



**Master's Thesis**

**Erasmus School of Economics, Erasmus University Rotterdam**

**MSc Accounting, Auditing and Control**

**Client's Economic Importance and Audit Quality: Evidence from a  
Partner Level Analysis in the United States of America**

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## **Abstract**

This study investigates the association between the economic importance of a client to an individual engagement partner and audit quality, in particular the likelihood of issuing a going concern opinion to a client in financial distress. In addition, this study examines the association between the engagement partner's risk averseness towards former Arthur Andersen clients who are considered to possess unique audit and litigation risk arising from damaged reputation and the underlying client's economic importance. I find no significant association between the economic importance of a client and the partner's likeliness to issue a going concern opinion. Rather, the results support the reputation protection theory taking the market-based view that high litigation risk and accompanying reputational concerns safeguard against possible economic bonding, which could impair audit quality. Also, I do not find support that engagement partners report more conservatively when auditing former Arthur Andersen clients and are thus less influenced by the economic importance of the client. Rather, the results suggest that the long time period since the demise of Arthur Andersen has reversed any possible conservatism towards former clients of the latter audit firm.

Keywords: engagement partner; client importance; audit quality; going concern opinion; Arthur Andersen.

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# 1. Introduction

Improving the role and quality of audits has been in the forefront of legislation since the global financial crisis in the early 20's. Although the audit profession is not directly to blame for the accounting problems of several key players, including Enron, WorldCom and Tyco, the public is still concerned over the failure of auditors to detect fraud in a timely manner and even more so after the corresponding demise of one of the leading audit firms, Arthur Andersen (Francis 2004; Agrawal and Chadha 2005; AICPA 2010) In order to restore public confidence in the audit opinion, the legislators started to restructure the audit industry by appointing the Public Company Accounting Oversight Board (hereafter PCAOB) as the direct regulatory body overseeing the profession in the Sarbanes-Oxley Act of 2002 (Public Law No. 107-204). Furthermore, restrictions over non-auditing services provided to audit clients were imposed due to potential conflict of interest posing a threat to auditor's independence (Ibid.). However, the optimal level of audit quality is still unknown and it is yet to be determined whether further legislative changes are needed to enhance auditor accountability and responsibility towards the public (Jackson et al. 2008; El Guindy and Basuony 2018).

The most recent accounting scandals, like the bankruptcy of the British multinational company Carillion, fraudulent accounting practices of BT Italy, earnings management of Weatherford International and accounting irregularities of Steinhoff International to name a few, have sparked new scrutiny over the quality of audits performed by the Big 4 (i.e. Deloitte, Ernst & Young, KPMG, PricewaterhouseCoopers). Attention is being directed towards the close economic bond between the auditor and the client with concerns over the auditor's ability to remain objective and withstand client pressure due to high fee revenue. (SEC 2016; ICAEW Economia 2017; Ibid. 2018; Financial Times 2018) However, the opinion on whether economic bonding in fact leads to impaired audit quality remains unclear.

On the one hand, it is believed that fee revenues from a single client that make up a material portion of the auditors' client portfolio pose a threat to independence, as the auditor is more likely to compromise with the management on reporting and accounting choices in order to not lose important clientele, thus impairing auditor independence (DeAngelo 1981; Reynolds and Francis

2000). This effect is considered to be strongest at the partner level, as the relative importance of a single client increases and influences significantly the career advancement and prestige of an individual engagement partner (Reynolds and Francis 2000; DeFond and Francis 2005). On the other hand, it is proposed that high litigation exposure and transparency of the engagement partner acts as a safeguard against economic bonding (Reynolds and Francis 2000; Li 2009). In this case capital markets would have more information to assess the reliability of the audit report motivating the engagement partner to be more attentive to details and use higher degree of professional skepticism and judgment in the audit approach due to possible litigation risk and accompanying reputation damage (Reynolds and Francis 2000; PCAOB 2013). However, so far the existing evidence on whether litigation risk and reputations concerns counterbalance the possible threat to independence caused by high fee revenues remains weak and is in a need for further investigation.

Furthermore, specific client characteristics play an important role in examining audit quality (Lennox and Wu 2017). Namely, the effect of client importance could be more or less pronounced when engagement partners are auditing clients that are perceived to have unique audit or litigation risk caused by past reputational loss, such as the former Arthur Andersen (hereafter ex-AA) clients (Cahan and Zhang 2006). It is documented that auditors are more conservative when auditing ex-AA clients, due to higher reputational incentives to avoid audit failure (e.g. Cahan and Zhang 2006; Srinidhi et al. 2012; Kamarudin et al. 2014), which could translate into higher audit quality delivered by an individual engagement partner. However, it is yet to be determined whether the effect of economic bonding between an engagement partner and a client is more or less pronounced in the context where partners can be more risk averse.

The recent disclosure of partner identity by the PCAOB (Rule 3211) in the United States of America (hereafter USA) with the attempt to enhance auditor accountability and transparency of audits provides some early evidence that audit quality has increased compared to the previous period (Burke et al. 2017). However, one can question whether the observed increase is just a temporary effect and if high fee revenue from clients affects the level of audit quality. As the auditing profession is exposed to high litigation risk in the USA and audit and non-audit service fee revenues are available to the public, the disclosure of partner identity creates a possibility to examine the association between the economic importance of a client to an individual

engagement partner and audit quality more closely, as well as the interaction with specific partner attitude towards perceived risk and concerns over reputation damage proposed to affect audit quality, which leads to the following research question:

**“Does client’s economic importance affect the quality level of an audit delivered by the engagement partner?”**

Analyzing this particular issue is of importance to academics, regulators and investors. Previous studies have mostly focused on audit fees or client size when examining client’s economic importance to an engagement partner. This however can limit the observed effect, as total fees capture the full economic benefits acquired by the client and thus provide more insight to the underlying research question. Furthermore, as high litigation risk and accompanying reputation concerns can act as safeguards against the threat to independence created by high fee revenue, it is interesting to examine the research question in a high litigation environment like the USA where the respective outcome is not predictable. Also, it is not yet clear whether the partner’s attitude towards perceived risk contribute to the observed relation, thus adding to the existing body of literature by examining whether (if any) partner risk averseness towards ex-AA clients affects audit quality delivered by an engagement partner and how client importance affects that relation. As the recent disclosure of partner identity targets to incentivize higher audit quality amongst the auditors, it is important to the regulators to collect evidence whether such effect actually occurs in the context where high fee revenue from economically important clients can defeat the purpose of increased litigation exposure. Therefore, findings of this study could illustrate the most effective strategy for further legislative measure to regulate the auditing profession. This is of significant importance to investors as well, as their decision-making process attempting to ascertain the credibility of financial information rests on the provision of efficient information to the capital markets. If audit reports are not to be relied upon the capital markets will assign a premium to the capital of the companies and the reputation of the auditors will suffer. However, if the audit quality in fact is not impaired then the expectations of the public are irrational and needed to be changed in order to meet the actual situation. An answer to the research question of this study could provide valuable insight to the existing expectations gap in the auditing industry and thus help the underlying parties in modifying their approach.

The methodology applied to this research starts with downloading the names of Big 4 engagement partners in the USA from the form AP filings on PCAOB AuditorSearch database for the fiscal year of 2017 (i.e. more specifically time period 15.01.2017 to 14.01.2018). In order to determine each client's economic importance, fee revenue data is needed, as well as going concern opinions, which act as a measure for audit quality. The respective data to construct both the independent and dependent variable is acquired from the Audit Analytics database. Client information needed in the logistic regression model is collected from Compustat database. Data on ex-AA clients is collected by screening the Audit Analytics database from 1987 to 2002 (i.e. until the demise of AA) for clients who are now audited by one of the Big 4 audit firms in USA.

I find no significant association between the economic importance of a client and the partner's likeliness to issue a going concern opinion. Therefore, the results provide no support that the economic importance of a client impairs audit quality. Rather, the results support the reputation protection theory taking the market-based view that high litigation risk and accompanying reputational concerns safeguard against possible effect created by economic bonding between a client and an engagement partner. Also, I do not find support that engagement partners report more conservatively when auditing ex-AA clients and are thus less influenced by the economic importance of the client. Rather, the results suggest that the long time period since the demise of AA has reversed any possible conservatism towards former clients of AA. The results are robust to several alternative variable specifications and sensitivity tests.

The study follows the respective structure: The first part of the study gives a general overview on the topic of audit quality and client's economic importance. Afterwards, auditing, auditor independence and audit quality are defined. The last part of the literature review emphasizes the relevant existing literature in the field of client's economic importance as well as research conducted on the ex-AA clientele sample. The next part of the study presents the theoretical background and hypotheses development derived from the respective theory namely the economic bonding theory, the reputation protection theory and the reputation spill over concerning the ex-AA clientele. Following section is the methodology applied to this study, where the focus lies on the research design, sample selection and distribution. The last section gives the results of the main tests and robustness checks, as well as the conclusions of the research.

## **2. Literature Review**

This part of the study first introduces the purpose of auditing in the capital markets and defines auditor independence, audit quality and client's economic importance in general. Afterwards, a brief overview of the research conducted on the economic importance of a client at both firm and office level is given, while focusing in depth on the relevant literature at the partner level. In order to fully understand the existing evidence, differences in research settings and measures of client importance and audit quality used in the key related literature are explained and the corresponding results are examined. Additionally, partner risk attitude concerning ex-AA clients and respective findings in the field are discussed. To conclude, the contribution to the literature on client's economic importance is presented.

### **2.1 Audit of Financial Statements**

According to the International Standard on Auditing 200, an audit of financial statements is “an assurance engagement, where the auditor is engaged for purposes of expressing an opinion designed to enhance the degree of confidence of intended users in the financial statements”. The auditors' responsibility is to obtain reasonable assurance to whether the underlying financial statements are free from material misstatements, whether due to fraud or error. Reasonable assurance is obtained through sufficient appropriate audit evidence with the intent to reduce the audit risk to an acceptably low level, which in turns enables the auditor to draw reasonable conclusions for the basis of an audit opinion. (IAASB 2007) An audit opinion can be either unmodified (i.e. unqualified) or modified (i.e. qualified opinion, adverse opinion and disclaimer of an opinion), depending on whether financial statements are free from material misstatements or whether sufficient appropriate audit evidence exists to concluded that the financial statements are free from material misstatements (IAASB 2010, ISA 705). According to International Standards on Auditing number 705, the type of modified opinion depends on the nature of the matter causing the modification, such as when the financial statements are materially misstated or may be materially misstated when the auditor is unable to obtain sufficient appropriate audit



evidence or on auditor's judgment about pervasiveness of effects or possible effects of the matter on the financial statements (Ibid.).

The audit profession is subject to several independence and ethical requirements, including AICPA's Code of Professional Conduct, The Securities and Exchange Commission for auditors who report on financial statements filed with it and the national requirements (PCAOB AS 1001; IAASB 2007). The International Ethics Standard Board of Accountants (hereafter IESBA) sets standards of conduct and offers fundamental principles applicable for professional accountants through its' Handbook of the Code of Ethics for Professional Accountants (IFAC 2006). These fundamental principles are stated in part A of the Code of Ethics for Professional Accountants and are summarized as follows: integrity – to be straightforward and honest in all professional and business relationships; objectivity – to not allow bias, conflict of interest or undue influence of others to override professional or business judgments; professional competence and due care – to maintain professional knowledge and skill at the level required and act diligently and in accordance with applicable technical and professional standards; confidentiality – to respect the confidentiality of information and professional behavior – to comply with relevant laws and regulations and avoid any actions that could discredit the profession.

The IESBA also describes different circumstances and relationships that can possibly threaten the compliance with these fundamental principles and which fall into five categories, namely: self-interest, self-review, advocacy, familiarity and intimidation. The focus in this study is on the self-interest and intimidation threat. Self-interest threat takes place when the auditor has a direct financial interest in the client, the auditor has an undue dependency on total fees from the client or there is a significant close business relationship between the client and the auditor. Intimidation threat can occur in the presence of actual or perceived threats from clients, such as a threat of dismissal from the engagement or refusal to continue contracts for other non-auditing services. In order for the auditors to protect themselves from possible and identified threats, appropriate safeguards must be applied to eliminate the threats or reduce them to an acceptable level. If this is not done, the independence of an auditor is concluded to be impaired. These safeguards can be created by the profession, provided by the legislation and regulation, or developed by a specific work environment of an audit firm. When the elimination or reduction of

a particular threat is not possible through any respective safeguards, the auditor is obliged to either decline or terminate the engagement. (Hayes et al. 2014; IFAC 2006)

## **2.2 Auditor Independence**

As the audit report containing the audit opinion is important for financial statement users to ascertain the credibility of financial information, the auditor must remain objective and independent from any form of pressure from clients attempting to influence the audit opinion in their favor (DeFond et al. 2002; DeFond and Zhang 2014). Auditor independence refers to the objectivity and integrity of an external auditor and can be further separated into two elements: independence in appearance and independence in fact, as explained in the Code of Professional Conduct (AICPA 2014). Independence in appearance refers to the avoidance of circumstance where a reasonably informed third party would conclude that the integrity, objectivity or professional skepticism of the firm has been compromised, while independence in fact is a state of mind permitting the expression of an opinion without being affected by influences compromising professional judgment making it possible for the individual to act with integrity and exercise objectivity and professional skepticism (IFAC 2006; AICPA 2014). Although controls and regulations have been put in place to govern independence in appearance, independence in fact is difficult to observe and thus, the perceived independence of an auditor by the public becomes important. The perceived independence is also vital for the auditor's reputation, as the users of the financial statements need to have trust in the reliability of the audit report (Sutton 1997; Wines 2011; PCAOB AS 1001). Auditor independence is the key factor in determining audit quality, as it lends credibility to the audit report, on which different stakeholders base their decisions on (ICAEW 2005; AICPA 2014; PCAOB AS 1001).

