are consistent with the research of Dhaliwal et al. (2015), Finley et al. (2019) and Geiger et al. (2005), who all found that the audit quality is not affected (either positively or negatively) by having affiliated executives. Hypothesis 1b was stated as follows:

> *H1b: Performing audits on companies with an affiliated, former auditor on the audit committee is not associated with more or less type II errors regarding going concern opinions.*

As well as the first hypothesis, I cannot reject the second hypothesis, based on the results of the regression. Having an affiliated audit committee member does not have a significant effect on the chance of committing a type II error. Regarding auditor alumni

affiliation on the audit committee, there is not much prior research done. However, out of the four researches that are done concerning auditor alumni affiliation on the audit committee, two of the studies found impaired audit quality and the other two found improved audit quality (see also Table 1). This thesis finds no significant effect on audit quality, maintaining the mixed evidence on this topic.

Regarding the control variables, EXC_UNAFF, NET_INCOME, and SIZE are significant at the 0.1 level, LEV, and LOSS are significant at the 0.05 level, and GCO_PRIORYEAR is significant at the .01 level. NET_INCOME, SIZE, LEV and LOSS all have signs as expected: companies which are more financially in distress and/or which are smaller, have a higher chance of receiving a going concern opinion. Or in other words: if the audited companies are more financially in distress and/or are smaller, the chance of committing a type II error decreases. The results of GCO_PRIORYEAR are also as expected: the odds of getting a going concern opinion are 1,083.2% higher when the company received a going concern opinion in the previous year. The fact that the company received a going concern opinion in the previous year most likely illustrates the bad state the company is in and it is therefore reasonable the external auditor does not think the company can continue in the future. Next to that, the auditor could be biased due to the going concern opinion last year and therefore think the company needs a going concern opinion this year also. EXC_UNAFF has a coefficient of 0.731, which means that the odds of getting a going concern opinion are 107.7% higher if the company has an unaffiliated CEO and/or CFO with auditing experience (who previously worked for a Big Four company). Or in other words, the odds of committing a type II error decrease with 107.7%. These results suggest that the cognitive proximity between the executive and the external auditor, based on their shared knowledge about auditing and their financial expertise, results in increased audit quality (Ittonen et al, 2019). Based on these results, the audit quality improves when companies hire former auditors as their CEO and/or CFO. However, the effect on audit quality when those CEO's or CFO's are affiliated with the external auditor is not clear.

Table 6: Regression results H1

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]	Sig.
AC_AFF	-0.219	0.661	-0.33	0.741	-1.514	1.077	
EXC_AFF	0.510	0.618	0.83	0.409	-0.701	1.722	
AC_UNAFF	-0.511	0.396	-1.29	0.197	-1.287	0.265	
EXC_UNAFF	0.731	0.436	1.68	0.094	-0.124	1.586	*
ALTMAN	0.013	0.013	0.96	0.338	-0.013	0.039	
GCO_PRIORYEAR	2.432	0.735	3.31	0.001	0.992	3.873	***
LEV	0.714	0.322	2.22	0.027	0.083	1.345	**
LIT	-0.348	0.517	-0.67	0.502	-1.362	0.666	
LOSS	1.776	0.865	2.05	0.040	0.081	3.471	**
NET_INCOME	-0.001	0.000	-1.80	0.072	-0.002	0.000	*
PROF	-0.806	0.666	-1.21	0.226	-2.112	0.499	
SIZE	-0.354	0.183	-1.94	0.053	-0.713	0.004	*
Constant	-0.990	1.517	-0.65	0.514	-3.964	1.984	

Number of observations	208	LR chi2(6)	76.08
Prob > chi2	0.0000	Pseudo R2	0.2641

Note: regression results of the logistics regression between GCO, AC_AFF and EXC_AFF.
**** p<0.01, ** p<0.05, * p<0,1.*

