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Abstract

This research investigates whether or not partners with Big4 experience are perceived to have higher audit quality than partners without this experience. According to previous research there is no clear difference in audit quality between the Big4 and non-Big4. However, the shareholders perceive the audit quality of Big4 firms to be higher and therefore the audit fees paid are also higher. To conduct this research, the data is retrieved from the PCAOB Auditorsearch. Whether or not the partner worked for a Big4 is hand collected from LinkedIn. This study finds no difference in audit quality and audit fees between partner with and without Big4 experience. Furthermore, in the additional test the audit quality decreases when the partner has Big4 experience, but increases when the partner became at least senior at the Big4. Also, in these additional tests there is no significant effect of Big4 experience on the audit fee. These result conclude that the shareholders perceive the audit quality of partners with Big4 experience not higher than the audit quality of partners without Big4 experience. Therefore, the perceived audit risk is mainly related to the brand name of the Big4 and does not follow partners when they move to non Big4 firms.

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Chapter 1 Introduction

Since January 2017 it is mandated by the Public Company Accounting Oversight Board (PCAOB) to disclose the name of the partner with every audit report. All registered public accounting firms are required by the PCAOB to file a Form AP for each public company audit report issued after 31 January 2017. This Form AP contains the partners' name, audit firm and date of signing for all registered public accounting firms in the United States (US). There are two reasons for the PCAOB to implement this new rule. First, they adopted this rule to improve the transparency regarding the engagement partner. Second, the disclosure would enhance partner accountability, which could lead to greater effort and higher audit quality. They expect greater effort and higher audit quality, because bad audit quality could harm the reputation of the auditor.

Not only the PCAOB but also the Securities and Exchange Commission (SEC) want to increase the audit quality. The goal of the SEC is increasing the audit quality to ensure the stakeholders of the financial statements that the financial statements give a true and fair view of the client's underlying economics. However, there are still a large number of news items about Big4 firms paying fines for not satisfying certain accounting standards. For example, EY has been fined in the US for having a too close relationship with their client. This leads to independency threats, as the auditor may turn a blind eye for this closely related CEO (Agnew, 2016). This indicates that there is still some work to do to increase the audit quality.

According to Cameran, Campa & Francis (2018) and Gul, Wu & Yang (2013) the largest part of the audit quality variation is explained by partner effects. Partner effects are characteristics of a partner, for example gender, specialization, education and experience. This study focuses on the association between partner characteristics and the audit quality as these seem to be related. Previous research mainly focused on the differences in audit quality on firm level and office level (Boone, Khurana, & Raman, 2010; DeAngelo, 1981b; Francis & Yu, 2009). In previous research there is no clear answer to whether or not Big4 firms have higher audit quality than non-Big4 firms (Boone et al., 2010; Jeong & Rho, 2004). On the other hand there is proof that clients pay higher audit fees for audits performed by Big4 firms (Burke, Hoitash, & Hoitash, 2018; Campa, 2013; Gonthier-Besacier & Schatt, 2007). This is due to the perceived audit quality, the users perceive the audit quality of the Big4 to be higher than the audit

quality of smaller firms. This is why clients want to pay more for audits conducted by the Big4 (Boone et al., 2010).

Since the introduction of the Form AP fillings by the PCAOB there is an increase in research on the effect of partner characteristics on audit quality. This study will contribute to this partner characteristics literature by investigating the following research question:

"Is there a difference in perceived audit quality between partners with Big4 experience and partners without Big4 experience?"

This paper is scientifically relevant because there is an increase in audit partner characteristic research. These studies are mainly based on partner characteristics as gender, busyness and tenure. Besides they mostly focused on the difference between Big4 firms and smaller firms. This paper contributes to these studies by investigating the career of a partner. As it is the goal of the PCAOB and SEC to increase the audit quality it is interesting to learn what factors affect the audit quality. Further, for the clients this could be an eye opener. Research find that clients pay more for Big4 auditors than for non-Big4 auditors, however the difference in audit quality is unclear. Clients pay more for Big4 audits because the users of the financial report also perceive the audit quality of Big4 firms to be better than of non-Big4 firms. When users see that there is no difference in quality this could lead to a switch to non-Big4 auditors, as these deliver the same quality for a lower fee. Another contribution of this research is that it shows where the perceived audit quality is based on. This could be based on the brand name of the Big4, but also on the experience of the partner. When there is a difference in audit fee, but not a difference in audit quality between partner with and without Big 4 experience. There can be concluded that the Big4 experience leads to the perceived audit quality, when this isn't the case the brand name probably explains it.

The data used to examine these research question is retrieved from the PCAOB auditorsearch and COMPUSTAT. These datasets contain information about the partner that conducted the audit and the financial information of the organization audited. The last database used is AuditAnalytics, this database contains information about the audit fee and if the client had a material weakness or restatement. The partner specific information about if and how long they worked at the Big4 is hand collected from LinkedIn. The research question will be answered with multiple regressions. The

regressions measures whether or not Big4 experience influences the audit quality and/or the audit fee. The audit quality is measured with three proxies, the absolute discretionary accruals, the accuracy of a going concern opinion (GCO) and if the client reports a small profit or small change in profit. The audit fee is measured as the natural logarithm of the total fees paid for the audit. Besides, when the audit quality is measured with the client having a small profit or increase in profit, the result show that partners that became manager at the Big4 have lower audit quality.

The results for the variables of interest, if and how long the partner worked at the Big4, are all insignificant for the main regressions. This indicates that, as expected, there is no difference in audit quality between partners with and without Big4 experience. However, there is also no difference in audit fees between partners with and without Big4 experience. These results show that the shareholders do not value the experience of a partner. Also, two additional test are conducted. In the first one the amount of years a partner worked at the Big4 is replaced by the highest function of the partner at the Big4. The results show that when the audit quality is measured with the accuracy of the GCO, the audit quality decrease when the partner has Big4 experience. However, the audit quality rises when a partner at least became Manager at the Big4. The second additional test divides the second-tier audit firms from the non-second-tier audit firms. The results stay almost the same as in the main regression, however for the second-tier audit firms the Big4 experience do affect the audit quality. When the audit quality is measured with the absolute discretionary accruals and the accuracy of the GCO, the audit quality decreases when the partner has Big4 experience.

This thesis concludes that there is no difference in audit quality and fee for partners with or without Big4 experience. Previous research do find a difference in audit fees paid for Big4 firms, therefore this research concludes that the higher fees are paid for the Big4 brand name and do not follow the partner to a non Big4. For non-Big4 audit firms this could show that they, although they keep increasing their quality. The shareholders and clients will still perceive the audit quality of a Big4 as higher.

The remainder of the paper is organized as follow. The next chapter sums up previous literature and the hypothesis are discussed. Section 3 describes the research and contains the sample selection. Section 4 describes the empirical result. Lastly,

section 5 concludes this research, containing the limitations and ideas for future research.

Chapter 2 Prior Research and Hypotheses

2.1 Introduction

The main subject of this paper is audit quality. The objective of an audit is to investigate and evaluate whether or not the financial statements of an organization are fairly and accurately represented. The auditor provides external assurance to protect the users of the financial statement. This external assurance is needed for the functioning of the capital market, because the managers, owners and other stakeholders do not share the same interests. These differences in interest are called the agency problem (Watts & Zimmerman, 2005). The agency problem exists due to information asymmetry. Within a company the managers have more information than the stakeholders. To decrease this gap a company issues their financial statements. However, the stakeholders cannot rely on the information in the financial statements without interference of an auditor. A manager wants to increase his own benefits and the benefits of the company as their bonus is mostly based on firm performance. On the other hand, the owners want the firms' performance to be reported fair and accurate as they value their investment opportunities on the audit report. This explains the agency problem. The users of the financial statement are investment analysts, investors, lenders, customers and suppliers. Investors use the financial statement to understand the performance of their investment. The investment analyst uses it to decide whether they recommend investors to buy, sell or hold the shares. Lenders use the financial statement to evaluate if the company is able to pay back the loans and interest. Customers and suppliers use the financial report to consider if they want to do business with the company. The remainder of this section is divided into two subjects: audit quality and audit fees.