## **2.3 Audit Quality**

DeAngelo (1981) defines audit quality as the market-assessed joint probability that a given auditor will both discover a breach in the client's accounting system, and report the breach. The definition can further be examined by two components, namely auditor competence and auditor

independence (Simunic 1980; DeAngelo 1981; DeFond and Zhang 2014). Auditor competence is the probability of discovering misstatements or errors in the client's financial statements based on auditor's technological capabilities, industry and client-specific knowledge, applied procedures and extent of sampling (DeAngelo 1981; AICPA 2014). Auditor independence is the conditional probability of the auditor correcting or reporting the discovered misstatements or errors of client's financial statements (DeAngelo 1981; AICPA 2014; DeFond and Zhang 2014). Audit quality is what connects the two parts, as when all the breaches have been detected by the auditor and reported accurately the audit will be of high quality (DeAngelo 1981).

### **2.3.1 Measures of Audit Quality**

There is no consensus in the existing literature on a single measure for audit quality, due to audit quality not being directly observable (Wooten 2003; DeFond and Zhang 2014). Although studies on audit quality often use earnings quality with different accrual measures (e.g. Becker et al. 1998; Balsam et al. 2003) as a surrogate, it is viewed that an audit opinion could be a more accurate representation of audit quality as it is directly linked to the auditor judgment and the final outcome of the audit (Carcello et al. 2000). The likeliness of issuing a going concern opinion (hereafter GCO) by an auditor is one of the ways to measure audit quality through auditor judgment.

According to the Accounting Standards number 1001, during an audit of a company's financial statements the auditor has a responsibility to evaluate whether there exists substantial doubt about the entity's ability to continue as a going concern for one year beyond the date of issuance of financial statements. The auditor bases the evaluation on knowledge on relevant conditions and events that have occurred prior to the date of the auditor's report or exist on the date, which is obtained through auditing procedures. (PCAOB AS 1001) As the GCO acts as a clear warning to investors about the financial position of a company and its inability to meet obligations, it demonstrates both the partners' ability to detect such risk (i.e. competence including knowledge and expertise) and willingness to report it (i.e. auditor independence) (DeFond et al. 2002). Receiving a GCO is usually followed by negative reaction from the public and increased business risk, thus it is not welcomed by the clients, who now have higher

incentives to either influence the auditor to give a more favorable opinion or change to another auditor (Li 2009; Blay and Geiger 2013). This could either illustrate high audit quality by the partners' willingness to remain objective and withstanding client pressure or lead to impaired audit quality, as in order to not lose current or future audit fees from clients, a partner may be willing to compromise their independence and report more favorably for the clients that are economically important. As the GCO is more prominent among companies in financial distress (Basioudis et al. 2008), this study will measure audit quality as an engagement partners' likelihood of issuing a GCO to a financially distressed client.

## **2.4 Client's Economic Importance**

In order to continue operations, audit firms depend on the service fees paid by their clients. However, as the economic benefits gained from provided services increase, the economic dependency on the client will also rise. (Wu et al. 2014) Due to fear of losing important clientele, auditors may be willing to compromise their independence, leading to impaired audit quality (Chen et al. 2016). Thus, high fee dependency may cause a threat to auditors' actual and perceived independence by the investors (e.g. independence in fact and independence in appearance). This threat to independence is in accordance with the self-interest and intimidation threat explained in the Handbook of the Code of Ethics for Professional Accountants (see page 6). In order to protect the profession from possible damage to independence, proper safeguards need to be applied (IFAC 2006). High litigation risk has been suggested as one of the safeguards against high fee dependency created by the regulatory institutions, as auditors will have higher incentives to remain objective and diligent in order to maintain their reputation (Reynolds and Francis 2000). However, it is up to the profession as well as the working environment of the specific audit firm to provide further safeguards against possible negative effects created by client's economic importance.

### **2.4.1 Measures of Client's Economic Importance**

The common measures for client importance fall into two categories: client's size and fee dependency. Measures of client's size include total assets and cumulative sales (Chen et al. 2010;

Chen et al. 2016), total sales (Chi et al. 2012) and annual turnover (Laitinen and Laitinen 2018), while measures of fee dependency comprise of audit fees divided by the aggregate size of the partner's client (Hardies et al. 2012), audit fees divided by the total audit fees of the partner's client (Goodwin and Wu 2016), combinations of audit and non-audit fees (Hardies et al. 2016) and audit fees received from interlocked clients sharing a common audit committee member and audit partner to the audit partner's total fee revenue (Hossain et al. 2016). As client's size measures are used mostly as surrogates for fee revenue, total fees (i.e. audit and non-audit fees) are viewed to be a more direct and accurate measures of client's economic importance (Chung and Kallapur 2003; Francis and Ke 2006). Although, Sarbanes-Oxley Act of 2002 (sec. 201) has prohibited the provision of certain non-audit services to audit clients, a threat to independence from the existence of such services still exists. Furthermore, large non-audit fees from audit clients have been documented to damage the perceived independence of an auditor, by creating a conflict of interest where auditors may sacrifice their independence in order to retain clients purchasing non-audit services (Francis and Ke 2006; Li 2009). Thus, the usage of total fees as a measure for client's economic importance captures a larger magnitude of threats to independence caused by fee revenue, no matter the origin of the fee. Following the above discussion, this study will measure client's economic importance to an individual engagement partner by the total fees of a particular client divided by the sum of total fees from all clients of that engagement partner.

## **2.5 Client's Economic Importance and Audit Quality – Empirical Evidence**

Audit quality has been the centre of attention of academic research examining economic importance of a client to an auditor for decades. One of the first studies to examine fee dependency and reputation concerns at the national audit firm level is DeAngelo (1981), who argued that audit quality is dependent on the audit firm's size. According to DeAngelo (Ibid.), client specific quasi-rents earned from engagements lead to higher level of audit quality for larger audit firms, as the incumbent auditor is more concerned about reputation and has less incentives for opportunistic behavior. However, as a single client's relative importance to a local office is significantly greater and counts for higher portion of fee-revenues, as opposed to the national

firm, studies in the field started using office level as the unit of analysis (e.g. Reynolds and Francis 2000; Craswell et al. 2002; DeFond et al. 2002; Chung and Kallapur 2003; Li 2009).

The literature at the office level in most cases does not find any evidence that fee dependency impairs audit quality. In the contrary, Reynolds and Francis (2000) find that Big 5 auditors report more conservatively while auditing larger clients, when measuring audit quality with both accounting accruals and GCO. DeFond et al. (2002) reports that non-audit service fees, as well as audit fees and total fees, do not impair auditor independence, measured as the propensity to issue a GCO to distressed firms. Craswell et al. (2002) find similar evidence and report that fee dependency does not affects auditor judgment, when measuring it by propensity to issue an unqualified audit opinion. Chung and Kallapur (2003) also report that total fees and non-audit service fees do not impair independence, when measured as abnormal accruals. Li (2009) fails to find a significant relation between fee ratios and auditor's propensity to issue a GCO in period before SOX, but reports a positive association between fee ratios and audit quality in periods following the implementation of SOX. This insinuates that Big 4 auditors are more likely to issue a GCO to client paying higher audit and total fees when there is higher risk for litigation and accompanying reputation loss. The lack of significant results could also be attributable to the fact that most of the studies take place before the restructuring of the auditing profession from the year 2001-2002 (e.g. legislation by SOX and PCAOB) and thus, where conducted in an environment with lower litigation risk and regulative monitoring.

### **2.5.1 Partner Level Analysis**

Only recently has the research moved from national audit firm and local office level, to include individual partner level effect. This is mostly due to some jurisdictions not disclosing partner identity to the public or difficulties with identifying the client portfolio (Tepalagul and Lin 2015; Lennox and Wu 2017). However, examining the economic importance of a client to an individual engagement partner can have a significant impact on the understanding of partner incentives, which is important as decisions about audit engagements are made by individual engagement partners (DeFond and Francis 2005; Tepalagul and Lin 2015). Furthermore, partners do not provide a homogeneous level of audit quality across their audit firm due to fundamental

differences across partner economic incentives and other characteristics shaping auditor judgment and audit outcomes (Liu and Simunic 2005; Zerni 2012; Goodwin and Wu 2016). These differences can translate into variations across both audit pricing and quality making partner level analysis more informative (Kallapur et al. 2010).

The results of previous studies are mixed. Chen et al. (2010) document that client importance impairs audit quality in the period where legal and regulatory institutions were weak for public companies in China, but not in periods with stronger regulatory environment. This provides evidence that stronger regulatory environment with higher litigation risk can mitigate the negative effect client importance has on audit quality. Chen et al. (2016) find support that client importance is negatively associated with audit quality for listed companies in China, when using audit adjustments as measure for audit quality. In particular they find that partners are willing to compromise their independence for important clients by allowing them to manipulate current year income (i.e. downwards audit adjustments). Furthermore, Hossain et al. (2016) find a significant negative association between client network fee dependency and first-time going concern modified audit report and a significant positive association when measuring audit quality as absolute value of discretionary accruals for Australian based public companies. Together, these results suggest that client network fee dependency arising from audit committee member and audit partner interlocks impairs audit quality.

On the other hand, Chi et al. (2012) find no evidence that client importance to individual engagement partner's compromise auditor independence for Big 4, but document a negative association for non-Big 4 partners for listed and unlisted companies in Taiwan. However, Goodwin and Wu (2016) find no evidence to support an association when audit quality is measured by the likeliness of issuing a GCO for listed companies in Australia. Hardies et al. (2012) also find no evidence that client economic importance negatively affects audit quality, measured as the propensity of issuing a modified audit opinion for private companies in Belgium. Finally, Laitinen and Laitinen (2018) find weak evidence that audit quality, measured as peer review, is affected by the economic size of clients, measured by annual turnover. However, their study on private Finnish companies provides evidence that the financial self-interest threat can be mitigated by the economic wealth of the auditor, measured by unearned income.

The mixed evidence can be attributable to several factors and circumstances, like the differences in the sample, considering public or private companies in the client portfolio, research design and the legal, professional and regulatory environment of the research. As only Australian based studies (Goodwin and Wu 2016; Hossain et al. 2016) are operating in an environment of high litigation risk for the auditor, there is not much comparability amongst the existing literature. Thus, examining client's economic importance to an individual engagement partner in an environment where regulatory institutions are strong and the litigation risk is high, could bring more insight into the empirical question governing the effect client's economic importance has on audit quality.

## **2.6 Former Arthur Andersen Clients and Audit Quality – Empirical Evidence**

As capital markets price the reliability of an audit report, the auditor's reputation for quality is essential for continuing their business operations (Skinner and Srinivasan 2012). According to Francis and Krishnan (1999), factors like uncertainty and risk exposure influence audit quality. In particular, auditors lower their thresholds for issuing a GCO (i.e. are more likely to issue a GCO) when faced with higher risk and uncertainty through the mechanism of auditor-reporting conservatism (Ibid.). Auditor conservatism can be defined as auditor's preferences towards income-decreasing accounting choices, which is motivated by potential litigation costs (Kim et al. 2003). The demise of Arthur Andersen (hereafter AA) in 2002 following the Enron accounting scandal (i.e. shredding of important documents by AA) has triggered several studies to examine the effect of potential reputational damage of ex-AA clients on the auditor conservatism. Most of the research concludes that successor auditors are more risk-averse in terms of higher auditor conservatism due to perceiving ex-AA clients to possess unique audit and litigation risk (e.g. Cahan and Zhang 2006; Kealey et al. 2007; Krishnan et al. 2007; Srinidhi et al. 2012; Kamarudin et al. 2014).

Srinidhi et al. (2012) report that Big N auditors assert higher conservatism towards ex-AA clients due to lost auditor reputation. Furthermore, the effect is observed to be stronger in environments of higher uncertainty due to weak supporting institutions not incentivizing auditors to deliver high audit quality. This could mean that the effect of reputational damage is stronger in



an environment of low litigation risk. Krishnan et al. (2007) also report that Big N auditors assert higher conservatism when auditing ex-AA clients. Kealey et al. (2007) conclude that successor auditors perceive higher risk from ex-AA clients, even more so during longer auditor tenure with AA. Cahan and Zhang (2006) also examine auditor conservatism and conclude that successor auditors view ex-AA clients as a source of unique litigation risk. This is further supported by Kamarudin et al. (2014), who find successor auditors to demand more conservative financial reporting when auditing ex-AA clients due to perceived unique audit and litigation risk attributable to damaged reputation.