5.4 Multivariate analysis: chair of the audit committee

Table 7 provides the regression results for hypothesis 2. This is the same logit regression as the regression used for hypothesis 1, however the variable AC_AFF is now divided into two new variables: AFF_CHAIR and AFF_NONCHAIR, indicating if the affiliated audit committee member is the chair of the audit committee or only a member. By splitting the variable for AC affiliation into these two new variables, it is possible to see if the effect on committing type II errors is stronger when the affiliated AC member is the chair of the committee. AFF_CHAIR has a coefficient of 0.238, which means, holding everything else constant, the odds of receiving a going concern opinion increase with 26.8% ($e^{.238}$) when the chair of the audit committee previously worked for the incumbent external auditor as opposed to when no one of the audit committee previously worked for the incumbent external auditor. AFF_NONCHAIR has a coefficient of -1.226, which means the odds of getting a going concern opinion decrease with 70.6% ($e^{-1.226}$) when a member (but not the chair) of the audit committee is affiliated as opposed to when no one of the audit committee is affiliated.

Looking back at the results in section 5.3, having an affiliated AC member would decrease the odds of receiving a going concern opinion (and increase the odds of committing a type II error) by 19.7%. Since having an affiliated chair of the audit committee increases the odds of getting a going concern opinion (and decreases the odds of committing a type II error) by 26.8% it seems the effect of an affiliated audit committee member is not stronger when the affiliated member is the chair of the committee: the effects are even opposite to each other. However, Table 6 already showed the coefficient of AC_AFF is not significant and the coefficient of both AFF_CHAIR and AFF_NONCHAIR are also not significant. Therefore, it is not possible to draw a conclusion on the moderating effect of (affiliated) chairmen/chairwomen. Hypothesis 2 was stated as follows:

> *H2: The effect of having an affiliated audit committee member on type II errors is stronger when the affiliated member is the chair of the audit committee.*

Based on the (insignificant) results of the second regression, I cannot accept this hypothesis: the effect of having an affiliated audit committee member on type II errors is not significantly stronger when the affiliated member is the chair of the audit committee. These results are not consistent with prior research. Both Christensen et al. (2019) and Ittonen et al. (2019) found that the results regarding affiliation on audit quality where even more pronounced when the chair of the audit committee is affiliated. The inconsistency with prior literature, however, could be due to the small sample size of this study: only 19 out of 208 companies have one or more affiliated audit committee members, with 14 chairs and 5 non-chairs.

Table 7: Regression results H2

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]	Sig.
AFF_CHAIR	0.238	0.805	0.30	0.768	-1.340	1.815	
AFF_NONCHAIR	-1.226	1.285	-0.95	0.340	-3.744	1.292	
EXC_AFF	0.443	0.622	0.71	0.477	-0.776	1.661	
AC_UNAFF	-0.540	0.396	-1.36	0.173	-1.316	0.237	
EXC_UNAFF	0.801	0.444	1.80	0.071	-0.069	1.670	*
ALTMAN	0.013	0.013	0.96	0.336	-0.013	0.039	
GCO_PRIORYEAR	2.435	0.738	3.30	0.001	0.989	3.881	***
LEV	0.704	0.323	2.18	0.029	0.071	1.336	**
LIT	-0.303	0.525	-0.58	0.563	-1.332	0.725	
LOSS	1.813	0.857	2.12	0.034	0.134	3.493	**
NET_INCOME	-0.001	0.000	-1.70	0.088	-0.002	0.000	*
PROF	-0.814	0.680	-1.20	0.231	-2.146	0.518	
SIZE	-0.344	0.185	-1.86	0.063	-0.707	0.019	*
Constant	-1.080	1.525	-0.71	0.479	-4.070	1.910	

Number of observations	208	LR chi2(7)	77.10
Prob > chi2	0.0000	Pseudo R2	0.2677

Note: regression results of the logistics regression between GCO, AFF_CHAIR and AFF_NONCHAIR.
**** p<0.01, ** p<0.05, * p<0,1.*

5.5 Robustness checks

To determine if the results in sections 5.3 and 5.4 are accurate, multiple robustness checks are performed. The first check is to perform the regressions again while excluding repetitive GCO cases. Companies that received a going concern opinion in the year prior to the year of study, could be treated differently by the external auditors and this could impact the outcome of the regressions. The results in table 8 are very similar to table 6 and 7: all signs and p-values are comparable, and the coefficients of interest, EXC_AFF, AC_AFF, AC_CHAIR and AC_NONCHAIR, are still insignificant.