2.2 Audit Quality

2.2.1 Definition

Audit quality is defined by DeAngelo (1981a) as "the market-assessed joint probability that a given auditor will both detect a breach in the client's accounting system, and report the breach". This definition only depends on violation of the accounting system. However, in this research I indicate audit quality as good when the audit report is in line with the accounting rules and gives a true and fair view of the firms underlying economics (DeFond and Zhang, 2014). With this definition earnings management will be considered as bad audit quality as well. Earnings

management is also seen as bad audit quality as managers try to mislead the users of the financial statements by managing the earnings. An auditor should mitigate earnings management to keep the financial statements fair and accurate. Another definition of audit quality is given by the US Government accountability office. They define audit quality as follows: "The financial statements should be in accordance with the Generally Accepted Auditing Standards (GAAS) to provide reasonable assurance that the audited financial statements and related disclosures are presented in accordance with Generally Accepted Accounting Principles (GAAP) and are not materially misstated whether due to errors or fraud." This definition is more based on following the accounting standards and principles than detecting a breach in the clients accounting system as in the definition of DeAngelo (1981a). Auditors are concerned about their audit quality, due to the litigation risk. Litigation risk is the risk of being charged because the audit report conflicts with the GAAP or does not reflect a true and fair view of the firms underlying economics (Venkataraman, Weber and Willenborg, 2008).

Low audit quality is related to audit failure, which occurs in two circumstances. First, when the financial statement does not comply with the generally accepted accounting principles (GAAP). Second, when an auditor fails to issue a modified audit report in the appropriate circumstance (Francis, 2004). Both situations mislead the users of the financial statements, which leads to noise in the capital market. Two well-known audit failures are Enron and Worldcom. Both firms did not give a true and fair view of their underlying economics. How these scandals occurred falls outside the scope of this research. After these scandals the Sarbanes-Oxley Act of 2002 was introduced. SOX § 201 mandates the PCAOB to inspect all foreign and domestic auditors of SEC registrants. These inspections are positively related with the audit quality (Lamoreaux, 2016).

The audit quality is related to the expectation gap, this is "the difference in beliefs between auditors and the public about the duties and responsibilities assumed by auditors and the messages conveyed by audit reports" (Monroe & Woodliff, 1993). The expectation gap can be divided into two components. The reasonableness gap, which is the difference between what the society expects and what the auditor is able to achieve. And the performance gap, what the society can reasonably expect the auditor to do and what an auditor is perceived to do (Chye Koh & Woo, 1998).

The users of the financial statements may think that the financial statements are free from misstatements, but the auditor only checks if the financial statement represents the underlying economics fair and accurate. There could still be some material misstatements due to the information gap between auditor and client. This information gap exists, because managers do not disclose all information for the reason that they managed their earnings in order to obtain their bonuses. On top of this, it's not mandatory for the managers to disclose all information, which leaves the auditor in the dark.

2.2.2 Audit Risk Model

The audit risk is the risk that an auditor gives an unqualified opinion for a financial statement with material misstatements. The audit risk model is discussed in the Statement on Auditing Standards (SAS) No. 47 (AICPA, 1984). The audit risk model is stated as follows:

$$Audit\ Risk = Inherent\ Risk \times Control\ Risk \times Detection\ Risk.$$

The inherent risk of a client is the risk of material misstatements without interference of controls and auditors. For the inherent risk the auditor indicates if there are complex accounting transactions within the company or the knowledge of the internal accountants. If the transactions are complex or the knowledge is low, there is a higher probability of a material misstatement. The control risk is the risk of material misstatements, due to the failure of existing internal controls or the absence of internal controls. When controls fail or are not in place at all, the control risk is seen as high. The detection risk is the risk of an accountant failing to discover a material misstatement. The inherent risk and control risk are observed by the auditors. When both the inherent risk and control risk are high, the detection risk should be low. Therefore, the auditor should do more substantive testing to reduce the audit risk to an acceptable level (Hogan & Wilkins, 2008).

2.2.3 Auditor Independence

Auditor independence is a critical issue for the auditing profession and has an impact on the audit quality. As in the definition of DeAngelo (1981a) the auditor is expected to detect and report a breach in the client's accounting system. When an auditor does not remain independent, he is less likely to report a breach. There are four main threats to independence, namely client importance, non-audit services, auditor tenure and

client affiliation. The client importance is mainly based on the financial dependency. Larger clients carry a greater weight in an auditor's portfolio, losing these clients could have consequences for the audit firm. Therefore, pressure of these larger clients could compromise independence. However, the litigation and reputation risks mitigate these threats, as these risks could lead to even more harm for the audit firm (Hope & Langli, 2010).

The second threat is non-auditing services (NAS). NAS are services provided to an audit client that is not related to the audit. Most of the NAS are prohibited by the Sarbanes-Oxley Act of 2002 (SOX). These services are prohibited, because they create an economic bond between the client and the audit firm. However, the NAS may lead to information spillovers, which decreases the engagement risks and increases the audit quality (Beck & Wu, 2007). Besides, Robinson (2008) reports a higher likelihood of correctly issuing a GCO prior to bankruptcy, which indicates higher audit quality. On the other hand, Schmidt (2012) reports that higher NAS fees increase the likelihood of a restatement leading in a litigation.

Just like non-auditing services, auditor tenures have pros and cons. On one hand, the auditor tenure may increase the audit quality, because the auditor gets familiar with the company which improves the understanding of the client's business. On the other hand, the auditor may develop a relationship with the management and therefore acts in the favor of the management (Chen, Lin, & Lin, 2008). Empirical results show that longer audit tenure improves audit quality (Chen et al., 2008; Manry, Mock, & Turner, 2008). Besides, studies show that auditor tenure does not decrease the auditor independence (Boone et al., 2010; Ghosh & Moon, 2005). However, the empirical results show that there is no decrease in audit quality and independence when the tenure increases (Gipper, Hail, & Leuz, 2017). The SOX § 203 obliged a five-year rotation period. A client should switch partner every five year with a cooling-off period of 5 years. They expect that the rotation results in a fresh look at clients risks and an increase in independence. Both should lead to higher audit quality (Daugherty, Dickins, Hatfield, & Higgs, 2012).

The last threat is client affiliation with auditors, this threat occurs when there is an auditor-client relationship. There are three possible situations, which may impair independence: the auditor considers the client as possible employer, the auditor's

creates a distance with the shareholders due to a close relation with the management and the auditor may lose his independency in front of his former colleagues (Imhoff Jr., 1978). The impact of client affiliation with auditors on audit quality has mixed empirical results. On one hand, firms with former partners are more likely to just meet analyst forecasts and have larger abnormal accruals. Both indicate earnings management and therefore lower audit quality (Menon & Williams, 2004). On the other hand, Geiger, North and O'Connel (2005) and Geiger, Lennox and North (2008) found no differences in the amount of earnings managed.

2.2.4 Audit Quality Measurements

There are multiple audit quality measures with each their strengths and weaknesses. The first proxy discussed is material misstatements. To measure these material misstatements, Accounting and Auditing Enforcement Releases (AAERs) and restatements are used. The AAERs are lawsuits against auditors and accountants brought by the SEC. Restatements correct misstatements in previously issued financial statements. A financial statement that has been issued with an unqualified opinion while there are material misstatements, could be considered as bad audit quality. Therefore, this proxy can be seen as a direct measure of audit quality with a low measurement error. However, when there are no restatements or AAERs this measure directly indicates the financial report as high audit quality. This measure does not indicate low audit quality audits with within-GAAP earnings management. Besides restatements and AAERs are rare, which makes it impractical with a small sample size (DeFond & Zhang, 2014).