Although most studies so far find evidence to support audit conservatism and risk averseness towards ex-AA clients, Chen et al. (2009) fail to find such effect at the partner level and conclude that partner conservatism when auditing ex-AA clients is of temporary nature and reverses over time. However, Chen et al. (2009) also report their findings for a sample of partners who used to work for AA and had their clients follow them to new audit firms. As individual partner can have opportunistic incentives towards long-term clients, they might be willing to report more favorably in order to continue a close auditor-client relationship, meaning that client's importance could also have an important role in determining the underlying effect that ex-AA clients reputational concerns play on partners risk averseness (Chen et al. 2009). Due to lack of research, it is still to be determined whether risk averseness towards ex-AA clients exists at the partner level and whether this effect would be more pronounced in a context where client's economic importance is significant.

## **2.7 Contribution of the Study**

This study aims to contribute to the existing research on audit quality in several ways. The study responds to a call for more research on the partner level concerning client's economic importance and the possible implications on audit quality (DeFond and Francis 2005; Tepalagul and Lin 2015; Lennox and Wu 2017). As, the engagement partner in the USA are required by the PCAOB Rule 3211 to sign their name to the audit report effective from 2017, it is now possible to examine individual auditor characteristics and partner incentives more accurately for the respective country. According to Tepalagul and Lin (2015), partner incentives play a significant

role in determining the level of audit quality, thus examining client's economic importance at a partner level will provide more insight into the decision-making process and behavior of an individual engagement partner. Thus, to my knowledge this study will be the first to investigate the association between audit quality and client importance for individual engagement partners in the USA with data from fiscal year of 2017. Furthermore, as the legislative environment plays an important role in determining the relation between client importance and audit quality, the high litigation risk environment in USA will enable an interesting avenue for research and more comparability with similar countries (e.g. Australia, United Kingdom). As both audit and non-audit service fees are disclosed to the public in the USA, it is also possible to use total fees as a base for measuring fee dependency, which enables to capture the full economic benefits from a client in terms of fee revenue. Additionally, to my knowledge this is the first study to document whether partner attitude towards risk change when auditing ex-AA clients and provide evidence on the effect client's economic importance has on audit quality for the ex-AA clientele sample.

### **3. Theory and Hypotheses Development**

This part of the study discusses the theoretical background governing the association between client's economic importance and audit quality, by focusing on the economic bonding theory and reputation protection theory perspectives. Furthermore, the reputation damage spill over effect is discussed in the context of ex-AA clientele. Following the theory, the hypotheses of this research are presented based on findings of previous studies and measures of audit quality and client's economic importance discussed in the previous section (e.g. section 2).

#### **3.1 Agency Theory**

According to the agency theory, there is a potential conflict of interest between shareholders and managers due to existing information asymmetries that result in concerns over the reliability of information. The function of an auditor is to act as an independent monitoring mechanism between the two parties, with the objective of reinforcing trust and maintaining confidence in the financial information. However, as the fundamental purpose of an audit is to provide independent

assurance of the credibility of financial information, new concerns emerge about threats to auditor objectivity and independence. (Jensen and Meckling 1976; DeAngelo 1981)

### **3.1.1 Economic Bonding Theory and Reputation Protection Theory**

Economic bonding theory states that dependency between a client and an auditor through quasi rents associated with total fees from an engagement create a possible threat to auditor's independence (DeAngelo 1981). In order to not lose future quasi rents, the economic bond can influence audit partner's incentives to report more favorably towards important clients, compromising their independence (Watts and Zimmermann 1981). Favorable reporting can include allowing higher financial statement discretion for important clients, as well as willingness to compromise with the management on reporting and accounting choices (Ashbaugh et al. 2003). The higher the current revenues from the client, the higher are the future expected quasi rents and the probability that auditor's independence will be compromised (DeAngelo 1981). Furthermore, losing important clients can significantly damage the partner's current position and future career outlooks, financial compensation and benefits attached to specific clientele, as well as prestige amongst colleagues and competitive position in the market (Reynolds and Francis 2000; DeFond and Francis 2005). Chung and Kallapur (2003) further explain that the auditor's willingness to compromise independence rests upon a cost-benefit trade-off, where the auditors expectation to retain a client and obtain future revenues from them are compared to the amount of revenues expected from other clients as well as the probability of detection of compromised independence and lost revenues upon such detection. Thus, under the economic bonding theory, an engagement partner would be less willing to issue a GCO to a financially distressed client who is economically important (measured by total fees), leading to impaired audit quality.

On the other hand, litigation risk can pose as a safeguard against the negative effect of economic bonding, as auditors can be held legally liable for misleading investors through unreliable audit reports. The reputation protection theory taking the maker-based view states that due to risk of losses from litigation and accompanying reputation concerns partners might be more conservative when auditing economically important clients, even more so when their signature under the audit report is publicly disclosed in environment with high litigation risk as it

provide investors with more information to assess the perceived independence of the auditor (Reynolds and Francis 2000; Li 2009). According to Weber et al. (2008), damaged reputation from impaired independence can also result in losing other clients, who do not want to be associated with such auditors. In this case, auditors may insert higher conservatism, while auditing client's that are economically important in fear of reputational loss (Ibid.; Li 2009). Therefore, under the reputation protection theory, an engagement partner would be more willing to issue a GCO to a financially distressed client and thus be less influenced by client's economic importance (measured by total fees). Due to competing views, the association between client's importance and audit quality remains an empirical question. Based on the discussion above and in the previous section (e.g. section 2), I formulate the 1<sup>st</sup> hypothesis (stated in null form), which I test in this study:

*Hypothesis 1: There is no association between engagement partners' likeliness to issue a going concern opinion to a financially distressed client and the client's economic importance.*

### **3.2 Former Arthur Andersen Clients and Reputation Damage Spill Over**

According to the reputation damage spill over effect, the reputational damage of an entity also affects the reputation of the clients associated with them (Saito and Takeda 2014). The failure and subsequent demise of AA has damaged the reputation of the audit firm as well as created uncertainty about the quality of the firms' audits performed on former clients (Fuerman 2006; Krishnan et al. 2007). Auditors associate themselves with reputation concerns in order to stay relevant and avoid possible litigation, thus risk and uncertainty associated with a particular client increases auditor's conservatism (Francis and Krishnan 1999; Weber et al. 2008). It is reported that ex-AA clients are perceived to possess unique audit and litigation risk associated with damaged reputation spill over, resulting in a more risk averse attitude from the successor auditor who try to protect themselves from being exposed to litigation and possible loss of other clients (Cahan and Zhang 2006). The risk averseness can be illustrated by auditor judgment, where the auditor is more likely to issue a GCO to the client that is perceived to possess higher risk (Krishnan et al. 2007). However, auditor judgment can be affected by other factors such as

client's economic importance. As auditor judgment is best observed at the partner level, the partner incentives towards the client may change if the client is economically important to them (Liu and Simunic 2005; Goodwin and Wu 2016). Knechel et al. (2015) describes auditor conservatism as the increased propensity that an engagement partner gives a GCO to a client that does not go bankrupt and auditor aggressiveness as the decreased propensity that an engagement partner gives a GCO to a client that does go bankrupt. In that case, the engagement partner would be expected to report less favorably towards the client, such as being more likely to issue a GCO. Due to the existing evidence on higher auditor conservatism from perceived unique litigation risk associated with ex-AA clients, I expect an individual engagement partner to be more risk averse when auditing ex-AA clients (more likely to issue a GCO) and thus be less influenced by the economic importance of a client.<sup>1</sup> Based on the discussion above and in the previous section (e.g. section 2), I formulate the 2<sup>nd</sup> hypothesis, which I test in this study:

*Hypothesis 2: The engagement partners' likeliness to issue a going concern opinion to a financially distressed client is less influenced by the client's economic importance if Arthur Andersen formerly audited the client.*

## **4. Research Design**

This section describes the methodology applied to test the hypotheses of the research, as well as the variables used in the regression and their predicted signs.

### **4.1 Methodology**

The variable of interest (*CI*) is the economic importance of a client to an individual engagement partner. I define client importance (*CI*) to an engagement partner following Hardies et al. (2012) and Goodwin and Wu (2016), where the importance of client *i* to a partner *j* (*Eq. 1*) is:

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<sup>1</sup> The time gap between the demise of AA (i.e. 2002) and the sample period in this study can influence the potential relation, as years have already passed since the scandal and subsequent demise of AA. Thus it is uncertain whether any effect still exists. If this is the case, I would expect weaker or no relation between the engagement partners' likeliness to issue a GCO to a financially distressed client and the client's economic importance for an ex-AA client.

$$CI = \frac{TFEE_i}{\sum_{i=1}^n TFEE_i} \quad (Eq. 1)$$

where the numerator is the total fees (i.e. audit fees and non-audit service fees) of client  $i$  and the denominator is the sum of the total fees of  $n$  clients audited by a partner  $j$  in the particular year or in this case during the sample period of one year.<sup>2</sup> The dependent variable is audit quality, which I measure as the likeliness of issuing a going concern opinion ( $GCO$ ) to a financially distressed client and which acts as a dummy variable and take the value 1 if a client received the going concern opinion and 0 otherwise. As the research design includes a binary dependent variable, I estimate the following logistic regression that models the probability of issuing a  $GCO$  to a financially distressed client (*Eq. 2*):

$$GCO = \alpha_0 + \beta_1 CI + \beta_2 \text{Control variables} + \varepsilon \quad (Eq. 2)$$

When client's economic importance impairs the audit quality delivered by an individual engagement partner, in particular that the engagement partner is less likely to issue a  $GCO$ , I expect the coefficient of  $CI$  to be of negative sign and *vice versa*. In order to test the 2<sup>nd</sup> hypotheses (see page 18) I add the variable  $AA$  to the model, which is an indicator variable that takes the value 1 if the client is a former Arthur Andersen client and 0 otherwise. In order to test the interaction between client importance and ex- $AA$  clients, I add the interaction effect of  $CI*AA$  to the logistic model. The logistic regression model is estimated as follows (*Eq. 3*):

$$GCO = \alpha_0 + \beta_1 CI + \beta_2 AA + \beta_3 CI*AA + \beta_4 \text{Control variables} + \varepsilon \quad (Eq. 3)$$

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<sup>2</sup> This study acknowledges that the possible effect of client importance on audit quality can be overestimated, as it is not possible to construct a full client portfolio for an individual engagement partner due to the absence of available information on private companies and incomplete coverage of all public companies in both Compustat and Audit Analytics for the sample period, which influences the weight of a single client in the portfolio. However, I consider the sample of only public companies sufficient in order to construct a meaningful analysis on the effect of client importance on audit quality for an individual engagement partner for the sample of this study.

Hypothesis 2 predicts a negative coefficient for  $CI*AA$  indicating that the reporting of an engagement partner (i.e. likelihood of issuing a GCO) is less influenced by client importance for former Arthur Andersen clientele. All variable definitions are presented in Table 1.

**TABLE 1: Variable Definitions**

Variable	Variable Definition
<i>Dependent variable</i>	
<i>GCO</i>	Equals 1 if the engagement partner issues a going concern opinion, and 0 otherwise.
<i>Independent variables</i>	
<i>CI</i>	Client importance measured at the partner level, as total fees of client $i$ divided by the sum of the total fees of $n$ clients audited by a partner $j$ in a particular year (i.e. the sample period);
<i>AA</i>	Equals 1 if the client was audited by Arthur Andersen in year 1987 to 2002, and 0 otherwise;
<i>LNTA</i>	Size of the client measured by natural logarithm of total assets;
<i>LOSS</i>	Equals 1 if the client incurred a loss in terms of negative net income in the current or prior year, and 0 otherwise;
<i>ROA</i>	End of year net income divided by total assets;
<i>LEVERAGE</i>	End of year total liabilities divided by total assets;
<i>LIQUIDITY</i>	End of year total current assets divided by current liabilities;
<i>ISSUE_DEBT</i>	Equals 1 if the client issues new debt during the year, and 0 otherwise;
<i>PRIORGCO</i>	Equals 1 if the client received a going concern audit report in the prior fiscal year, and 0 otherwise;
<i>ZSCORE</i>	Altman's Z-score measuring financial distress of the client;
<i>CASHFLOW</i>	Cash flow from operating activities divided by total assets;
<i>TENURE</i>	Audit firm tenure measured in years;
<i>BUSY</i>	Equals 1 for the top 25% of engagement partners based on the number of clients in the client portfolio, 0 otherwise;
<i>GENDER</i>	Equals 1 if the partner is female, and 0 otherwise.

Control variables used in this study are consistent with the prior research in the field (e.g. Altman 1986; Mutchler et al. 1997; Reynolds and Francis 2000; DeFond et al. 2002; Li 2009; Blay and Geiger 2013; Sundgren and Svanström 2014; Knechel et al. 2015; Goodwin and Wu 2016; Hardies et al. 2016; Burke et al. 2017) and include factors that might influence an individual engagement partner's decisions to issue a GCO to an audit client. These control

variables can be categorized into client, audit firm and engagement partner specific variables. Detailed descriptions of the control variables are discussed in more detail below.