The second check is to redefine the independent variables of interest (the affiliation variables): instead of a dummy variable which equals one if at least one of the directors is affiliated, a ratio variable is used (Lennox, 2005). This ratio variable is calculated by dividing the number of affiliated audit committee members by the total number of audit committee members. The same is done for affiliated executives (CEO and/or CFO). Also, the control

variables AC_UNAFF and EXC_UNAFF are redefined as ratio variables. Again, the results in table 9 are very similar to the initial regression results of table 6 and 7. All signs are comparable and most of the p-values are comparable. The coefficients of interest are still insignificant. Also, the control variable EXC_UNAFF (or EXC_UNAFF_RATIO in the robustness check) switches from being significant at a 0.1 level to being insignificant (p = 0.153)

In the third robustness check, an extra control variable is added: the number of members the audit committee is comprised of. It is plausible that companies with larger audit committees behave differently relative to companies with smaller audit committees. Therefore, a categorical variable is added to the regression, indicating the amount of audit committee members per company. Again, the (untabulated) results do not considerably deviate from the results in table 6 and table 7. Subsequently, the sample is divided into two groups, based on the amount of audit committee members: one group with only three audit committee members (the minimum amount recommended by the ASX (2019)), and one group with more than three audit committee members. For both of these groups, regression (1) is performed separately to identify potential differences between the groups. The variables of interest remain insignificant in both regressions. Noteworthy is the fact that the significance, and also some of the signs, of some control variables differ. Compared to the initial results in table 6, the group of companies with more than three audit committee members substantially deviates and the group of companies with three audit committee members is most comparable to the initial results of table 6. See table 10 for the results.

Table 8: Robustness check 1 – dropping repetitive GCO cases

Panel A

	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]		Sig.
AC_AFF	-0.219	0.681	-0.32	0.748	-1.554	1.116	
EXC_AFF	0.442	0.644	0.69	0.492	-0.820	1.705	
AC_UNAFF	-0.592	0.409	-1.45	0.148	-1.394	0.210	
EXC_UNAFF	0.756	0.442	1.71	0.087	-0.110	1.621	*
ALTMAN	0.012	0.013	0.93	0.350	-0.014	0.038	
LEV	0.650	0.327	1.98	0.047	0.008	1.291	**
LIT	-0.456	0.533	-0.86	0.392	-1.501	0.589	
LOSS	2.049	1.204	1.70	0.089	0.311	4.408	*
NET_INCOME	-0.001	0.000	-2.16	0.031	-0.002	-0.000	**
PROF	-0.433	0.586	-0.74	0.460	-1.581	0.715	
SIZE	-0.496	0.190	-2.61	0.009	-0.869	-0.124	***
Constant	-0.188	1.779	-0.11	0.916	-3.675	3.298	

Number of observations	183	LR chi2(6)	56.68
Prob > chi2	0.0000	Pseudo R2	0.2265

Note: regression results of the logistics regression between GCO, AC_AFF and EXC_AFF, after dropping repetitive GCO cases.
**** p<0.01, ** p<0.05, * p<0,1.*