Another audit quality proxy is the going concern opinion . A auditor issues a going concern opinion to a financially distressed client, when he expects the client not to continue operating for the upcoming twelve months (Hardies, Breesch, & Branson, 2016). To measure audit quality, the probability of issuing a first-time going concern opinion to financially distressed client is used. Giving a going concern opinion is a direct measure of audit quality as this is the auditors responsibility and therefore entirely based on the auditors' work. Failing to issue a going concern opinion when a client goes bankrupt indicates bad audit quality. This is called a type II error (Barnes, 2004). Contrary, giving a GCO when the company is not going bankrupt is a type I error (Knechel & Vanstraelen, 2007). Like the first proxy, this one only indicates bad audit quality, it does not indicate subtle quality variation. Besides, these type I & II errors do

not occur often and therefore is impractical with a small sample size (DeFond & Zhang, 2014).

The quality of the financial reporting is closely related to the audit quality (Gaynor, Kelton, Mercer, & Yohn, 2016). There are multiple measures based on the financial reporting that indicate the audit quality. For example, the (modified) Jones model (Jones, 1991) and accruals quality measure by Dechow, Sloan and Sweeney (1995). These measures are related to earnings management, where is assumed that mitigating earnings management indicates good audit quality. The (modified) Jones model calculates the non-discretionary part of the accruals. By subtracting the non-discretionary accruals from the total accruals you get the discretionary accruals. The discretionary accruals are assumed to be used for earnings management (Jones, 1991). For the modified Jones model the change in net receivables are subtracted from change in revenue, assuming that all the credit sales in the period result from earnings management (Dechow, Sloan, & Sweeney, 1995).

The client just meeting or beating the earnings target is another measure that indicates earnings management. The client may use earnings management to meet the earnings target as this is sometimes related to manager bonuses or to have a positive reaction on the financial market. When a client just meet or beat the earnings target, it is likely they used earnings management to meet this target. When a client had been issued an unqualified opinion and earnings management is allowed, it can be seen as bad audit quality (Burgstahler & Eames, 2006). These proxies that measure financial reporting quality are less direct than the previous measurements and there is a higher level of measurement error. However, this measurement is able to detect within GAAP earnings management. This increases the probability of occurrence and therefore more useful with smaller samples.

There are even more measurements for audit quality, however I will not mention all of them. In this paper the modified Jones model (Dechow et al., 1995), the likelihood of a GCO and if the client meets or beats the earnings target will be used to operationalize the audit quality. The modified Jones model is used because it is attributable to all sample sizes and takes the within GAAP into account. The likelihood of a GCO will be used in a different way than mentioned previously as the data on bankruptcy is limited. In this research I will calculate z-score of the client and when

this is below 1,81, it is likely that the client is going bankrupt (Altman, 1983). If the auditor issued a GCO for these clients this will be seen as good audit quality. The last audit quality measurement is if the client just meets or beats the earnings target. Assumed is that the client just meets or beats the earnings target, when the ROA is between 0% and 3% and when the ROA changes between 0% and 1% (Aobdia, 2019). With the first restriction the client makes a small profit of only 3% of the total assets, assumed is that the client uses earnings management to report a small profit. With the second restriction the client has a small rise in ROA of only 1%, assuming that the client uses earnings management to report a small rise in the profit in relation to the previous year.

2.2.5 Previous research

Previous research investigating audit quality are mainly firm and office level based. DeAngelo (1981a) found that audit firm size is related to audit quality. She found that bigger audit firms perform better than smaller audit firms. This can be explained by the fact that bigger audit firms have a bigger reputation and name to live up to and therefore need to perform better to lower their litigation risk and protect their reputation in doing so. Besides, larger firms are less dependent on their clients than smaller firms. Smaller firms therefore tend to have a lower audit quality as they are not able to withstand the pressure of the client for an unqualified audit opinion. Big4 firms do not only have better audit quality because due to their independency and their high reputation. Their audit opinion is also more informative for investors in IPOs. Although Big4 firms audit less often a financially distressed client, when they do they provide more often a going concern to a company that appears to be financially distressed (Weber & Willenborg, 2003). This means that Big4 firms issue a GCO more often in the right situation and therefore have higher audit quality.

Boone et al. (2010) found insignificant evidence that Big4 firms issue a going concern opinion more often when a client is financially distressed than non-Big4. This indicates that Big4 firms do not have better audit quality than non-Big4 firms. They also had the same results when they measured audit quality with abnormal accruals Although according to Boone et al. (2010) there is no significant difference in audit quality between Big 4 firms and second-tier firms, there is a perceived difference in audit quality between these two. Investors perceive the audit quality to be higher for Big4 clients than for second-tier firm clients. The researchers

indicate this because the equity risk premium for clients audited by Big4 firms is significantly lower than the equity risk premium of clients audited by non-Big4 firms. The equity risk premium is the difference between the risk-free rate and the return rate provided by the clients. A study conducted in Korea had the same results, they find no difference in audit quality between Big 6 auditors and non-Big 6 auditors (Jeong & Rho, 2004).

Francis and Yu (2009) shifted this research to office level. They found that the size of a Big4 office is related to audit quality, larger offices deliver higher audit quality. The size is measured by the fees received from SEC registrants. Larger Big4 offices tend to have more in-house experience and more employees. The employees can consult with each other, in this way they are able to increase their audit quality. Choi et al. (2010) had the same results. They did the same research as Francis and Yu (2009) but instead of only Big4 firms they also took smaller firms into account. Choi et al. (2010) also mention that smaller offices more often depend on one client, which could lead to lower audit quality when the client put the office under pressure. On the other hand, the Big4 firms also do not want to lose their bigger clients. And the well-known scandals mentioned before were both audited by one of the Big-6 firms.

Since the introduction of the Form AP fillings by the PCAOB there is an increase in research on the effect of partner characteristics on audit quality. An audit partner is one of the owners of an accounting firm. Besides planning and reviewing the audit, the partner is responsible for maintaining clients and getting new clients. In this study audit partner characteristics are seen as specific characteristics that differ between partners (e.g. gender, experience and tenure). Until the introduction of the Form AP fillings there was not a lot of research on audit partner characteristics.

Gray and Ratzinger (2010) conducted a survey regarding financial statement audits by Big4 companies. Their sample consisted of financial statement preparers, financial statement users consisting of bankers, financial analysts and non-professional analysts and financial statement auditors. These stakeholders agree that for multinational and complex companies the Big4 audit reports are superior. The in-house training seems to be a strong contributor to this superiority. Although Big4 firms have superior audit quality for these companies, for companies without these characteristics the smaller firms provide more or less the same quality as Big4 firms.

The researchers mention that this is because there are many auditors at non-Big4 firms who used to work for Big4 firms. Besides, Big4 firms seem to provide higher audit quality than non-Big4 firms, due to their larger size and better training programs (Eshleman & Guo, 2014).

Cameran, Campa & Francis (2018) found that partner fixed effects account for 31% to 51% of the audit quality variation. Partner fixed effects are characteristics of a partner that do not change overtime, for example gender, education and experience. Besides, a research conducted in China shows that individual auditors affect audit quality (Gul et al., 2013). The largest part of previous research on the effect of partner characteristics on audit quality is about audit partner tenure. The result are mixed, following multiple researches there is no difference in audit quality during the audit partner tenure (Chen et al., 2008; Gipper et al., 2017; Manry et al., 2008). On the other hand, another research finds that the audit partner rotation provides a fresh look, which increases the restatement discoveries (Laurion, Lawrence, & Ryans, 2017). And lastly they find a decrease in audit quality during the audit tenure (Carey & Simnett, 2006; Litt, Sharma, Simpson, & Tanyi, 2014).

Burke, Hoitash, & Hoitash (2018) used partner characteristics for their research. They found a significant increase in audit quality and audit fees after the implementation of the Form APs. They also found that the partners gender, busyness, educational institution and social connection are related to the audit fee and audit efficiency, but not with the audit quality. They expected busyness to decrease the audit quality as the workload impacts the time and effort to be invested in a certain client. Another study with Italian Big4 offices used private information to find that educational background and the percentage of female leading auditors affect audit quality (Cameran, Ditillo, & Pettinicchio, 2018). In the US there is weak evidence that audit partner gender is associated with audit quality. In the same research they also do not find any evidence for an association between experience and audit quality (Lee, Nagy, & Zimmerman, 2016).