### **Client Size**

The client's size is reported to influence the likelihood of issuing a GCO, as engagement partners are viewed to be less likely to issue a GCO to a larger client either due to perceptions that larger companies can fight bankruptcy with more resources, are more stable than smaller clients or have higher negotiation power concerning the final audit opinion in the audit report (Mutchler et al. 1997; Reynolds and Francis 2000). Client size is measured by the natural logarithm of total assets. I expect the coefficient of the variable *LNTA* to be negative.

### **Client Financial Characteristics**

Following previous studies (e.g. Mutchler et al. 1997; Reynolds and Francis 2000; Li 2009; Blay and Geiger 2013), I include *LOSS* as a variable, as losses increase the likelihood of issuing a GCO due to higher probability of bankruptcy. The variable acts as a dummy and takes the value 1 if the client incurred a loss in terms of negative net income in the current or prior year and 0 otherwise. I predict the coefficient of the variable *LOSS* to be positive. I also include the variable *ROA*, as the higher return on the company assets can influence the partner to be less likely to issue a GCO. The variable is calculated as the end of year net income divided by total assets. I predict the coefficient of *ROA* to be negative. In order to control for the client's financial risk, I include the variable *LEVERAGE* that represents the end year total liabilities divided by total assets of the client. The higher value of *LEVERAGE* is associated with higher likelihood of issuing a GCO due to higher possible loss. To control for the clients liquidity risk, I include the variable *LIQUIDITY* that is measured as the end year total current assets divided by the total current liabilities of the client. Higher values for *LIQUIDITY* can result in lower likelihood of issuing a GCO, as the company's ability to meet financial obligations is higher. The issuance of debt by a client is also predicted to be negatively associated with the likelihood of receiving a GCO. Thus, I include the variables *ISSUE\_DEBT*, which represent the clients' ability to raise additional funding. The variable takes the value 1 if client issued new debt during the sample period and 0 otherwise.



### **Previous Year Going Concern Opinion**

I follow Reynolds and Francis (2000) and include an indicator variable *PRIORGCO* to control for prior issuance of a GCO, as the likelihood of issuing a GCO is greater when the client also received such report in the prior year. Thus, I expect the coefficient of *PRIORGCO* to be positive.

### **Probability of Bankruptcy**

Following Reynolds and Francis 2000 I include the probability bankruptcy score *ZSCORE* by Altman (1968) to measure the financial distress of the client. The bankruptcy score is a weighted average of different accounting ratios, composed of balance sheet and income statement items.<sup>3</sup> The single cut off value stated by Altman for predicting financial distress is 2.67 (i.e. safe for  $Z > 2.67$  and distressed for  $Z < 2.67$ ). However a broader range is commonly used indicating a company with a Z-score higher than 2.99 to be in the “safe” zone, a Z-score lower than 2.99 but higher than 1.8 to be in the “gray” zone (i.e. on alert with chances of going bankrupt within 2 years) and a Z-score lower than 1.8 to have a high probability of financial distress. As the score does not include cash flow measure, I also include the variable *CASHFLOW* that measures the cash flows from operations scaled by total assets (i.e. business efficiency), where higher values are inversely related to the probability of bankruptcy. (Altman 1986)

### **Auditor Tenure**

Previous studies have found that auditor tenure is associated with the likelihood of issuing a GCO by the engagement partner (e.g. Knechel et al. 2015; Goodwin and Wu 2016). Thus, I control for the number of years the company has been a client of the particular audit firm. I do not predict the coefficient of the variable *TENURE* because it is not known which direction the variable could take as longer tenure could either influence the partner to report more favorable due to close client relationship or assert higher audit quality due to better client specific knowledge accumulated over the years.

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<sup>3</sup> The Altman’s Z-score follows the formula:  $Z\text{-score} = 1.2 * (\text{working capital} / \text{total assets}) + 1.4 * (\text{retained earnings} / \text{total assets}) + 3.3 * (\text{earnings before interest and taxes} / \text{total assets}) + 0.6 * (\text{market value of equity} / \text{total liabilities}) + 0.99 * (\text{sales} / \text{total assets})$ , where lower values are associated with higher probability of financial distress.

## **Partner Busyness**

The workload of a partner is documented to influence the GCO, however the evidence on the association is mixed on whether partners assert higher or lower degree of effort due to busyness (e.g. Sundgren and Svanström 2014; Goodwin and Wu 2016; Burke et al. 2017). I add *BUSY* as a measure of the number of client's in the engagement partner client portfolio to control for possible effect of busyness on their likeliness to issue a GCO. Following Hardies et al. 2016, the variable *BUSY* acts as a dummy variable, which takes the value 1 if the engagement partner is amongst the top 25% of audit partners based on the number of clients/assignments and 0 otherwise. I do not predict the behavior of the variable.<sup>4</sup>

## **Partner Gender**

As partner characteristics are documented to influence audit quality and subsequently the reporting decisions of the partner, I add variables related to the partner identity to the regression model, which may influence the partner's decision to issue a GCO. Partner gender is documented to influence audit quality, as female partners tend to be more risk averse than male partners (Hardies et al. 2016; Burke et al. 2017). Thus, *GENDER* is a variable capturing the partner gender and acts as a dummy variable taking the value 1 if the partner is female and 0 otherwise.<sup>5</sup> I predict the coefficient of *GENDER* to be positive, meaning that female partners are more likely to issue a GCO to a financially distressed client.

## **5. Sample Selection**

This section describes the sample selection and collection process. Furthermore, a detailed overview of each step in the process of deriving the final sample is given. The section ends with a detailed description of the sample distribution of engagement partners between Big 4 audit firms and cities in the USA.

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<sup>4</sup> This study acknowledges that the effect of partner busyness will be underestimated, as it is not possible to construct a full client portfolio for each partner due to the absence of available information on private companies and incomplete coverage of all public companies from both Compustat and Audit Analytics for the sample period. The top 25% is computed based on the sample and is equal to 1 if the engagement partner has 3 or more clients.

<sup>5</sup> Engagement partner's gender is identified through scaling (i.e. female=1/ male=-1) the full name (i.e. first, middle and last name with suffix) through the website [www.namesor.com](http://www.namesor.com).

## 5.1 Sample Collection

The sample of this study contains companies audited by engagement partners, who work for one of the Big 4 audit firms in the USA (i.e. PwC, KPMG, E&Y, Deloitte). Engagement partners working for non Big 4 audit firms are not considered in this study due to differences arising from size, market share and other characteristics of these audit firms affecting the level of audit quality delivered by an individual engagement partner as well as the fee revenue level (Francis and Yu 2009). The sample period ranges from 15.01.2017 to 14.01.2018, whereas a companies affiliation in the sample is identified by the fiscal period end date.<sup>6</sup> The data on partner identity is collected from PCAOB AuditorSearch database, where individual Form AP filings are accessible. Data on GCO and fee revenue are downloaded from Audit Analytics database and then merged with the PCAOB AuditorSearch database. Relevant financial statement data are collected from Compustat – Capital IQ North America database. Partner characteristics, such as partner gender is identified through scaling the engagement partner’s full name through the website of [www.namesor.com](http://www.namesor.com).

Employee Benefit Plan and Investment Companies are excluded from the sample due to different audit-client requirements and no coverage in the Compustat database for financial data. The sample is further restricted to financially distressed companies, as the GCO is more prominent among them and the standards defining auditor responsibilities specify financial distress as one of the main indicators for assessing whether the company can continue as a going concern (Basioudis et al. 2008; PCAOB AS 1001). I define these companies following previous research of Raghunandan and Rama (1995) and Carcellot et al. (2000) as companies with negative cash flow from operations, negative net income, negative working capital or negative retained earnings. This process yields a final sample of 1066 company-engagement partner

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<sup>6</sup> Due to the Rule 3211 coming into force from the calendar year of 2017, the availability of data on partner identity in PCAOB AuditorSearch is restricted. The time period of 15.01.2017 to 14.01.2018 is chosen to be most suitable, as it is highly likely that the vast majority of companies in the sample will have coverage in all databases (i.e. Audit Analytics, PCAOB AuditorSearch and Compustat) for the respective time interval. Furthermore, as the fiscal year end data of most public companies in the USA falls to either the month of March, June, September or December, the respective time period will cover all of those months for the calendar year of 2017 making the sample more coherent to the calendar year of 2017.

observations with 798 unique engagement partners.<sup>7</sup> The sample selection process containing data for both hypothesis 1 and 2 is presented in Table 2.

**TABLE 2: Sample Selection**

Description	Going Concern Opinion Sample
Total Company-Partner Observations (15.01.2017-14.01.2018)	5735
Less	
Employee Benefit Plan and Investment Companies	(2633)
Incomplete Total Fee Revenue and Opinion Data	(311)
Incomplete Partner data	(43)
Incomplete Audit data	(125)
Incomplete Financial Data	(814)
Financially Not Distressed Companies	(743)
Final Sample	_____
Full Sample Company-Partner Observations	1066
Ex-Arthur Andersen clients	105
Non ex-Arthur Andersen clients	961

Note: The beginning sample of 5735 company-partner observations is constructed by merging PCAOB AuditorSearch and Audit Analytics database for the sample period of 15.01.2017-14.01.2018, where unmerged observations and duplicate observations have been removed in order to construct a sample containing unique values for each company with a fiscal year end data falling on the time interval of the sample period. Partner related data contains gender and partner busyness data. Audit related data contains auditor tenure and prior going concern opinion data. Financial data contains Compustat variables data.

In order to collect data for the 2<sup>nd</sup> hypotheses, I screen the Audit Analytics database for data on all firms in the sample and their previous auditor in the year from 1987, as this is the earliest date from which data is available at Audit Analytics to year 2002, the subsequent demise of

<sup>7</sup> The variables of client importance (*CI*) and partner busyness (*BUSY*) are computed before restricting the sample to financially distressed companies (i.e. final sample of 1066 companies), thus the *CI* and *BUSY* variables for each observation are based on the full sample of 1808 companies.

Arthur Andersen. This yields a subsample of 105 companies, which were previously audited by Arthur Andersen during time period of 1987-2002.

## 5.2 Sample Distribution

Table 3 presents the distribution of engagement partners between Big 4 audit firms (Panel A) and cities in the USA (Panel B) with average values for both public clients per engagement partner and ex-AA clients in the sample. Panel A shows the distribution of engagement partners in the final sample across all Big 4 audit firms (i.e. Deloitte, Ernst & Young, KPMG, PricewaterhouseCoopers). E&Y is the leading audit firm with 252 individual engagement partners in the sample. Other three audit firms follow a similar distribution with PwC having 185 partners, Deloitte 184 and KPMG 177 partners, respectively. The largest proportion of the companies in the final sample are audited by E&Y with 382 public companies, which is almost 15% (rounded) more than other audit firms. On average E&Y has the highest number of clients per partner with a mean value of 2.254 followed by PwC with an average value of 1.934 clients per engagement partner. Deloitte has the lowest number of public clients per partner in the sample with an average of 1.682 clients per engagement partner. Most of the former Arthur Andersen clients in the sample are audited by E&Y and KPMG with 36 and 27 ex-AA clients, respectively. Furthermore, about 12.4% (rounded) of KPMG public clients have been formerly audited by Arthur Andersen, whereas PwC has the lowest percentage with 7,8% (rounded) of its' public clients being formerly audited by Arthur Andersen.

Panel B presents the distribution of engagement partners in the final sample across cities in the USA. The results are reported for cities with more than 15 engagement partners (i.e.  $N > 15$ ). The largest portion of engagement partners are situated in Boston with 59 partners in total, followed by 52 partners in Huston and 51 partners in San Jose. Engagement partners in Boston also audit the highest number of clients, with 104 public clients and an average of 2.769 clients per partner. Engagement partners in Huston audit the highest number of ex-AA clients, as about 22,4% (rounded) of the public clients have been formerly audited by AA.

**TABLE 3: Sample Distribution**

<i>Panel A = Distribution by audit firm</i>					
	Partners	Public Clients		Ex-AA Clients	
Audit Firm	N	N	Mean	N	Mean
<i>Deloitte</i>	184	223	1.682	23	0.103
<i>E&amp;Y</i>	252	382	2.254	36	0.094
<i>KPMG</i>	177	217	1.705	27	0.124
<i>PwC</i>	185	244	1.934	19	0.078
<i>Total</i>	798	1,066	1.949	105	0.098

  

<i>Panel B = Distribution by city</i>					
	Partners	Public Clients		Ex-AA Clients	
City	N	N	Mean	N	Mean
<i>Atlanta</i>	19	22	1.773	3	0.136
<i>Boston</i>	59	104	2.769	7	0.067
<i>Chicago</i>	36	41	1.659	4	0.098
<i>Dallas</i>	38	45	1.689	3	0.067
<i>Denver</i>	26	33	1.909	6	0.182
<i>Houston</i>	52	67	1.612	15	0.224
<i>Los Angeles</i>	36	43	1.581	4	0.070
<i>Minneapolis</i>	19	22	1.773	3	0.182
<i>New York</i>	40	46	1.522	2	0.043
<i>Philadelphia</i>	32	47	2.064	5	0.106
<i>San Diego</i>	18	37	2.919	2	0.054
<i>San Francisco</i>	32	41	1.829	1	0.024
<i>San Jose</i>	51	74	2.014	1	0.014
<i>Seattle</i>	19	24	1.792	3	0.125
<i>Other</i>	321	420	1.780	46	0.133
<i>Total</i>	798	1,066	1.949	105	0.098

Notes: This table presents the distribution of engagement partners categorized by audit firm (Panel A) and city (Panel B) with average values for public clients per partner and former Arthur Andersen clients in the sample. The results in Panel B are reported for cities with more than 15 engagement partners ( $N > 15$ ). The sample is restricted to companies in financial distress, defined as those with either negative net income, negative cash flow from operations, negative working capital or negative retained earnings for the sample period of 15.01.2017-14.01.2018.