Panel B

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]	Sig.
AFF_CHAIR	0.238	0.826	0.29	0.773	-1.380	1.856	
AFF_NONCHAIR	-1.221	1.308	-0.93	0.351	-3.784	1.343	
EXC_AFF	0.371	0.650	0.57	0.568	-0.903	1.646	
AC_UNAFF	-0.620	0.410	-1.51	0.130	-1.424	0.183	
EXC_UNAFF	0.829	0.450	1.84	0.066	-0.053	1.712	*
ALTMAN	0.012	0.013	0.93	0.350	-0.014	0.039	
LEV	0.644	0.328	1.97	0.049	0.002	1.286	**
LIT	-0.413	0.541	-0.76	0.445	-1.473	0.646	
LOSS	2.113	1.194	1.77	0.077	-0.228	4.454	*
NET_INCOME	-0.001	0.000	-2.07	0.039	-0.002	0.000	**
PROF	-0.424	0.596	-0.71	0.477	-1.591	0.743	
SIZE	-0.489	0.192	-2.54	0.011	-0.866	0.112	**
Constant	-0.286	1.786	-0.16	0.873	-3.785	3.214	

Number of observations	183	LR chi2(7)	57.64
Prob > chi2	0.0000	Pseudo R2	0.2303

Note: regression results of the logistics regression between GCO, AFF_CHAIR and AFF_NONCHAIR, after dropping repetitive GCO cases.
*** *p<0.01*, ** *p<0.05*, * *p<0,1*.

Table 9: Robustness check 2 – ratio affiliation variables

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]	Sig.
AC_RATIO	-0.471	2.245	-0.21	0.834	-4.870	3.928	
EXC_RATIO	0.853	1.220	0.70	0.484	-1.538	3.245	
AC_UNAFF_RATIO	-1.036	1.105	-0.94	0.349	-3.203	1.131	
EXC_UNAFF_RATIO	1.093	0.765	1.43	0.153	-0.407	2.592	
ALTMAN	0.013	0.013	0.98	0.329	-0.013	0.039	
GCO_PRIORYEAR	2.469	0.730	3.38	0.001	1.038	3.901	***
LEV	0.716	0.321	2.23	0.026	0.087	1.344	**
LIT	-0.333	0.517	-0.64	0.519	-1.346	0.680	
LOSS	1.779	0.865	2.06	0.040	0.083	3.474	**
NET_INCOME	-0.001	0.000	-1.75	0.081	-0.002	0.000	*
PROF	-0.835	0.668	-1.25	0.211	-2.143	0.474	
SIZE	-0.344	0.181	-1.90	0.058	-0.699	0.011	*
Constant	-1.083	1.505	-0.72	0.472	-4.033	1.866	

Number of observations	208	LR chi2(6)	74.42
Prob > chi2	0.0000	Pseudo R2	0.2584

Note: regression results of the logistics regression between GCO, AC_RATIO and EXC_RATIO.
**** p<0.01, ** p<0.05, * p<0,1.*

Table 10: Robustness check 3 – amount of AC members

Panel A: companies with three AC members

	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]		Sig.
AC_AFF	-0.111	0.874	-0.13	0.899	-1.825	1.603	
EXC_AFF	0.892	0.937	0.95	0.341	-0.944	2.728	
AC_UNAFF	-0.345	0.543	-0.64	0.525	-1.408	0.719	
EXC_UNAFF	1.033	0.588	1.75	0.079	-0.121	2.186	*
ALTMAN	0.010	0.013	0.76	0.448	-0.016	0.037	
GCO_PRIORYEAR	1.699	0.986	1.72	0.085	-0.235	3.632	*
LEV	0.793	0.388	2.05	0.041	0.033	1.552	**
LIT	-0.312	0.591	-0.53	0.598	-1.470	0.846	
LOSS	2.353	1.358	1.73	0.083	-0.308	5.015	*
NET_INCOME	-0.001	0.001	-1.54	0.124	-0.003	0.000	
PROF	-0.107	0.494	-0.22	0.829	-1.076	0.862	
SIZE	-0.526	0.246	-2.14	0.033	-1.009	-0.043	**
Constant	-0.441	2.124	-0.21	0.836	-4.605	3.723	

Number of observations	125	LR chi2(6)	37.76
Prob > chi2	0.0002	Pseudo R2	0.2180

Note: regression results of the logistics regression between GCO, AC_AFF and EXC_AFF, with a sample of companies with three audit committee members.
**** p<0.01, ** p<0.05, * p<0,1.*