On the other hand, there is research that found an association between audit experience and audit quality. The higher the audit experience the higher the audit quality and also higher audit fees (Cahan & Sun, 2015; Goodwin & Wu, 2014). Also, auditors that experienced an audit failure are more likely to experience a failure in the

subsequent years. Although, female auditors, auditors with a master degree and more experienced auditors are less common to get involved in audit failure and are therefore expected to have a higher audit quality (Li, Qi, Tian, & Zhang, 2017). Related to the auditor experience is the audit specialization, an auditor with more experience with certain industries or companies with similar risk profiles, get familiar with them. Due to the familiarity the auditor knows what to look for and also knows the common pitfalls for certain clients (Zerni, 2012).

Overall the results are mixed. There is no clear evidence that Big4 firms perform better than non-Big4 firms. However, there is a positive relation between office size and audit quality. Larger offices within an audit firm perform better than smaller offices. Larger offices tend to have more in-house experience and more employees. These employees can consult with each other which could increase the audit quality. Previous research indicates that there is a difference in audit quality and audit fees on partner level (Christensen, Glover, Omer, & Shelley, 2016). However, these results are mixed and there is not one characteristic that provides consistent evidence. Besides there is no consistent evidence on the difference in audit quality between Big4 firms and non-Big4 firms. Furthermore, the reason why auditors leave the Big4 is not clear. This could be due to the pressure within a Big4, but also because the auditor does not meet the expectations of the Big4. As it is not clear why the auditor left the Big4 and if a Big4 auditor really has better audit quality, hypothesis 1 is stated as follow:

H1: Partners who used to work for the Big4 do not have a higher audit quality than partners without Big4 experience.

2.3 Audit Fee

2.3.1 Definition & Determinants

The audit fee is the price the client pays for the audit service. The audit fee is based on multiple determinants. Firstly, the supply and demand influences the audit fee. Secondly, the size of the client. The larger the client, the higher the audit fee. Another determinant is linked with the audit risk model. When the inherent risk or/and the control risk is high the auditor should put in more audit effort to decrease the audit risk. The more effort the audit costs, the higher the audit fee (Gonthier-Besacier & Schatt, 2007). The performance of the client is also related to the audit fee. When the profits are higher, the revenue recognition will be tested more extensively. This is more time

consuming and therefore the audit fee will be higher (Joshi & AL-Bastaki, 2003). This is the case with every balance sheet item that changes a lot compared to the previous year, but especially for the profit.

The existence of an internal auditor could decrease the audit fee. Although this depends on certain factors. Firstly, the availability of the internal auditor during the audit of the external auditor. When the internal auditor is available during the audit, the communication will be easier and questions will be answered faster. This will improve the audit efficiency. Another factor which is also stated in SAS No. 6 is that the external auditor is only allowed to use work of an internal auditor as evidence when it is of a sufficient level of quality. When this is not the case the auditor is not allowed to use this evidence. Lastly, the inherent risk will affect the influence of an internal auditor. As already explained in the audit risk model, the higher the inherent risk the higher the audit effort. If there are internal auditors but they do not know how to account for certain matters, the existence of internal auditors would not decrease the audit fee (Felix, Gramling, & Maletta, 2001). An internal auditor communicates with the audit committee. The audit committee is the link between the board of directors and the internal auditors. The audit committee, internal auditor and the audit fees seem to be complementary mechanisms. The existence of an audit committee is related with higher audit fees. Audit committees demand higher audit quality and therefore pay higher audit fees. These clients do not only pay higher audit fees but also have increased internal audits (Goodwin-Stewait & Kent, 2006).

Two other client specific factors are growth and the fiscal year-end. A growing company is mostly expected to have a greater degree of complexity and greater risk. Complexity and risk are also related to the inherent risk and will lead to more audit effort. The majority of companies end their fiscal year on the same date, namely December 31st. Due to the high demand during the busy season the audit fees will be higher (Gonthier-Besacier & Schatt, 2007).

At the same time, there is some bargaining power for the client when they change auditor. At first the client wants the audit fee as low as possible. Therefore, the client asks multiple firms for their proposal as he want to pay the lowest price. There are also some larger clients, audit firms want to have in their portfolio at all costs. In this case there is a probability of low balling. Low balling occurs when an audit firm

sets the audit fee below total current costs on the initial audit engagement. The audit firms expect to eliminate these losses with the future quasi-rents. The incumbent auditor can receive these quasi-rents, because it will be too costly for the client to switch auditors. At first due to the transactions cost of changing auditors, but also the new auditor will have higher start-up costs. On the other hand, this will lead to independence threats, because the auditor depends on the client to eliminate the first year's loss. There is a possibility the auditor turns a blind eye, as they do not want to lose the client (DeAngelo, 1981b).

An event that could affect the audit fees is the implementation of continuous auditing. Continuous auditing is constantly auditing during the year, instead of only performing an audit at the end of the fiscal year. Audit software will automatically control the financial information and send the salience transactions to the auditor. However, this method is not tested extensively. According to Alles, Brenan and Kogan (2018) the technology, laws and standards are mostly ready for the implementation of continuous auditing. Although the auditors themselves need time to get familiar with this way of working. There is not yet information available how this will affect the audit fee.

2.3.2 Previous Research

Previous research on audit fees is mainly based on what affects the audit fee and the existence of a fee premium. A fee premium is the premium a client pays because of a certain characteristic. There is a lot of mixed evidence on the existence and size of fee premiums on firm-level. For example, there is a broad stream of research which investigates if there is a premium for Big4 firms. These studies investigate if clients should pay more for the same audit when they ask a Big4 firm to perform the audit. In the UK there is evidence of a Big4 premium, this premium is not related with the audit quality as the researchers control for this effect (Campa, 2013). The same results are found in other countries like France (Gonthier-Besacier & Schatt, 2007) and Hong Kong (DeFond, Francis, & Wong, 2000). These results indicate that clients pay more for an audit by a Big4 firm, while there is no increase in quality. This result can be explained by the perceived differences in audit quality between Big4 firms and non-Big4 firms. Clients may pay more for audits by Big4 firms as the investors expect their audit reports to be more trustworthy.

Besides, if the audit is performed by a Big4 there is another characteristic that could affect the audit fee. The legal regime, cross-listed companies in stronger legal regimes than their home country pay higher audit fees than non-cross-listed companies. The stronger legal regimes also induce higher audit quality and therefore the clients are willing to pay the higher fees (Choi, Kim, Liu, & Simunic, 2009). In Belgium they found that the audit fees paid for female auditors are significantly higher than for men. This result was expected as women are more risk averse than men and therefore put in more effort (Hardies, Breesch, & Branson, 2015; Ittonen & Peni, 2012). Not only woman increase the audit fee, experience does also. The higher the audit experience the higher the audit quality and also higher audit fees (Cahan & Sun, 2015; Goodwin & Wu, 2014). Related to the auditor experience is the audit specialization, an auditor with more experience with certain industries or companies with similar risk profiles differentiate themselves from non-specialist auditors. Given that there is demand by the clients for these specialist, clients have to pay more for them (Zerni, 2012).

Gray and Ratzinger (2010) found that financial reports of Big4 firms are expected to be better than the financial reports of non-Big4 firms. In this way the financial reports of Big4 firms seem to have a positive effect on the stock price of a company. Therefore, Big4 firms can charge higher audit fees than non-Big4 firms, this difference is called the 'Big4 premium'. Choi, Kim, Liu & Simunic (2008) also found this result in their cross-country setting, although they mention that this result decreases when the legal liability regime becomes stronger. These results show that clients pay more for Big4 audits.

Nowadays, all the information of partners of audit firms is publicly available. Most of the audit firms have this information on their website or the partners themselves share their experience on LinkedIn. This way not only the clients but also the shareholders can see that a certain partner has Big4 experience and may asses their work as better than of partners without Big4 experience. Therefore, clients may pay a higher audit fee when they are audited by partners that used to work for the Big4 because the Big4 auditor has more knowledge and experience with difficult accounting problems. Not only the client values the work of a Big4 auditor as better, but the shareholders will as well. There are clear results that the audit fees paid for Big4 auditors are higher than non-Big4 auditors. However, there is no previous research about whether or not partners with Big4 experience are also

paid higher audit fees. Nevertheless I expect the same results as on firm level. Therefore hypothesis 2 is stated as follow:

H2: Partners who used to work for Big4 are paid a higher audit fee than partners without Big4 experience.