## 6. Empirical Results

This part of the study discusses the empirical results. The first part of this section presents the descriptive statistics with univariate analysis and their interpretations, followed by the correlation analysis. The second part of the section gives the results of the logistic regression. The section ends with an overview of the robustness checks.

### 6.1 Descriptive Statistics

Table 4 presents the descriptive statistics of all independent variables in this study. The results are reported for the total sample of 1,066 companies in financial distress, defined as those with either negative net income, negative cash flow from operations, negative working capital or negative retained earnings for the sample period of 15.01.2017-14.01.2018, as well as separated between the GCO sample and no GCO sample. The results show that 1,011 companies did not receive a GCO during the sample period and 55 did, which is about 5% of the final sample. This is similar to the results reported by other studies, such as Reynolds and Francis (2000), DeFond et al. (2002) and Li (2009). The mean of *CI* is 0.638, which suggests that on average a client represents 63,8% of an engagement partner's client portfolio. Based on the percentage it can be said that the economical importance and thus the impact of losing a single public client is rather high for an individual engagement partner.<sup>8</sup> Table 4 also reports the difference in means between companies with a GCO and no GCO and respective *p*-values. The mean difference of 0.105 between *CI* variable is statistically significant ( $p = 0.033$ ) and shows slight evidence that higher economic dependency reduces the likelihood of issuing a GCO to a distressed client. The mean of *AA* for the full sample is 0.098, suggesting that on average 9.8% (rounded) of the sample has been formerly audited by AA. The univariate results show that companies that have been formerly audited by AA are less likely to receive a GCO with the mean difference of 0.085 being highly significant ( $p = 0.000$ ).

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<sup>8</sup> The percentage is high due to fewer public clients per engagement partner, as well as public clients possibly paying larger fee revenues. If a full client portfolio was used consisting of both public and private clients, the percentile importance of a single client to an engagement partner would be smaller. However, private clients are unobservable using USA data.

**TABLE 4: Descriptive Statistics and Univariate Analysis**

Variable	Full Sample (N = 1,066)			GCO Sample (N = 55)			NO GCO Sample (N = 1,011)			Difference in Means	
	Mean	Median	Std.	Mean	Median	Std.	Mean	Median	Std.	Diff.	[ <i>p</i> -value]
<i>CI</i>	0.638	0.643	0.342	0.538	0.417	0.348	0.643	0.648	0.341	0.105*	[0.033]
<i>AA</i>	0.098	0.000	0.298	0.018	0.000	0.135	0.103	0.000	0.304	0.085***	[0.000]
<i>GENDER</i>	0.178	0.000	0.383	0.255	0.000	0.440	0.174	0.000	0.379	-0.080	[0.188]
<i>PRIORGCO</i>	0.040	0.000	0.197	0.436	0.000	0.501	0.019	0.000	0.136	-0.418***	[0.000]
<i>TENURE</i>	15.057	10.748	17.103	8.381	7.044	7.176	15.420	10.956	17.410	7.040***	[0.000]
<i>BUSY</i>	0.250	0.000	0.433	0.364	0.000	0.485	0.244	0.000	0.430	-0.119	[0.079]
<i>LNTA</i>	6.991	6.916	1.992	4.405	4.420	1.414	7.132	7.021	1.922	2.726***	[0.000]
<i>ROA</i>	-0.139	-0.024	0.385	-0.896	-0.837	0.800	-0.097	-0.017	0.299	0.799***	[0.000]
<i>LEVERAGE</i>	0.632	0.605	0.400	0.990	0.760	0.844	0.612	0.604	0.351	-0.377**	[0.002]
<i>LIQUIDITY</i>	3.216	1.829	4.377	3.348	2.373	4.366	3.209	1.820	4.380	-0.139	[0.819]
<i>CASHFLOW</i>	-0.053	0.051	0.324	-0.688	-0.570	0.743	-0.019	0.056	0.241	0.669***	[0.000]
<i>LOSS</i>	0.596	1.000	0.491	0.964	1.000	0.189	0.576	1.000	0.494	-0.388***	[0.000]
<i>ISSUE_DEBT</i>	0.595	1.000	0.491	0.436	0.000	0.501	0.603	1.000	0.489	0.167*	[0.019]
<i>ZSCORE</i>	2.827	1.896	10.523	-9.031	-4.260	21.787	3.472	2.012	9.127	12.503***	[0.000]

Notes: This table presents descriptive statistics of independent and control variables and test of difference in means (t-test) with unequal variances between sub samples of companies with going concern opinion and no going concern opinion. Fee and opinion information is obtained from Audit Analytics and financial information is obtained from Compustat. The sample is restricted to companies in financial distress, defined as those with either negative net income, negative cash flow from operations, negative working capital or negative retained earnings for the sample period of 15.01.2017-14.01.2018. The *p*-values of means differences are reported in brackets. \*, \*\*, \*\*\* indicate significance at 10%, 5% and 1% levels (two-tailed), respectively. See Table 1 for variable definitions.



The results could be due to the long time period since the demise of AA in 2002, which has reversed the conservatism of an engagement partner towards ex-AA clients over the years or alternatively, due to stronger client-partner relationship between ex-AA clients and their engagement partners. However, these possibilities are not mutually exclusive to each other. The average tenure of companies in the full sample is 15 years (rounded) with approximately 8 years for the companies that received a GCO and 11 years for companies that did not. The mean difference of 7.040 is highly significant with a  $p$ -value of 0.000 being less than 0.001. This is in line with the overall view that longer tenure decreases the probability of issuing a GCO, as engagement partners get closer to their clients and thus become more lenient by reporting more favorably. Furthermore, the results show that 4% (rounded) of the sample has a prior going concern opinion with the mean difference of -0.418 and statistically significant  $p$ -value of 0.000 for *PRIORGCO*. Hence, it is more likely that engagement partners issue a GCO to a company that has already received such an opinion in the previous fiscal year and less likely to issue a first time GCO to financially distressed company.

Other engagement partner related control variables like *GENDER* and *BUSY* show that companies that received a GCO were more likely to be audited by an engagement partner classified as busy (36,4% versus 24,4%) as well as by a female engagement partner (25,5% versus 17,4%). This is consistent with the view that female partners and busy partners with more assignments tend to be more conservative (e.g. Hardies et al. 2016). The results for the bankruptcy risk score are in accordance with predicted scales (Altman 1986) and show that companies in the GCO sample have significantly lower values for *ZSCORE* (higher probabilities of bankruptcy) with the mean of -9.031, whereas companies in the no GCO sample have a mean of 3.472 for the *ZSCORE*. The mean difference of 12.503 is highly significant with a  $p$ -value of 0.000 being less than 0.001. The results for the variable *CASHFLOW* are as expected, inversely related to the issuance of a GCO with the mean of -0.668 for the GCO sample and the mean difference with the no GCO sample of 0.669 being highly significant ( $p = 0.000$ ), which implies that *ZSCORE* and *CASHFLOW* are both good predictors of the likelihood of issuing a GCO in an univariate analysis.<sup>9</sup>

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<sup>9</sup> Univariate analysis does not take into account the effect of other independent variables in the model.

Other control variables show that GCO sample companies are on average smaller in terms of *LNTA*, are more highly leveraged, measured by *LEVERAGE* and have lower return on assets measured by *ROA*. Furthermore, companies that received a GCO are more likely to report negative net income in the current year than companies, which did not receive a GCO (96,4% versus 57,6%). The difference of means of -0.388 for the *LOSS* variables is also highly significant ( $p = 0.000$ ). These results are in line with other studies in the field, like Li (2009), Goodwin and Wu (2016) and Hossain et al. (2016). However, in contrast to other findings the liquidity risk for the sample of distressed companies, measured by *LIQUIDITY* is slightly higher for companies which received a GCO, suggesting that the liquidity position of a company might not play a significant role in the likeliness of issuing a GCO by the engagement partner ( $p = 0.819$  statistically un-significant). Furthermore, the companies with a GCO are less likely to issue new debt measured by *ISSUE\_DEBT*, suggesting that the ability of companies to raise new funding might not be a significant indicator in the likelihood of issuing a GCO.

Table 5 presents the Pearson Correlation Matrix for the dependent and independent variables. All independent variables of the model, besides *GENDER* ( $r = 0.047$ ,  $p = 0.129$ ) and *LIQUIDITY* ( $r = 0.007$ ,  $p = 0.818$ ), are significantly correlated with *GCO*. None of the correlations of independent variables are higher than 0.5, thus classifying the strength of a relationship as rather moderate. *PRIORGCO* has the highest correlation with  $r = 0.469$  and  $p = 0.000$ . This is expected, as a GCO is more frequent for companies who have already received such opinion in the previous fiscal year. Other independent variables with high correlation include *ROA* ( $r = -0.459$ ,  $p = 0.000$ ) and *CASHFLOW* ( $r = -0.459$ ,  $p = 0.000$ ), which are both negatively correlated with *GCO* meaning that companies with high return on assets and cash flows from operations tend to receive less GCO-s. Other correlations between the independent variables and *GCO* although significant, are weak to extremely weak, such as *BUSY* ( $r = 0.061$ ,  $p = 0.047$ ) and *AA* ( $r = -0.063$ ,  $p = 0.040$ ). The *ZSCORE* is negatively correlated with the *GCO* with  $r = -0.263$  and  $p = 0.000$ , however the correlation is rather weak (higher than  $r = -0.40$ ). *CI*, the variable of interest in the model, has negative but extremely weak correlation with *GCO* with  $r = -0.068$  and  $p = 0.026$ .

**TABLE 5: Pearson Correlation Matrix**

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. <i>GCO</i>	1.000														
2. <i>CI</i>	-0.068 (0.026)	1.000													
3. <i>AA</i>	-0.063 (0.040)	0.041 (0.182)	1.000												
4. <i>GENDER</i>	0.047 (0.129)	0.001 (0.961)	-0.031 (0.319)	1.000											
5. <i>PRIORGCO</i>	0.469 (0.000)	-0.041 (0.176)	-0.036 (0.243)	0.042 (0.175)	1.000										
6. <i>TENURE</i>	-0.091 (0.003)	0.106 (0.001)	-0.037 (0.227)	-0.061 (0.045)	-0.102 (0.001)	1.000									
7. <i>BUSY</i>	0.061 (0.047)	-0.602 (0.000)	-0.075 (0.015)	0.008 (0.795)	0.047 (0.129)	-0.088 (0.004)	1.000								
8. <i>LNTA</i>	-0.303 (0.000)	0.375 (0.000)	0.170 (0.000)	-0.101 (0.001)	-0.209 (0.000)	0.373 (0.000)	-0.249 (0.000)	1.000							
9. <i>ROA</i>	-0.459 (0.000)	0.168 (0.000)	0.116 (0.000)	-0.114 (0.000)	-0.261 (0.000)	0.182 (0.000)	-0.137 (0.000)	0.492 (0.000)	1.000						
10. <i>LEVERAGE</i>	0.209 (0.000)	0.160 (0.000)	0.067 (0.029)	-0.058 (0.060)	0.161 (0.000)	0.107 (0.000)	-0.130 (0.000)	0.141 (0.000)	-0.084 (0.006)	1.000					
11. <i>LIQUIDITY</i>	0.007 (0.818)	-0.195 (0.000)	-0.095 (0.002)	0.049 (0.107)	0.030 (0.331)	-0.159 (0.000)	0.196 (0.000)	-0.335 (0.000)	-0.136 (0.000)	-0.387 (0.000)	1.000				
12. <i>CASHFLOW</i>	-0.457 (0.000)	0.195 (0.000)	0.108 (0.000)	-0.113 (0.000)	-0.299 (0.000)	0.174 (0.000)	-0.185 (0.000)	0.524 (0.000)	0.818 (0.000)	-0.012 (0.696)	-0.227 (0.000)	1.000			
13. <i>LOSS</i>	0.175 (0.000)	-0.200 (0.000)	-0.132 (0.000)	0.064 (0.037)	0.111 (0.000)	-0.207 (0.000)	0.167 (0.000)	-0.469 (0.000)	-0.463 (0.000)	-0.150 (0.000)	0.242 (0.000)	-0.366 (0.000)	1.000		
14. <i>ISSUE_DEBT</i>	-0.075 (0.014)	0.199 (0.000)	0.106 (0.001)	-0.040 (0.192)	-0.074 (0.016)	0.166 (0.000)	-0.189 (0.000)	0.461 (0.000)	0.234 (0.000)	0.285 (0.000)	-0.296 (0.000)	0.251 (0.000)	-0.248 (0.000)	1.000	
15. <i>ZSCORE</i>	-0.263 (0.000)	-0.064 (0.037)	-0.038 (0.221)	0.001 (0.974)	-0.211 (0.000)	-0.045 (0.143)	0.082 (0.008)	0.029 (0.337)	0.284 (0.000)	-0.457 (0.000)	0.358 (0.000)	0.306 (0.000)	0.010 (0.745)	-0.146 (0.000)	1.000

Notes: This table presents the Pearson Correlation Matrix for all independent and control variables. *p*-values are reported in parenthesis. See Table 1 for variable definitions.