Panel B: Companies with more than three AC members

	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]		Sig.
AC_AFF	-0.105	1.336	-0.08	0.937	-2.724	2.513	
EXC_AFF	0.777	1.128	0.69	0.491	-1.434	2.987	
AC_UNAFF	-0.637	0.759	-0.84	0.401	-2.125	0.851	
EXC_UNAFF	0.654	0.870	0.75	0.452	-1.051	2.358	
ALTMAN	-0.720	0.329	-2.19	0.029	-1.367	-0.075	**
GCO_PRIORYEAR	3.747	1.443	2.60	0.009	0.919	6.575	***
LEV	-0.552	1.109	-0.50	0.619	-2.725	1.622	
LIT	0.783	1.816	0.43	0.666	-2.776	4.343	
LOSS	0.391	1.392	0.28	0.779	-2.337	3.119	
NET_INCOME	-0.000	0.000	-0.87	0.383	-0.001	0.001	
PROF	-1.477	2.605	-0.57	0.571	-6.583	3.629	
SIZE	0.036	0.330	0.11	0.914	-0.611	0.683	
Constant	-1.464	3.491	-0.42	0.675	-8.306	5.378	

Number of observations	83	LR chi2(6)	54.63
Prob > chi2	0.0000	Pseudo R2	0.4809

Note: regression results of the logistics regression between GCO, AC_AFF and EXC_AFF, with a sample of companies with more than three audit committee members.
**** p<0.01, ** p<0.05, * p<0,1.*

Chapter 6: Conclusion and ending remarks

6.1 Conclusion

This thesis investigates the effect of auditor alumni affiliation on audit quality. Audit quality is measured by the chance of committing a type II error regarding the issuance of going concern opinions, since this proxy shows the actual effect on both audit quality and auditor independence. The results of this study show that auditor alumni affiliation, in both top management and on the audit committee, has no significant effect on audit quality. Also, results suggest it does not matter if the affiliated audit committee member is the chair of the audit committee or just a member: the effect on audit quality is not more or less pronounced in either of these cases. One of the control variables, however, did show a meaningful, unanticipated effect: having unaffiliated, former auditors as CEO and/or CFO will lead to less type II errors and therefore improved audit quality. This suggests that the cognitive proximity between the executive and the external auditor, based on their shared knowledge about

auditing and their financial expertise, results in increased audit quality, as Ittonen et al. (2019) already mentioned. Having affiliated executives or audit committee members, however, has no significant effect on the audit quality. Tests to check if these results are robust do not show different results.

6.2 Contributions and implications

This thesis contributes to the existing literature in multiple ways. First, contrary to prior literature, this thesis focuses on both auditor alumni affiliation in top management and auditor alumni affiliation on the audit committee. In this way, it is possible to investigate the differences between both kinds of affiliation, since executives may have different incentives than audit committee members. However, as already mentioned in the previous section, auditor alumni affiliation on both the audit committee and in top management does not have a significant effect on the audit quality. Having unaffiliated executives does have a significant, positive effect on audit quality, as opposed to having unaffiliated audit committee members, which does not have a significant effect. A possible explanation for this is that the relationship between the external auditor and top management is more intense than the relationship between the external auditor and the audit committee, as cognitive proximity looks more enhanced in the first relationship. However, further research has to be done to draw conclusions on this theory.

The second contribution to existing literature is the time period of the sample. Only three studies prior to this thesis examined the effect of auditor alumni affiliation in the post-SOX period. Since the Sarbanes-Oxley Act incorporated multiple regulations potentially influencing the subject of auditor alumni affiliation, it is crucial to focus on this period, as focusing on the pre-SOX period will not provide relevant outcomes anymore. By choosing a sample from 2003 till the most recent observation, this thesis is the first study that combines the post-SOX period and type II errors regarding going concern opinions, in the auditor alumni affiliation literature.