These hypotheses together measure the perceived audit risk. This means that the users only expect that the audit quality of a Big4 is better, but there is not a significant difference in actual quality (Campa, 2013; DeFond et al., 2000; Gonthier-Besacier & Schatt, 2007).

2.4 Summary

The definition of good audit quality in this thesis is when the audit report is in line with the accounting rules and gives a true and fair view of the firms underlying economics (DeFond and Zhang, 2014). The audit quality is related to the audit risk model, as the auditor should keep the audit risk as low possible to have good audit quality. On the other hand the auditor should be independent, an auditor should not get to familiar with a client as this could lead to losing his independency. An auditor that is not independent could turn a blind eye for certain matters, which lead to a decrease in audit quality.

The audit quality is difficult to measure, as it cannot be measured directly. However, there are multiple proxies to measure the audit quality. The proxies used in this thesis are the modified Jones model (Dechow et al., 1995), the accuracy of the going concern opinion and if the client just meets or beats the earnings target (Aobdia, 2019). Previous research on audit quality do not show a clear difference in audit quality between Big4 firms and non-Big4 firms. Therefore it is expected that there is no difference in audit quality between partner with Big4 experience and partners without this experience.

In the last paragraph the audit fee is discussed. T Although according to Boone et al. (2010) there is no significant difference in audit quality between Big 4 firms and second-tier firms, there is a perceived difference in audit quality between these two. he audit fee is the price the client pays for the audit service. The audit fee is determined by multiple determinants, for example the size and performance of the client, the existence of an external auditor and the fiscal year-end. Previous research shows that clients tend to pay more for audits conducted by Big4 firms, although these audits are not of better

audit quality. Nevertheless, they are willing to pay the Big 4 premium, simply because of the fact that the users of financial statements value the audit of Big 4 firms more. Nowadays, all the information of partners of audit firms is publicly available. The users of the financial statements could easily find more details about the auditors' employment history. Therefore, the second hypothesis is that clients pay more for audit performed by partners with Big4 experience.

Chapter 3 Research Design

This chapter explains how the hypothesis mentioned in chapter 2 will be investigated. This will be based on two regressions, one for each hypothesis. The audit quality will be measured with three proxies, these proxies will all be explained below. The chapter ends with the sample selection.

3.1 Audit quality

For the first hypothesis, the relation between Big4 experience and audit quality is measured. This relation is visualized in figure 1. To test this relation the following regression model is estimated based on previous research (Burke, Hoitash, & Hoitash, 2018; DeAngelo, 1981b; Francis & Yu, 2009; Blankley et al., 2012; Francis et al., 2005; Zerni, 2012):

$$AQ = \alpha_0 + \beta_1 BIG4Exp + \beta_2 Big4Years + \beta_3 BUSYNESS_{i,t} + \beta_4 TENURE +$$
$$\beta_5 EXPERIENCE + \beta_6 ASSETS_{i,t} + \beta_7 BUSSEG_{i,t} + \beta_8 GEOSEG_{i,t} +$$
$$\beta_9 INVREC_{i,t} + \beta_{10} FOREIGN_{i,t} + \beta_{11} LOSS_{i,t} + \beta_{12} CASHFLOW_{i,t} +$$
$$\beta_{13} MB_{i,t} + \beta_{14} LEVERAGE_{i,t} + \beta_{15} SALESGROWTH_{i,t} + \beta_{16} GC_{i,t} +$$
$$\beta_{17} MW_{i,t} + \beta_{18} RESTATE_{i,t} + \beta_{19} TOTALACC_{i,t} + \beta_{20} ACQUISITION_{i,t} +$$
$$\beta_{21} ACCELERATED_{i,t} + \beta_{22} FYEDEC_{i,t} + \beta_{23} Gender + \varepsilon_{i,t}$$

In this regression the dependent variable is audit quality. Audit quality will be measured with the modified Jones model, the accuracy of the going concern opinion and if the client reported a small profit or change in ROA. The variables of interest are BIG4Exp and BIG4years, where BIG4Exp is a dummy variable that is one when an auditor used to work for a Big4 firm. And BIG4Years is a continuous variable measuring the amount of years the partner worked at a Big4 firm.

3.1.1 Modified Jones Model

The modified Jones model (Dechow et al., 1995) is the first proxy to measure audit quality. This measurement is based on the discretionary accruals. To calculate the discretionary accruals, the total accruals should be first calculated with the following formula:

$$\frac{TA_{t-j}}{A_{t-j-1}} = \alpha_1 * \frac{1}{A_{t-j-1}} + \alpha_2 * \frac{\Delta REV_{t-j}}{A_{t-j-1}} + \alpha_3 * \frac{PPE_{t-j}}{A_{t-j-1}} + \varepsilon_{t-j} \ for \ j = 1, \dots, k$$

Where TA_1 are the total accruals for a given year and A_{t-1} are the total assets in year t-1. ΔREV_{t-j} is the change in revenue in year t and PPE_{t-j} is the property, plant and equipment in year t. After calculating the total accruals, the non-discretionary accruals are calculated as follow:

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

Where ΔREC_t is the change in accounts receivables in year t. To get to the discretionary accruals I subtract the non-discretionary accruals of the total accruals. The discretionary accruals are assumed to be the accruals used to manage earnings (Warfield, Wild, & Wild, 1995). The earnings could be managed upwards, but also downwards. To simplify the interpretation of this variable, the absolute value of the discretionary accruals is taken. This indicates the higher the discretionary accruals the lower the audit quality.

3.1.2 Going Concern Opinion

The second proxy to measure audit quality is based on the accuracy of the going concern opinion. As already mentioned an auditor should issue a going concern opinion when it is expected that the client is not able to be operational for the upcoming twelve months. There are two types of errors an auditor may make. Issuing a GCO when the client does not go bankrupt (type I error) and failing to issue a GCO when the client went bankrupt (type II error) (Fogel-Yaari & Zhang, 2013). As the information for bankruptcy is not available, the Altman's Z-score is calculated (Altman, 1983). This model predicts 75% correct if a company is going bankrupt (Altman, Iwanicz-Drozdowska, Laitinen & Suvas, 2017). The following formula is used to calculate the Z-score:

$$Z - score = 1.2x_1 + 1.4x_2 + 3.3x_3 + 0.6x_4 + 0.999x_5$$

Where X1=Working Capital/Total Assets; X2=Retained Earnings/Total Assets; X3=Earnings before Interest and Taxes/Total Assets; X4=Market Value of Equity/Book Value of Total Liabilities and X5=Sales/Total Assets. According to Altman (1983) a client with a Z-score below 1.81 is likely to go bankrupt and should therefore receive a GCO. A new dummy variable GOODAQ is created which is 1 when a there is good audit quality and zero when there is bad audit quality. Good audit quality

is assumed when there is no type I or type II error, based on the result of the Z-score and if the auditor issued a GCO. This is the case when BANKRUPT=GCO. Where BANKRUPT is a dummy variable, which takes 1 if the z-score is below 1.81.

3.1.3 Just meeting/beating the earnings target

The third proxy is also related to earnings management. It is assumed that a client wants to report a profit or an increase in profit every year. When a client have to report a loss, they may use earnings management to at least show a small profit. They may also use earnings management when the profit is just below the profit of previous year and raise the profit to report a small increase. To operationalize this it is assumed that a return on assets (ROA) between 0% and 3% is a small profit and a raise between 0% and 1% of the ROA is assumed as small rise in profit (Aobdia, 2019). The ROA is measured by dividing the net income by the total assets. When a company satisfies one of the restrictions above, the audit quality is assumed as bad. Because the auditor allowed the client to use earnings management to rise their profit.