Although the assumption of normal distribution of the independent variables is not applicable to the logistic regression model used in this study, there is a risk of high inter-correlation amongst the predictor variables posing as a threat to the reliability of any statistical inferences drawn from the data. By observing the correlations in Table 5, the highest correlation for independent variables is between *CASHFLOW* and *ROA* ( $r = 0.818$ ,  $p = 0.000$ ), which is on the boarder of very high correlation scale of 0.80. This is understandable as total assets scale both ratios. In order to test for multicollinearity, I calculate the variance inflation factors (hereafter VIF) for the predictor variables.<sup>10</sup> The highest VIF observed in the regression is 5.40 for the variable *AA*, the indicator for the former Arthur Andersen clients and 3.67 for *CASHFLOW*. These are however below the suggested threshold of 10 for multicollinearity problem (Kennedy 2003), as well as the mean of VIF, which is 2.31 for all the variables.<sup>11</sup> Thus, I conclude that it is unlikely that multicollinearity exists among the predictor variables of the model.

## 6.2 Logistic Regression Results

The results of the logistic regression models are reported in Table 6. Model 1 represents the 1<sup>st</sup> hypothesis where the impact of client importance on the going concern opinion with the full sample of  $N=1,066$  companies in financial distress is estimated. Model 2 represents the 2<sup>nd</sup> hypothesis where the variable *AA* indicating former Arthur Andersen clients is included and the interaction effect between *AA* and *CI* on the going concern opinion with the full sample of  $N=1,066$  companies in financial distress is estimated. The results indicate that both models do a reasonably good job at explaining the likelihood of a going concern opinion. The pseudo  $R^2$  for both models is 49.56% and 50.12%, respectively. These are comparable to other studies on client importance with USA data like DeFond et al. (2002) and higher than similar studies on the partner level like Chen et al. (2010), Hardies et al. (2016) and Hossain et al. (2016). Both models fit the data well with highly significant  $p$ -values $<0.001$  and classification accuracy of 96.06%.

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<sup>10</sup> The VIFs are based on the R-squared and are calculate with the ordinary least squares (hereafter OLS) regression, as it is impossible to calculate the factors with a logistic regression, which estimates the parameters using maximum-likelihood. However, as the problem of multicollinearity is applicable to the independent variables, it should not pose as a problem (Li 2009).

<sup>11</sup> The reported VIFs are for regressing the Model 2 with variable *AA* and interaction effect between *AA\*CI*. The overall mean VIF for Model 1 is 1.81, with highest variable VIF for *CASHFLOW* at 3.66 (under the threshold of 10).

**TABLE 6: Logistic Regression Analysis for the Impact of Client Importance on the Going Concern Opinion**

Dependent variable = <i>GCO</i>		Model 1 (N=1,066)			Model 2 (N=1,066)		
Variable	Expected sign	Coeff.	Z-statistic	[p-value]	Coeff.	Z-statistic	[p-value]
<i>CI</i>	?	0.879	1.221	[0.222]	0.797	1.090	[0.276]
<i>AA</i>	+				-1.744	-0.809	[0.418]
<i>AA x CI</i>	-				-0.251	-0.064	[0.949]
<i>GENDER</i>	+	-0.057	-0.123	[0.902]	-0.063	-0.136	[0.892]
<i>PRIORGCO</i>	+	3.081***	6.140	[0.000]	3.105***	6.052	[0.000]
<i>TENURE</i>	?	-0.000	-0.012	[0.991]	0.001	0.023	[0.982]
<i>BUSY</i>	?	0.279	0.521	[0.602]	0.212	0.393	[0.694]
<i>LNTA</i>	-	-0.611***	-3.301	[0.001]	-0.632**	-3.288	[0.001]
<i>ROA</i>	-	-0.594	-1.009	[0.313]	-0.566	-0.946	[0.344]
<i>LEVERAGE</i>	+	1.040**	2.698	[0.007]	1.117**	2.895	[0.004]
<i>LIQUIDITY</i>	-	-0.035	-0.631	[0.528]	-0.031	-0.569	[0.570]
<i>CASHFLOW</i>	-	-1.488	-1.924	[0.054]	-1.320	-1.657	[0.097]
<i>LOSS</i>	+	1.426	1.670	[0.095]	1.535	1.757	[0.079]
<i>ISSUE_DEBT</i>	-	0.489	1.167	[0.243]	0.486	1.163	[0.245]
<i>ZSCORE</i>	-	-0.000	-0.014	[0.989]	-0.007	-0.336	[0.737]
<i>Pseudo R<sup>2</sup></i>		0.4956			0.5012		
<i>Correctly classified %</i>		96.06%			96.06%		

Notes: This table presents the logistic regression for Eq. 2 and Eq. 3 (see page 19) with full sample of N=1,066 companies. The sample is restricted to companies in financial distress, defined as those with either negative net income, negative cash flow from operations, negative working capital or negative retained earnings for the sample period of 15.01.2017-14.01.2018. The p-values are reported in brackets. \*, \*\*, \*\*\* indicate significance at 10%, 5% and 1% levels (two-tailed), respectively. See Table 1 for variable definitions.

For both Model 1 and Model 2 the client importance variable (*CI*) coefficients are statistically insignificant ( $p = 0.222$  and  $p = 0.276$ , respectively) suggesting that client importance does not have any impact on the likelihood of issuing a going concern opinion to a financially distressed client, thus accepting the 1<sup>st</sup> hypothesis – stated as a null. Overall, the evidence does not support the economic bonding theory stating that engagement partner’s independence and thus, audit quality is impaired for economically important clients. The results rather align with the reputation protection theory, which takes the market based view suggesting that high litigation risk and accompanying reputational concerns act as a safeguard against the possible threat to independence caused by economically important clients. The results are inline with the findings of DeFond et al. (2002), who use USA data to examine the impact of fee ratios on auditor independence, but on audit firm level. It could be that the high litigation risk, as well as the risk of reputational damage is higher when auditing public clients that due to their size, visibility and impact on the economy also attract more attention and thus more scrutiny from the public. The recent disclosure of the engagement partner identity to the public with the incentive to increase accountability of a partner could also be an alternative explanation. However, different explanations are not mutually exclusive to each other.<sup>12</sup> The results are also comparable to Chen et al. (2010), Chi et al. (2012), Hardies et al. (2012) and Goodwin and Wu (2016) who report no significant association between client’s economic importance and audit quality in other settings.

For Model 2 the ex-AA client dummy variable (*AA*) coefficient is insignificant. The interaction effect of *CI* and *AA* variables on the going concern opinion is also statistically insignificant. The results suggest that for former AA clients, *CI* has no effect on the odds that a company in financial distress receives a going concern opinion, thus rejecting the 2<sup>nd</sup> hypothesis. In other words, there is no evidence that an engagement partner’s reporting is less influenced by client importance when AA formerly audited the client. Therefore, the evidence does not support the reputation damage spill over theory, suggesting that ex-AA clients are perceived to possess unique audit and litigation risk by engagement partners nor that the client’s economic importance

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<sup>12</sup> Due to absent time-series data (i.e. only one year data) I am unable to control for client fixed effects. Therefore, this paper acknowledges that the results could be affected by the endogenous matching between the client and the engagement partner, where riskier clients are matched with more conservative engagement partners or riskier clients pick less conservative engagement partners. This is common to other studies in the field and thus, no causal inferences should be drawn from the results.

influences the reporting decision of the engagement partner. Rather, the evidence suggests that the long time period since the demise of AA has reversed any possible conservative attitude towards ex-AA clients and thus such effect can no longer be observable.

From control variables, *PRIORGCO*, *LNTA* and *LEVERAGE* are statistically significant in both models, which is inline with the results of previous studies (e.g. DeFond et al. 2002; Li 2009; Hardies et al. 2016; Goodwin and Wu 2016).<sup>13</sup> The variable *PRIORGCO* indicating whether the client received a prior going concern opinion is highly significant with similar positive coefficients of  $\beta = 3.081$  ( $p = 0.000$ ) and  $\beta = 3.105$  ( $p = 0.000$ ) for both models, respectively. The evidence suggests that the odds of receiving a GCO is more likely when such an opinion was also received in the previous fiscal year, thus engagement partners are more reluctant to issue first time going concern opinions to companies in financial distress. Variables *LEVERAGE*, measuring the client's financial risk is statistically significant in both models with  $p$ -values less than 5%, indicating that companies with higher leverage are more likely to receive a GCO. Variable *LNTA*, measuring the client's size has a negative coefficient in both models ( $\beta = -0.611$  and  $\beta = -0.632$ ), which are both statistically significant, although Model 1 has slightly higher statistical significance. The results entail that larger companies are less likely to receive a GCO. Other control variables in both Model 1 and Model 2 (*GENDER*, *TENURE*, *BUSY*, *ROA*, *LIQUIDITY*, *CASHFLOW*, *LOSS*, *ISSUE\_DEBT*, *ZSCORE*) are statistically insignificant.

In sum, there is no evidence to support that client importance has a negative effect on the odds of issuing a GCO to a financially distressed client. Rather, the evidence suggests that high litigation risk and accompanying reputational concerns seem to safeguard against possible economic bonding effect. Furthermore, the results do not support the concerns that ex-AA clients are perceived to possess unique audit and litigation risk by engagement partners and thus partners are less influenced by client's economic importance when issuing a GCO. Rather, the evidence suggests that the long time period since the demise of AA has reversed any possible conservatism towards ex-AA clientele. The evidence does however suggest that the odds of issuing a GCO are influenced by the existence of a prior GCO, client's size and financial risk in terms of leverage.

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<sup>13</sup> The variable coefficients of a logistic regression using maximum likelihood should be interpreted with caution as they are presented in log-odds, where the dependent variable (*GCO*) is on the logit scale. For better interpretation the results can be converted into odds ratios, however due to insignificant variables of interest in both Model 1 and Model 2, the odds ratios as well as the magnitude effect of the variables are not presented.

### 6.3 Robustness Checks

In order to test the robustness of the results, I examine whether the variable of client importance in the main tests is robust to different measurement specification. I re-construct the client's economic importance variable in terms of audit fees (*AFEE*) divided by the sum of total fees (*TFEE*) of all clients of the engagement partner. I define *CI\_FEE* as client importance to an engagement partner, where the importance of client *i* to a partner *j* (*Eq. 4*) is:

$$CI\_AFEE = \frac{AFEE_i}{\sum_{i=1}^n TFEE_i} \quad (Eq. 4)$$

where the numerator is the audit fees of client *i* and the denominator is the sum of the total fees of *n* clients audited by a partner *j* in the particular year or in this case during the sample period of one year. Furthermore, as the client importance measure in the main tests is composed as a ratio of total fees, I minimize possible measurement errors by scaling audit fees from a single client with the sum of all audit fees from all clients of the engagement partner. I define *CI\_AFEE* as client importance to an engagement partner, where the importance of client *i* to a partner *j* (*Eq. 5*) is:

$$CI\_AFEE = \frac{AFEE_i}{\sum_{i=1}^n AFEE_i} \quad (Eq. 5)$$

where the numerator is the audit fees of client *i* and the denominator is the sum of the audit fees of *n* clients audited by a partner *j* in the particular year or in this case during the sample period of one year. I also add the variable *CI\_TFEE* to the robustness checks, calculated as in the main analysis (*Eq. 1*). When client's economic importance impairs the audit quality delivered by an individual engagement partner, in particular that the engagement partner is less likely to issue a GCO, I expect the underlying coefficients of the different *CI* variables to be of negative sign and *vice versa*. The logistic regression models are estimated as follows:

$$GCO = \alpha_0 + \beta_1 CI\_FEE + \beta_2 Control\ variables + \varepsilon \quad (Eq. 6)$$



$$GCO = \alpha_0 + \beta_1 CI\_AFEE + \beta_2 Control\ variables + \varepsilon \text{ (Eq. 7)}$$

$$GCO = \alpha_0 + \beta_1 CI\_TFEE + \beta_2 Control\ variables + \varepsilon \text{ (Eq. 8)}$$

The dependent variable and control variables remain the same across all models, the variable definitions can be found in Table 1. In order to construct the new client importance variables and examine the robustness of the measurement of total fees more closely, I remove all observations with non-audit service fees (*NASFEE*) equal to zero.<sup>14</sup> This yields a sample of 1634 company-engagement partner observations, which are further restricted to financially distressed companies, as in the main tests.<sup>15</sup> This leaves a final sample of 935 company-engagement partner observations with 737 unique engagement partners, where 98 companies were previously audited by AA and 837 were not. From the final sample of 935 companies, 40 received a GCO and 895 did not receive a GCO. In order to check the robustness of the 2<sup>nd</sup> hypothesis, I add three additional logistic regression models, which are as follows:

$$GCO = \alpha_0 + \beta_1 CI\_AFEE + \beta_2 AA + \beta_3 CI\_FEE * AA + \beta_4 Control\ variables + \varepsilon \text{ (Eq. 9)}$$

$$GCO = \alpha_0 + \beta_1 CI\_AFEE + \beta_2 AA + \beta_3 CI\_AFEE * AA + \beta_4 Control\ variables + \varepsilon \text{ (Eq. 10)}$$

$$GCO = \alpha_0 + \beta_1 CI\_TFEE + \beta_2 AA + \beta_3 CI\_TFEE * AA + \beta_4 Control\ variables + \varepsilon \text{ (Eq. 11)}$$

Table 7a presents the results of the robustness checks for the main models in this study with the total sample of  $N=935$  financially distressed companies. The logistic regression analysis results are reported for Eq. 6-11, which differ by their specification of underlying fee ratios as the variables of interest.<sup>16</sup> The results show that all models are statistically significant ( $p$ -values < 0.001) and fit the data well with classification accuracy around 97% and pseudo  $R^2$  above 50% for each model.