The most important contribution of this thesis is the more suitable proxy used to measure audit quality and auditor independence, in comparison to proxies used in prior auditor alumni affiliation literature. As already explained in Section 2.5, by using a bankrupt sample and investigating when the external auditor issued a going concern opinion and when not, I can determine when the external auditor commits a type II error. Prior studies that only use the propensity to issue going concern opinions as a proxy, by looking at a financially

distressed sample (Lennox, 2005; Dhaliwal et al., 2015; Ye et al., 2011), do not look at the actual consequences of (not) giving a going concern opinion. This thesis focuses on the actual errors made regarding the issuance of going concern opinions and, therefore, investigates the actual effect on audit quality and auditor independence.

The results of this thesis suggest that auditor alumni affiliation does not have an effect on the audit quality, which is consistent with the research of Dhaliwal et al. (2015), Finley et al. (2019) and Geiger et al. (2005). This implies regulators and stakeholders may not have to be as concerned as they are now regarding this topic (Jones, 2012). It might even be a good thing that companies hire audit alumni as managers, as the results show having an unaffiliated audit alumnus as CEO and/or CFO, reduces the chance of type II errors.

6.3 Limitations and further research

This thesis suffers from a few limitations. The first limitation is the amount of observations used in the sample. Because this research focuses on type II errors, a sample of bankrupt companies had to be used. In combination with the time frame of the sample (2003 or later), loss of observations while merging datasets, missing control variables, and other data restrictions (such as the elimination of non-Big Four data and audit committees with less than three members) a final sample of 208 companies is used for the logistic regressions. Although a sample of that size is comparable with samples of studies analyzing type II errors (Berglund et al., 2018; Blay, Moon, & Patterson, 2016; Dunn, Tan, & Venuti, 2002) it still could influence the significance of the results.

The second limitation is the accuracy of the affiliation data. As explained in section 4.3, to identity if the directors of the companies were affiliated with the external auditor at the time of GCO issuance, an existing database of BoardEx is used as well as handcollected data from proxy statements. To make sure no affiliation data would be left out, for all observations both BoardEx and proxy statements were used, making sure every observation is ‘checked’ twice. However, some observations appeared to be affiliated according to BoardEx, when they were not affiliated according to the proxy statements, or the other way around. This can be explained as follows: section 407 of SOX only requires companies to disclose the working experience of their directors for over the last 5 years. They are allowed to disclose more, but they are not obliged to do that. Next to that, BoardEx may have some missing data regarding the working experience of some directors, especially when this data is older. In this way, some affiliation data appeared in proxy statements and not in BoardEx, or the other way

around. In general, this will not be an issue, as every observation is checked twice. However, it could be that some observations are affiliated, but this affiliation does not show in BoardEx or in the proxy statements. In this case, the observation is wrongly marked as unaffiliated while being affiliated. However, looking at the amount of affiliated observations showing in BoardEx and not showing in the proxy statements, and the other way around, I predict the amount of affiliated observations marked as unaffiliated is substantially small.

The third limitation is that this research is done with US data. Implications and conclusions can therefore only be made in this context and not for other parts of the world, such as Europe or Asia. This is also because of the difference in regulation: the Sarbanes-Oxley Act only applies in the United States. When looking at auditor alumni affiliation and audit quality in other parts of the world, not only culture and audit practices are different, but also regulations.

Evidence of studies on the effect of auditor alumni affiliation on audit quality has always been mixed. This is mainly because of the different proxies of audit quality that are being used. By the introduction of a new, more suitable proxy, I tried to draw a convincing conclusion on this topic and make an end to the debate. However, to draw convincing conclusions it is necessary to conduct more research on this topic in the post-SOX period, since only a few studies focused on this time period, producing mixed evidence. On top of that, next to archival studies, more studies can be done focusing on the motives of hiring affiliated external auditors or directors, since there are multiple theories regarding auditor alumni affiliation (see Section 2.2). None of the existing archival studies, however, can draw convincing conclusions on the motives of both the external auditor and the client.

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