3.2 Audit Fee

The second hypothesis, the relation between Big4 experience and audit fees, will be measured by the following regression model based on audit fee models from previous research (Burke, Hoitash, & Hoitash, 2018; DeAngelo, 1981b; Francis & Yu, 2009; Blankley et al., 2012; Francis et al., 2005; Zerni, 2012):

$$
\begin{aligned}
Audit\ Fee = \beta_0 \ + \ &\beta_1 BIG4Exp \ + \ \beta_2 Big4Years \ + \ \beta_3 BUSYNESS_{i,t} \ + \\
&\beta_4 TENURE \ + \ \beta_5 EXPERIENCE \ + \ \beta_6 ASSETS_{i,t} \ + \ \beta_7 BUSSEG_{i,t} \ + \\
&\beta_8 GEOSEG_{i,t} \ + \ \beta_9 INVREC_{i,t} \ + \ \beta_{10} FOREIGN_{i,t} \ + \ \beta_{11} LOSS_{i,t} \ + \\
\beta_{12} CASHFLOW_{i,t} \ + \ &\beta_{13} MB_{i,t} \ + \ \beta_{14} LEVERAGE_{i,t} \ + \ \beta_{15} SALESGROWTH_{i,t} \ + \\
&\beta_{16} GC_{i,t} \ + \ \beta_{17} MW_{i,t} \ + \ \beta_{18} RESTATE_{i,t} \ + \ \beta_{19} TOTALACC_{i,t} \ + \\
\beta_{20} ACQUISITION_{i,t} \ + \ &\beta_{21} ACCELERATED_{i,t} \ + \ \beta_{22} FYEDEC_{i,t} + \beta_{23} Gender \ + \\
&\varepsilon_{i,t}
\end{aligned}
$$

This relation is visualized in figure 2. In this regression the audit fee is the dependent variable. The audit fee is measured as the natural logarithm of the total amount paid by the client for the audit. For this regression the same independent variables are used as for the first hypothesis. Clients have to pay higher audit fees for partners with more experience, therefore this regression will be controlled for the total amount of experience.

3.3 Control Variables

The control variables for both regressions are based on previous research (Burke, Hoitash, & Hoitash, 2018; DeAngelo, 1981b; Francis & Yu, 2009; Blankley et al., 2012; Francis et al., 2005; Zerni, 2012). At first, the audit experience of the partner, the years of experience of a partner can increase the audit quality and the audit fee (Cahan & Sun, 2015; Goodwin & Wu, 2014). Second, the audit tenure. As a broad stream of literature noted, there is an association between the audit tenure and audit quality and audit fees (Carey & Simnett, 2006; Chen et al., 2008; Ghosh & Moon, 2005). Audit tenure will be measured as the amount of years an audit firms audits a specific client, as there is no data available on partner level. Busyness could decrease the audit quality as the time and effort an auditor is able to spend on a client decreases (Sundgren & Svanström, 2014). Gender also affect audit quality as woman are more risk-averse and therefore put in more effort, which should lead to higher audit quality and a higher audit fee (Hardies et al., 2015; Ittonen & Peni, 2012).

Beside, of the partner characteristics, there will also be some client specific controls identified by prior research. These are mainly based on the size of the client. As larger clients are expected to have the resources to provide higher audit quality. Proxies for the size of the client are the total assets and sales growth. FYEDEC is a dummy variable which takes one if the client has a fiscal year ending in December. As most of the companies have a fiscal year ending in December this could, due to the busy season, lead to lower audit quality (Gonthier-Besacier & Schatt, 2007). RESTATE and MW are variables that indicate bad audit quality. When a client had a material weakness or restatement in the previous year, this could indicate lower audit quality in the next year. This could also lead to a higher fee as the auditor puts in more audit effort to prevent for occurring again. The remainder of the control variables are described in table 1.

3.4 Sample selection and Data

The data for this research is collected from the following databases: PCAOB auditor search, COMPUSTAT and AuditAnalytics. The PCAOB Auditorsearch is a public database of engagement partners and audit firms participating in audits of U.S. public companies. This database contains information about the audit engagement for the fiscal years 2014 till 2019. From this database all Big4 firms, observations without CIK code and firms outside the United States are deleted. After removing

the duplicates, Big4 firms, firms outside the US and observations without CIK code there are 12.698 observations left. This data is merged to the COMPUSTAT database, this data contains all the financial and segment data of the companies. The variables that are not already available are calculated with the variables in the COMPUSTAT database and described in Table 1. Companies in the financial sector with a Standard Industrial Classification from 6000 until 6999 are set to specific regulations that could influence the result significantly and therefore deleted from the sample.

For the first hypothesis the discretionary accruals are calculated. The financial information to calculate the discretionary accruals is all available in the COMPUSTAT database. Before these are calculated the continuous variables are winsorized at 1% to mitigate the outliers. To calculate the discretionary accruals, first the total accruals are calculated using the industry information. The industry information is based on the first two numbers of the sic code. All sic codes with less than 20 observations are deleted, so there is enough industry information to calculate the total accruals. Then the non-discretionary accruals are calculated and distracted from the total accruals. Lastly, the absolute value is taken. The dependent variable FEE is the natural logarithm of the total audit fees paid. The natural logarithm is taken because otherwise there would be large differences between the lowest and highest audit fees. Besides the audit fee is also related to the size of the client.

For the remaining dataset, the data for the variables BIG4Exp, Big4Years, MANAGER, SENIOR, PARTNER and EXPERIENCE is hand collected from LinkedIn. This dataset consists of 995 unique partners. The genders of these partners are determined using the Genderize database. This database contains information with a percentage of which each name is used for a male or female. All percentages above 75% are assumed as right, for the remaining sample the gender is determined by the LinkedIn profile or company site. The busyness of a partner is measured as the number of clients a partner serves per year.

The data related to the audit is gathered from Audit Analytics, this database contains the information about restatements, going concern opinions and audit fees. After merging all datasets together the entire dataset consist of 3.341 observations. This

dataset consists of 1.370 observations with Big4 experience. Due to missing observations for certain variables there is a difference in the sample size per regression.

Table 2: Sample size	Observations
Panel A	
Initial sample retrieved from PCAOB auditorsearch	39,119
After dropping Big4 firms and firms outside the U.S.	14.830
After dropping duplicates	12.698
After merging with the COMPUSTAT data	5.903
After dropping the financial sector (6000-6999)	4.255
After merging with the hand-collected auditor data	3.341
Panel B	
Sample modified Jones model regression	2.226
Sample Going Concern Opinion	2.775
Sample small profit or change in ROA	2.620
Sample audit fee regression	2.761

Table 2: Panel A: Shows the amount of observations in the initials sample and the amount of observations left after dropping and merging. Panel B: Provides the sample size for every regression.

3.5 Validity

The construct validity estimates to what extent the proxies measure what you want to measure. This mainly involves the audit quality proxies. Taking a look at figure 1 in the appendix, there are three proxies that measure the audit quality, even though there is always some kind of measurement error as they not measure audit quality directly. This occurs, because there are some assumptions made to use these proxies. For the modified Jones model the normal accruals are measured for the entire industry, this could differ per company and therefore lead to a measurement error. I also assume the discretionary accruals are used for earnings management, this does not have to be the case. The same goes for the assumption that companies with a small profit or increase in profit used earning management to create these results. Again this does not have to be the case. Lastly, for the accuracy of the GCO is assumed that clients with a Z-score below 1.81 should receive a GCO. There could be good reasons that show that this client should not get a GCO, although their Z-score is below 1.81. All these assumptions are made to operationalize the audit quality, however there could be some measurements errors.

The internal validity estimates to what extent conclusions about causal relationships can be made. Taking a look at the Libby boxes in the appendix this indicates that the independent variables has an effect on the dependent variable. To maintain the internal validity there are multiple control variables. Besides there are some control variables that influence the audit quality and audit fee according to previous research (Burke, Hoitash, & Hoitash, 2018; DeAngelo, 1981b; Francis & Yu, 2009; Blankley et al., 2012; Francis et al., 2005; Zerni, 2012). Also, the control variables lower the change on endogeneity problems. However, there is still a possibility that there are variables that may influence the audit quality and audit fee that are not in the regression.