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<sup>14</sup> As non-audit service fees (*NASFEE*) make up a small portion of the total fees (*TFEE*), they are a poor measure of client importance on their own. Thus, I do not add a separate indicator of *NASFEE* to the robustness checks. However, *NASFEE* is reflected in the *TFEE* of each client as the sample is restricted to companies with *NASFEE* > 0. Thus, if the revenue of non-audit service fees impairs audit quality, the coefficient of *CI\_TFEE* should be of a negative sign.

<sup>15</sup> The sample of 1809 company-engagement partner observations minus 175 observations with *NASFEE* equal to zero.

<sup>16</sup> All *CI* ratios are calculated before restricting the sample to financially distressed companies, as in the main tests.

**TABLE 7a: Logistic Regression Analysis for Robustness Checks**

Dependent variable = <i>GCO</i> Total sample <i>N</i> = 935		Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Variable	Expected sign	Coeff. [ <i>p</i> -value]	Coeff. [ <i>p</i> -value]	Coeff. [ <i>p</i> -value]	Coeff. [ <i>p</i> -value]	Coeff. [ <i>p</i> -value]	Coeff. [ <i>p</i> -value]
<i>CI_FEE</i>	?	-0.639 [0.474]			-0.743 [0.417]		
<i>CI_AFEE</i>	?		-0.255 [0.755]			-0.368 [0.660]	
<i>CI_TFEE</i>	?			-0.230 [0.774]			-0.310 [0.706]
<i>AA</i>	+				-1.467 [0.446]	-1.462 [0.455]	-1.224 [0.522]
<i>AA x CI_FEE</i>	-				0.708 [0.823]		
<i>AA x CI_AFEE</i>	-					0.663 [0.811]	
<i>AA x CI_TFEE</i>	-						0.224 [0.937]
<i>GENDER</i>	+	-0.299 [0.625]	-0.298 [0.627]	-0.298 [0.626]	-0.299 [0.626]	-0.298 [0.627]	-0.296 [0.629]
<i>PRIORGCO</i>	+	3.094*** [0.000]	3.073*** [0.000]	3.071*** [0.000]	3.160*** [0.000]	3.143*** [0.000]	3.127*** [0.000]
<i>TENURE</i>	?	-0.019 [0.530]	-0.017 [0.553]	-0.017 [0.553]	-0.016 [0.575]	-0.015 [0.602]	-0.015 [0.598]
<i>BUSY</i>	?	-0.952 [0.164]	-0.812 [0.243]	-0.799 [0.247]	-0.996 [0.150]	-0.866 [0.218]	-0.837 [0.229]

**TABLE 7a: Logistic Regression Analysis for Robustness Checks (continued)**

Dependent variable = <i>GCO</i> Total sample <i>N</i> = 935		Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Variable	Expected sign	Coeff. [ <i>p</i> -value]	Coeff. [ <i>p</i> -value]	Coeff. [ <i>p</i> -value]	Coeff. [ <i>p</i> -value]	Coeff. [ <i>p</i> -value]	Coeff. [ <i>p</i> -value]
<i>LNTA</i>	-	-0.408* [0.044]	-0.424* [0.037]	-0.426* [0.036]	-0.421* [0.042]	-0.437* [0.036]	-0.436* [0.037]
<i>ROA</i>	-	-1.312 [0.250]	-1.332 [0.245]	-1.331 [0.246]	-1.360 [0.240]	-1.387 [0.234]	-1.368 [0.239]
<i>LEVERAGE</i>	+	1.561*** [0.000]	1.535*** [0.000]	1.534*** [0.000]	1.577*** [0.000]	1.545*** [0.000]	1.551*** [0.000]
<i>LIQUIDITY</i>	-	-0.042 [0.618]	-0.040 [0.629]	-0.040 [0.630]	-0.043 [0.610]	-0.042 [0.615]	-0.041 [0.621]
<i>CASHFLOW</i>	-	-1.488 [0.257]	-1.433 [0.276]	-1.430 [0.278]	-1.298 [0.334]	-1.240 [0.358]	-1.261 [0.350]
<i>LOSS</i>	+	1.323 [0.162]	1.303 [0.168]	1.305 [0.168]	1.403 [0.151]	1.377 [0.157]	1.383 [0.155]
<i>ISSUE_DEBT</i>	-	0.469 [0.361]	0.483 [0.347]	0.482 [0.348]	0.498 [0.336]	0.517 [0.316]	0.520 [0.314]
<i>ZSCORE</i>	-	-0.036 [0.289]	-0.038 [0.270]	-0.038 [0.270]	-0.040 [0.254]	-0.042 [0.235]	-0.041 [0.239]
<i>Pseudo R</i> <sup>2</sup>		0.5379	0.5366	0.5366	0.5410	0.5397	0.5394
<i>Correctly classified %</i>		97.22%	97.22%	97.22%	97.22%	97.11%	97.22%

Notes: This table presents the logistic regression analysis for *eq. 6-11* with full sample of *N*=935 companies. The sample is restricted to companies in financial distress, defined as those with either negative net income, negative cash flow from operations, negative working capital or negative retained earnings for the sample period of 15.01.2017-14.01.2018. The *p*-values are reported in brackets. \*, \*\*, \*\*\* indicate significance at 10%, 5% and 1% levels (two-tailed), respectively. See Table 1 for variable definitions.

All variables of interest are insignificant across all models, which aligns with the results of the main tests. Furthermore, all control variables except *PRIORGCO*, *LNTA* and *LEVERAGE* are insignificant across all models as in the main tests. Thus, the evidence suggests that the results are robust to different fee ratio specifications.

In order to further check the robustness of the main tests, I follow previous studies on client importance and restrict the sample to first time GCO, because the issuance of a GCO is considered to be highly persistent (e.g. Li 2009; DeFond et al. 2002; Hossain et al. 2016). This results in a sample of 1,023 companies with 777 unique audit partners, from which AA previously audited 103. From the final sample of 1,023 companies, 31 received a GCO and 992 did not. The dependent and independent variables in the logistic regression models (eq. 2 and eq. 3) stay the same with the exception of removing the indicator variable *PRIORGCO* and *LOSS* from the control variables. In addition, as some previous studies use logarithms for fee revenues (e.g. DeFond et al. 2002; Chen et al. 2010), I also test whether the results are robust to including logarithms to the measurement of *CI*, where the importance of client *i* to a partner *j* (Eq. 12) is:

$$CI\_I = \frac{\log(TFEE_i)}{\sum_{i=1}^n \log(TFEE_i)} \quad (Eq. 12)$$

where the numerator is the log of total fees of client *i* and the denominator is the sum of the log of total fees of *n* clients audited by a partner *j* in the particular year or in this case during the sample period of one year. All variables in the logistic regression models stay the same. The logistic regression models for both hypotheses are as follows:

$$GCO = \alpha_0 + \beta_1 CI\_I + \beta_2 \text{Control variables} + \varepsilon \quad (Eq. 13)$$

$$GCO = \alpha_0 + \beta_1 CI\_I + \beta_2 AA + \beta_3 CI\_I * AA + \beta_4 \text{Control variables} + \varepsilon \quad (Eq. 14)$$

Table 7b presents the results of the additional robustness checks. Model 9 and 10 reflect the results after restricting the sample to first time GCO with  $N=1,023$ . Model 11 and 12 reflect the results of re-calculating *CI* ratio by logarithm (eq. 12) with  $N=1,066$ . Model 9 and 11 reflect the 1<sup>st</sup> hypothesis, while Model 10 and 12 reflect the 2<sup>nd</sup> hypothesis. In all models the sample has been restricted to financially distressed companies, as in the main tests.

**TABLE 7b: Logistic Regression Analysis for Robustness Checks**

Dependent variable = <i>GCO</i>		Model 9 <i>N</i> =1,023	Model 10 <i>N</i> =1,023	Model 11 <i>N</i> =1,066	Model 12 <i>N</i> =1,066
Variable	Expected sign	Coeff. [ <i>p</i> -value]	Coeff. [ <i>p</i> -value]	Coeff. [ <i>p</i> -value]	Coeff. [ <i>p</i> -value]
<i>CI</i>	?	0.865 [0.273]	0.884 [0.264]		
<i>CI_I</i>	?			9.128 [0.056]	8.084 [0.107]
<i>AA</i>	+		-0.741 [0.796]		-6.489 [0.757]
<i>AA x CI</i>	-		-2.148 [0.730]		
<i>AA x CI_I</i>	-				5.158 [0.816]
<i>GENDER</i>	+	-0.616 [0.295]	-0.624 [0.289]	-0.044 [0.925]	-0.051 [0.914]
<i>PRIORGCO</i>	+			3.187*** [0.000]	3.191*** [0.000]
<i>TENURE</i>	?	-0.012 [0.651]	-0.013 [0.616]	0.002 [0.931]	0.002 [0.915]
<i>BUSY</i>	?	0.429 [0.478]	0.421 [0.485]	0.512 [0.339]	0.416 [0.449]
<i>LNTA</i>	-	-0.864*** [0.000]	-0.880*** [0.000]	-0.666*** [0.000]	-0.678*** [0.001]
<i>ROA</i>	-	-0.262 [0.787]	-0.216 [0.822]	-0.672 [0.250]	-0.636 [0.283]
<i>LEVERAGE</i>	+	0.797 [0.072]	0.859* [0.048]	1.049** [0.007]	1.112** [0.004]
<i>LIQUIDITY</i>	-	-0.121 [0.194]	-0.115 [0.209]	-0.037 [0.511]	-0.033 [0.550]
<i>CASHFLOW</i>	-	-1.727 [0.149]	-1.596 [0.182]	-1.407 [0.070]	-1.267 [0.111]
<i>LOSS</i>	+			1.389 [0.105]	1.484 [0.089]
<i>ISSUE_DEBT</i>	-	0.579 [0.230]	0.602 [0.210]	0.506 [0.232]	0.504 [0.231]
<i>ZSCORE</i>	-	-0.003 [0.929]	-0.013 [0.677]	0.001 [0.970]	-0.006 [0.799]
<i>Pseudo R<sup>2</sup></i>		0.3567	0.3628	0.5013	0.5058
<i>Correctly classified %</i>		97.07 %	97.26%	95.97 %	96.06%

Notes: This table presents the logistic regression analysis for the first time *GCO* sample (Model 9, 10) and *eq. 13-14* (Model 11, 12). The sample is restricted to companies in financial distress, defined as those with either negative net income, negative cash flow from operations, negative working capital or negative retained earnings for the sample period of 15.01.2017-14.01.2018. The *p*-values are reported in brackets. \*, \*\*, \*\*\* indicate significance at 10%, 5% and 1% levels (two-tailed), respectively. See Table 1 for variable definitions.

The results show that all models are statistically significant ( $p$ -values $<0.001$ ) and fit the data well with classification accuracy around 97% for first time GCO models and around 95% for models using logarithmic  $CI$ . The pseudo  $R^2$  is above 50% for Model 11 and 12, which is higher than for Model 9 and 10, where the pseudo  $R^2$  is 35.67% and 36.28%, respectively. This is possibly due to fewer control variables in the latter models, lowering the power. All variables of interest are insignificant across all models, which aligns with the results of the main tests and other robustness checks in Table 7a. In Model 9 and 10 the variable  $LNTA$  is highly significant with  $p$ -value $<0.001$  and  $LEVERAGE$  is slightly significant in Model 10, which reflects the 2<sup>nd</sup> hypothesis. This suggests that leverage of a company does not play as important role in the likeliness of issuing a GCO, when the company has not received a GCO in the previous fiscal year. In Model 11 and 12, all control variables except  $PRIORGCO$ ,  $LNTA$  and  $LEVERAGE$  are insignificant as in the main tests. Thus, the evidence suggests that the results are robust to both restricting the sample to first time GCO as well as computing the  $CI$  variable using logarithm.