The external validity estimates to what extent the result are applicable outside of the context of the study. As the study supports on empirical data, the data is applicable to the outside. However the external validity outside the US is probably quite low. Because there is a difference in accounting regulations between the US and Europe. In Europe the accounting regulation is primarily principle based, where the US GAAP is primarily rules based. Although, both regulators try to confront to each other, there are still differences.

3.6 Summary

This chapter contains the regression to answer both hypothesis' and the research question. For the first hypothesis, three proxies to measure the audit quality are used, namely the discretionary accruals, the accuracy of a going concern opinion and if the client just meets or beats the earnings target. For the second hypothesis the dependent variable is the audit fee, which is measured as the total fee paid by the client for the audit. The regressions both have the same variables of interest, if the partner has Big4 experience and the amount of years the partner worked for the Big4.

Not only both regressions have the same variables of interest, they also have the same control variables. At first there is controlled for the partner characteristics, a partner with more experience may have higher audit quality. Besides the client may pay more for this experience, therefore this also influences the audit fee. Another matter controlled for is the clients' size and performance. A bigger client requires the auditor to put in more effort, to decrease the audit risk to a reasonable level. The increase in audit effort increases the audit fee. On the other hand, bigger clients have the resources

to provide higher audit quality. Lastly, the quality of the previous audit is taken into account. If the client had a material weakness or restatement in the previous financial statements this could influence the audit quality and audit fee in the next year.

The initial sample is retrieved from the PCAOB's auditorsearch, this database contains information about which partner did the client. All firms outside the US and Big4 firms are deleted from the sample. This dataset is merged with the financial and audit information retrieved from COMPUSTAT and AuditAnalytics. For the remaining partners the information about if and for how long they worked at the Big4 is hand collected from LinkedIn. The remaining dataset contains 3.341 observations, of which 41.1% has Big4 experience.

Chapter 4 Results

This chapter contains the result. It starts with the descriptive statistics, where the most interesting variables of the regressions are explained. Then, the correlation between all variable will be discussed, where the main focus lies on the dependent variables and variables of interest. Subsequently, the results for the regressions mentioned in chapter 3 are discussed. Also, two additional test are conducted. In the first additional test the years a partner worked at the Big4 is replaced by the highest function of the partner at the Big4. For the second additional test the sample is divided into Second-tier and Non-second-tier firms.

4.1 Descriptive analysis

Table 3 contains the descriptive statistics of the dependent variables, variables of interest and the control variables used for both hypotheses. Where |DAC| are the absolute value of discretionary accruals, which are used as audit quality measure for the first hypothesis. Higher absolute discretionary accruals are assumed to be related to lower audit quality, as the discretionary accruals are used for earnings management. The second measure of audit quality is the accuracy of the going concern opinion. According to table 3 70,6% of the entire sample has good audit quality, based on the accuracy of the going concern opinion. The last audit quality measurement is if the client has a small profit or a small change in ROA. According to table 3, 8,9% of the sample has a ROA below 3%, which is seen as small profit. Or a change in ROA of less than 1%.

The variables of interest are BIG4Exp and Big4Years. The mean of the variable BIG4Exp shows that 41.1% of the sample used to work for a Big4 firm. Besides, the partners that used to work for a Big4 firm worked there on average for 9 years. The entire sample worked on average 25 years as an auditor. The lowest value for experience is 7 years which is low for someone to be a partner, however this person started his own firm. From all the partners 8,8% of them became manager at the Big4. Also, 15% of them became senior and only 6,3% became partner. Another interesting statistic is that only 17,1% of the sample is female. Busyness is the amount of client a partner audits in each year, on average they audit 2 clients. But some partners have a large number of clients and audit up to 15 clients per year.

The audit quality of previous years is also considered in the regressions. The control variables MW and RESTATE control for the audit quality in the previous years. According to table 3, 18,2% of the sample had a material weakness in the previous year. Besides, 12.4% restated their financial statement in the previous year. The remaining variables are mostly related to the performance of the client. LOSS indicates that more than 50% of the sample had a negative net income. This is relatively a high amount and could influence the external validity of the results. At last, the variable FYEDEC shows that 77% of the sample ends their fiscal year in December. This is in line with the expectations.

TABLE 3: Descriptive statistics

Variables	N	Mean	St.Dev	min	Median	max
|DAC|	2533	1.078	3.235	0	.278	36.935
GCO accuracy	3341	.706	.456	0	1	1
Small profit or change in ROA	3341	.089	.285	0	0	1
FEE	3323	12.793	1.642	7.471	12.612	17.685
BIG4Exp	3341	.411	.492	0	0	1
Big4Years	3341	3.591	5.725	0	0	34
MANAGER	3341	.088	.302	0	0	4
SENIOR	3341	.15	.357	0	0	1
PARTNER	3341	.063	.244	0	0	1
Second-tier	3341	.24	.427	0	0	1
Experience	3341	24.959	7.681	7	24	61
Dgender	3341	.171	.377	0	0	1
BUSYNESS	3341	2.886	2.301	1	2	15
TENURE	3341	5.721	2.337	1	7	9
ASSETSS	3339	4.721	2.813	.011	4.429	12.81
BUSSEG	3341	3.568	3.475	1	3	63
GEOSEG	3341	1.058	.866	0	1	2
INVREC	3299	.224	.213	0	.175	.997
FOREIGN	3341	.26	.438	0	0	1
LOSS	3341	.542	.498	0	1	1
CASHFLOW	3263	-.678	33.02	-541.091	.028	1705.545
MB	3290	3018.947	10412.48	0.336	103.175	78267.37
LEVERAGE	3338	7.081	63.417	.001	.557	1811.545
SALESGROWTH	2922	1.169	24.113	-1	.04	1125.125
GCO	3341	.236	.425	0	0	1
RESTATE	3341	.124	.329	0	0	1
MW	3341	.182	.386	0	0	1
FYEDEC	3341	0.770	0.421	0	1	1

Table 3 contains the descriptive statistics for all variables in the regressions for hypothesis one and two. It also contains the variables used in the additional test.

Table 4 contains the pairwise correlations of the variables used for the regressions. This table is used to make an univariate analysis. At first there is a significant positive correlation between the two audit quality measurements. This relation is in line with the expectations, as both variables measure the audit quality.