In addition to the robustness checks discussed above, I also examine whether the results in the main tests are affected by the size of the audit offices where the engagement partners work, in particular I remove all audit offices with 3 or less engagement partners per office. This leaves a sample of  $N=859$  companies with 639 unique engagement partners, from which 81 were previously audited by AA. From the final sample of 859 companies, 46 received a GCO.

Lastly, I examine whether the number of clients per engagement partner affect the results observed in the main tests, in particular I remove all engagement partners with only 1 client per partner from the sample (i.e.  $CI=1$ ) before restricting the sample to companies in financial distress. I am left with the final sample of  $N=641$  companies with 373 unique engagement partners, from which 61 were previously audited by AA and 39 received a GCO. All variables in the regression equations stay the same as in the main tests, with the exception of variable  $LOSS$  being dropped from both models.

The results of the additional robustness checks are presented in Table 7c. Model 13 and 14 represent the sample of  $N=859$  companies with the restriction of more than 3 engagement partners per audit office. Model 15 and 16 represent the sample of  $N=641$  companies with the restriction of more than 1 client per engagement partner. Furthermore, Model 13 and 15 reflect the 1<sup>st</sup> hypothesis, whereas Model 14 and 16 reflect the 2<sup>nd</sup> hypothesis.

**TABLE 7c: Logistic Regression Analysis for Robustness Checks**

Dependent variable = <i>GCO</i>		Model 13 <i>N</i> =859	Model 14 <i>N</i> =859	Model 15 <i>N</i> =641	Model 16 <i>N</i> =641
Variable	Expected sign	Coeff. [ <i>p</i> -value]	Coeff. [ <i>p</i> -value]	Coeff. [ <i>p</i> -value]	Coeff. [ <i>p</i> -value]
<i>CI</i>	?	0.426 [0.499]	0.411 [0.521]	2.190 [0.104]	1.954 [0.156]
<i>AA</i>	+		-0.660 [0.703]		-2.396 [0.429]
<i>AA x CI</i>	-		-0.240 [0.933]		2.713 [0.696]
<i>GENDER</i>	+	-0.292 [0.588]	-0.294 [0.585]	-0.339 [0.555]	-0.330 [0.568]
<i>PRIORGCO</i>	+	2.292*** [0.000]	2.304*** [0.000]	2.716*** [0.000]	2.769*** [0.000]
<i>TENURE</i>	?	-0.016 [0.562]	-0.014 [0.595]	-0.002 [0.932]	-0.001 [0.972]
<i>BUSY</i>	?	-0.949 [0.126]	-0.943 [0.129]	0.431 [0.428]	0.351 [0.526]
<i>LNTA</i>	-	-0.667** [0.001]	-0.673** [0.001]	-0.693** [0.004]	-0.717** [0.003]
<i>ROA</i>	-	0.203 [0.713]	-0.197 [0.724]	-0.368 [0.728]	-0.380 [0.719]
<i>LEVERAGE</i>	+	1.089** [0.006]	1.109** [0.006]	1.316** [0.006]	1.360** [0.005]
<i>LIQUIDITY</i>	-	-0.069 [0.412]	-0.070 [0.405]	-0.021 [0.725]	-0.019 [0.755]
<i>CASHFLOW</i>	-	-1.850* [0.016]	-1.778* [0.023]	-1.242 [0.329]	-1.060 [0.408]
<i>LOSS</i>	+	1.359 [0.137]	1.406 [0.128]		
<i>ISSUE_DEBT</i>	-	0.603 [0.194]	0.625 [0.178]	0.504 [0.291]	0.480 [0.313]
<i>ZSCORE</i>	-	-0.040 [0.119]	-0.041 [0.112]	0.012 [0.528]	0.008 [0.693]
<i>Pseudo R<sup>2</sup></i>		0.4917	0.4931	0.4058	0.4111
<i>Correctly classified %</i>		95.81 %	95.93%	92.87 %	93.11%

Notes: This table presents the logistic regression analysis for the sample with more than 3 engagement partners per office (Model 13, 14) and sample with more than 1 client per engagement partner (Model 15, 16). The sample is restricted to companies in financial distress, defined as those with either negative net income, negative cash flow from operations, negative working capital or negative retained earnings for the sample period of 15.01.2017-14.01.2018. The *p*-values are reported in brackets. \*, \*\*, \*\*\* indicate significance at 10%, 5% and 1% levels (two-tailed), respectively. See Table 1 for variable definitions.

The results show that all models are statistically significant ( $p$ -values $<0.001$ ) and fit the data reasonably well with classification accuracy more than 90% and pseudo  $R^2$  above 40% for all models. Models 13 and 14 perform slightly better than other two models, however that could be attributable to higher number of control variables and a larger sample size. All variables of interest are insignificant across all models, which aligns with the results of the main tests and other robustness checks in Table 7a and 7b. From control variables, *PRIORGCO*, *LNTA* and *LEVERAGE* are significant across all models, as in the main tests. In addition, variable *CASHFLOW* is slightly significant in Model 13 and 14. This suggests that the cash position of the company plays a more important role on the likeliness of issuing a GCO, if the sample is restricted to audit offices with more than 3 engagement partners per office. In all, the evidence suggests that the results are robust to both restricting the sample to audit offices with more than 3 engagement partners per office, as well as to restricting the sample to engagement partners with more than 1 client.

## **7. Conclusions**

In achieving optimal level of audit quality, understanding the factors influencing the audit opinion is critical. Although regulators have attempted to enhance auditor accountability and responsibility through legislation, there is a need for further research in the field in order to ascertain whether and to what extent legislative changes are needed to maintain the public's faith in the audit opinion. Academics have investigated the role and quality of audits for decades, however only recently has the research moved from the audit firm and office level, to the individual partner level. The disclosure of the partner identity in several jurisdictions has enabled a new avenue of research, concentrating on the behavioral aspects of auditing and the possible key drivers of the decision-making of an individual engagement partner. The economic bond between a client and the engagement partner has been suggested to be one of the leading factors influencing the underlying reporting decisions of a partner. In particular, high fee revenues from the client are believed to pose a threat to auditor's independence, as the auditor is more likely to compromise with the management on reporting and accounting choices in order to not lose important clientele. This can be reflected in the audit opinion issued by the engagement partner,



where the partner could report more favorably towards an economically important client. However, it is unclear whether such bond impairs audit quality in an environment where high litigation exposure and reputational concerns could act as a safeguard or when specific partner attitude towards perceived risk of the client could incentivize higher audit quality.

In order to shed light on the matter, this study examines the association between the economic importance of a client to an individual engagement partner and audit quality in the USA, an environment where the market-based incentives for higher audit quality could dominate the expected benefits from economic bonding. In addition, this study examines the effect of client importance on audit quality for former Arthur Andersen clients, who have been suggested to possess unique audit and litigation risk caused by past reputational loss. To answer the research question: **“Does client’s economic importance affect the quality level of an audit delivered by the engagement partner?”** this study constructs a sample consisting of individual engagement partners from all Big 4 audit firms in the USA for the sample period of 15.01.2017-14.01.2018. The final sample used in this study is made up of 1,066 public company-partner observations with 798 unique engagement partners, from which Arthur Andersen formerly audited 105 companies.

The results show no significant association between the economic importance of a client and audit quality, measured as the partner’s likeliness to issue a going concern opinion and thus I accept the 1<sup>st</sup> hypothesis – stated in the null form. Therefore, the evidence provides no support that the economic importance of a client impairs audit quality. In contrast, the results rather support the reputation protection theory, which takes the market-based view that high litigation risk and accompanying reputational concerns in the USA can act as a safeguard against the possible effect created by economic bonding between a client and an engagement partner. This is aligned with other research on the USA data, such as DeFond et al. (2002), who examine the association between fee revenues and audit quality at the firm level and find no significant association between the two. Furthermore, as the objective of the recent disclosure of the partner identity in the USA is to increase auditor accountability and transparency of audits, it is possible that the engagement partners have become more cautious when auditing economically important clients in order to avoid audit failure and protect their reputation. The results are also comparable to Chen et al. (2010), Chi et al. (2012), Hardies et al. (2012) and Goodwin and Wu (2016) who

do not find evidence that client's economic importance impairs audit quality in different research settings. The findings also do not support the 2<sup>nd</sup> hypothesis, stating that engagement partners report more conservatively when auditing former Arthur Andersen clients and are thus less influenced by the economic importance of the client. Rather, the results suggest that the long time period since the demise of Arthur Andersen has reversed any possible conservative attitude towards former clients of the audit firm and thus, no such effect is no longer observable. The findings however show that the odds of issuing a going concern opinion are higher for companies with a prior going concern opinion, for larger companies and highly leveraged companies. The results are robust to several alternative variable specifications and sensitivity tests, like reconstructing the client importance variable in terms of audit fees not total fees, calculating the client importance variable by logarithm, restricting the sample to first time going concern opinion, limiting the sample to audit firms with more than 3 engagement partners per office and finally restricting the sample to engagement partners with more than 1 client.

In sum, to answer the research question of this study: I find no evidence that client's economic importance affects the quality level of an audit delivered by the engagement partner. The findings of this study and the answer to the research question can serve as evidence to the regulators for assessing their concerns over the economic bonding between the client and the engagement partner and whether further legislative changes are needed. As the Big 4 audit firms are often scrutinized for their close relationship with their clients, the finding of this study can also serve as evidence to the public on the independence of the engagement partners in the USA. Furthermore, the evidence answers to the call for further research on partner level as well as adds to the existing body of literature on audit quality, client importance and treatment (i.e. partner's reporting decision) of former Arthur Andersen clients.

## **Limitations**

The study, as many others in the field, has some limitations. First, it should be noted that due to legislation in the USA, it is not possible to obtain public information on private companies. However, as an engagement partner has both public and private companies in their client portfolio, the relative importance of a client can thus be overstated when using data on public companies only. Furthermore, the profit sharing schemes of the Big 4 firms, as well as the salary

and bonus amounts are confidential information in the USA and thus, it is not possible to assess the portion of fee revenues that are attributable to individual engagement partners. If the Big 4 would be sharing the profits from a client within a big pool of partners, it could be that the relative importance of a client to the partner would thus also be lower versus when the profits are shared in a smaller pool or when the partners are subject to bonuses or career advancements tied to the level of fee revenues. Second, due to the nature of the data (i.e. one year data) I am unable to use client fixed effects or rule out endogenous matching between the client and the engagement partner, where riskier clients could be matched with more conservative engagement partners or riskier clients pick less conservative engagement partners. However, this is common to other studies in the field and thus, the results should be treated carefully and no causal inferences should be drawn. Although, I perform several robustness checks and the control variables used in this study are consistent with previous research, I am also not able to completely rule out that the results could be driven by omitted correlated variables or possible endogeneity. Last, as the disclosure of partner identity is only in force since 2017 it could be that the sample period does not reflect all public companies audited by USA engagement partners from the Big 4 audit firms. However, the sample period was tailored in a way to capture the highest possible percentage of companies with the fiscal year end data falling to the specific time interval. In addition, as the sample is rather small with 798 unique engagement partners, the results might not be generalizable to a larger set of engagement partners in other countries, however the results can be used as a comparison to other countries with a similar environment.

## **Recommendations**

Further research on the subject could include non Big 4 audit firms and also focus on the difference in audit quality arising from the size of the audit firms. Another avenue of research could be to expand to environments where both public and private company data is disclosed to the public and where information on the profit sharing between the partners is available or where it is possible to surrogate income with other means. It could also be interesting to examine other measures of audit quality, such as accruals or other types of audit opinions. Since the partner identity has been disclosed since 2017, the results observed in this study could be of temporary nature, thus it would be interesting to also include more years to the sample in order to see

whether the observed results are permanent and not affected by the increased litigation exposure from the PCAOB regulation. Furthermore, as the research on partner level is rather new, I recommend examining different types of partner characteristics that can drive the decision-making and affect partner's attitude towards risk as well as clientele that are perceived to have higher or lower risk by the engagement partners. Lastly, it could be interesting to also examine the association of client importance and audit quality separately for the individual engagement partners who used to work for Arthur Andersen as a contrast to looking at the former clients of Arthur Andersen. This would rest on the notion that traumatic occurrences in life like bankruptcy of the employer could possibly influence the future behavior and attitude of engagement partners. However, as this is out of the scope of this study it is left as an avenue for future research.

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# Appendices

## Appendix A. List of Abbreviations

AA – Arthur Andersen

AICPA – American Institute of Certified Public Accountants

E&Y – Ernst and Young

Ex-AA – Former Arthur Andersen

GCO – Going Concern Opinion

IAASB – The International Auditing and Assurance Standards Board

ICAEW – Institute of Chartered Accountants in England and Wales

IESBA – The International Ethics Standard Board of Accountants

IFAC – International Federation of Accountants

KPMG – Klynveld Peat Marwick Goerdeler

OLS – Ordinary Least Squares

PCAOB – Public Company Accounting Oversight Board

PwC – PricewaterhouseCoopers

SOX – Sarbanes-Oxley Act

USA – United States of America

VIF – Variance Inflation Factors