Table 4: Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) |DAC|	1.000														
(2) GCO accuracy	0.089*	1.000													
(3) Small profit or change in ROA	-0.027	-0.026	1.000												
(4) FEE	-0.285*	-0.034*	0.127*	1.000											
(5) BIG4Exp	-0.052*	-0.031	0.001	0.001	1.000										
(6) Big4Years	-0.042*	-0.013	0.000	0.017	0.751*	1.000									
(7) MANAGER	-0.047*	-0.000	0.034	-0.026	0.350*	0.144*	1.000								
(8) SENIOR	-0.018	0.008	-0.008	-0.000	0.502*	0.466*	-0.123*	1.000							
(9) PARTNER	-0.018	-0.007	-0.008	-0.001	0.312*	0.651*	-0.076*	-0.109*	1.000						
(10) secondtier	-0.104*	0.033	0.083*	0.264*	-0.002	0.033	0.026	-0.027	0.055*	1.000					
(11) Experience	-0.070*	-0.055*	0.016	0.069*	0.145*	0.296*	-0.014	0.128*	0.226*	-0.099*	1.000				
(12) Dgender	0.010	0.023	0.008	0.121*	-0.011	-0.018	0.025	-0.019	-0.011	0.002	-0.125*	1.000			
(13) BUSYNESS	0.146*	-0.023	-0.040*	-0.168*	-0.076*	-0.105*	-0.005	-0.020	-0.076*	-0.148*	-0.090*	-0.065*	1.000		
(14) TENURE	-0.008	0.067*	0.021	0.160*	-0.061*	-0.077*	0.010	-0.063*	-0.067*	-0.075*	-0.044*	0.085*	-0.024	1.000	
(15) ASSETS	-0.387*	-0.070*	0.159*	0.889*	-0.006	0.011	-0.016	-0.015	-0.002	0.229*	0.064*	0.099*	-0.175*	0.126*	1.000
(16) BUSSEG	-0.145*	-0.018	0.079*	0.558*	-0.014	-0.011	-0.022	-0.012	-0.015	0.053*	0.046*	0.092*	-0.101*	0.127*	0.486*
(17) GEOSEG	-0.233*	0.001	0.044*	0.491*	0.027	0.035*	0.015	0.022	0.014	0.107*	0.052*	0.054*	-0.121*	0.081*	0.458*
(18) INVREC	-0.107*	0.112*	0.049*	0.049*	-0.026	-0.018	0.024	-0.017	-0.015	0.005	0.015	-0.016	-0.054*	0.070*	0.034
(19) FOREIGN	-0.056*	0.020	0.011	0.282*	0.004	-0.015	-0.001	0.002	-0.011	0.053*	0.026	0.043*	-0.029	0.037*	0.214*
(20) LOSS	0.157*	-0.184*	-0.081*	-0.445*	0.017	0.006	0.002	0.025	0.008	-0.087*	0.001	-0.076*	0.113*	-0.150*	-0.515*
(21) CASHFLOW	0.008	0.001	0.062*	0.046*	0.022	0.042*	0.001	-0.015	0.067*	0.036*	-0.002	0.004	-0.028	-0.001	0.059*
(22) MB	-0.002	0.009	-0.006	0.001	-0.011	-0.008	-0.006	-0.000	-0.005	0.029	-0.015	-0.009	-0.003	0.022	-0.007
(23) LEVERAGE	0.268*	0.061*	-0.031	-0.134*	-0.044*	-0.043*	-0.012	-0.029	-0.024	-0.057*	-0.048*	-0.030	0.136*	0.019	-0.256*
(24) SALESGROWTH	0.114*	-0.028	-0.011	-0.042*	-0.019	-0.018	-0.010	-0.011	-0.010	-0.023	-0.004	0.024	0.000	-0.002	-0.039*
(25) GCO	0.346*	0.107*	-0.142*	-0.497*	-0.004	-0.024	0.012	0.005	-0.021	-0.187*	-0.066*	-0.036*	0.188*	-0.095*	-0.608*
(26) MW	0.167*	-0.003	-0.042*	-0.229*	0.006	-0.012	0.029	-0.005	0.007	-0.093*	-0.020	-0.013	0.114*	-0.114*	-0.273*
(27) RESTATE	0.012	0.001	0.007	-0.019	-0.014	0.005	-0.001	-0.010	0.018	0.028	0.016	0.001	0.057*	-0.018	-0.013
(28) TOTALACC	-0.193*	0.009	-0.002	0.054*	0.001	-0.007	0.008	-0.008	-0.008	0.008	-0.032	0.015	-0.003	0.009	0.035*
(29) ACQUISITION	0.110*	0.026	-0.077*	-0.382*	0.017	0.012	0.010	-0.006	0.038*	-0.093*	-0.019	-0.014	0.069*	-0.023	-0.350*
(30) ACCELERATED	-0.203*	0.071*	0.076*	0.687*	-0.013	0.006	-0.027	-0.004	-0.007	0.255*	0.028	0.090*	-0.147*	0.136*	0.696*
(31) FYEDEC	-0.034	-0.081*	0.021	0.060*	0.021	0.019	-0.008	0.018	0.011	0.035*	-0.014	-0.020	0.072*	-0.123*	0.064*

* shows significance at the .05 level

Table 4: Pairwise correlations (continued)

Variables	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)
(16) BUSSEG	1.000															
(17) GEOSEG	0.562*	1.000														
(18) INVREC	0.140*	0.265*	1.000													
(19) FOREIGN	0.387*	0.402*	0.108*	1.000												
(20) LOSS	-0.261*	-0.270*	-0.119*	-0.115*	1.000											
(21) CASHFLOW	0.016	0.024	0.011	0.008	-0.049*	1.000										
(22) MB	-0.013	-0.021	-0.014	-0.014	0.018	-0.004	1.000									
(23) LEVERAGE	-0.070*	-0.105*	-0.072*	-0.017	0.069*	-0.036*	-0.002	1.000								
(24) SALESGROWTH	-0.014	-0.021	-0.037*	-0.026	0.010	0.009	0.008	0.027	1.000							
(25) GCO	-0.304*	-0.372*	-0.155*	-0.124*	0.414*	-0.073*	0.029	0.185*	0.065*	1.000						
(26) MW	-0.126*	-0.144*	0.004	-0.046*	0.195*	-0.051*	-0.010	0.095*	0.019	0.290*	1.000					
(27) RESTATE	-0.002	-0.017	0.006	-0.013	0.004	-0.006	-0.007	0.006	-0.007	0.022	0.028	1.000				
(28) TOTALACC	0.031	0.050*	0.036*	0.025	-0.037*	0.030	-0.005	-0.025	-0.018	-0.064*	-0.053*	0.009	1.000			
(29) ACQUISITION	-0.286*	-0.220*	-0.018	-0.162*	0.172*	-0.009	0.011	0.050*	0.018	0.221*	0.068*	0.006	-0.022	1.000		
(30) ACCELERATED	0.395*	0.341*	-0.047*	0.219*	-0.439*	0.010	-0.018	-0.098*	-0.036	-0.435*	-0.236*	0.008	0.024	-0.300*	1.000	
(31) FYEDEC	-0.015	-0.023	-0.084*	-0.050*	0.062*	0.017	-0.037*	-0.028	0.007	0.026	-0.035*	-0.005	0.006	-0.020	0.016	1.000

*Table 4 contains the Pearson/Spearman correlation between all variables used in the main regressions and additional analysis. The * shows significance at the .05 level.*

However, the fee is significant negatively correlated with the absolute discretionary accruals indicating that when the audit quality become worse, the audit fee rises. I would expect this to be a positive relation, like for the accuracy of the GCO. As clients want to pay more for higher quality audits. Also, the correlation between the absolute discretionary accruals and BIG4Exp and Big4Years is significant negatively correlated. This is not in line with the first hypothesis, as no relation between audit quality and Big4 experience was expected. The control variables are mostly significant correlated with the dependent variables. The variables not significant correlated with dependent variables are significant related to other control variables. Therefore, these control variables still have an impact on the dependent variables. There is no perfect correlation between all variables, which means that there is no multicollinearity.

4.2 Audit Quality Results

Table 5 contains the results of the OLS regression and probit regressions for the first hypothesis. The first hypothesis predicts no difference in audit quality between partners that used to work for the BIG4 and partners without this experience. This effect is captured by the variables BIG4Exp and Big4Years. The audit quality is measured with three proxies, the absolute discretionary accruals, the accuracy of the going concern opinion and if the client has a small profit or small profit increase. The lower the absolute discretionary accruals, the higher audit quality. On the other hand, the higher the accuracy of the going concern opinion, the higher the audit quality. For the small profit the lower the likelihood the higher the audit quality. According to the first hypothesis for the first regression no significant effect of BIG4Exp and Big4Years are expected.

The table is divided into 4 parts, where the first two are with and without industry and year fixed effects and the second two are with industry and year fixed effects. The industry fixed effects are based on the first two numbers of the Standard Industrial Classification (SIC) code. These fixed effects are considered, because it is a cross-sectional regression. These fixed effects control for possible omitted variables. All regressions include robustness checks. Besides, for all the models in table 5 the goodness-of-fit is significant at a 1% level, which indicates that the proper regression is used. The Adjusted R-squared for the first regression is 20,4%, which means that the regression explains 20,4% of the variation of the absolute discretionary accruals. After

Table 5: Regression Hypothesis 1

VARIABLES	(1) |DAC|	(2) |DAC|	(3) GCO accuracy	(4) small profit or change in ROA
BIG4Exp	-0.116	-0.010	-0.139	0.064
	(-1.09)	(-0.09)	(-1.59)	(0.60)
Big4Years	0.018	0.012	0.009	-0.001
	(1.58)	(1.03)	(1.17)	(-0.07)
Experience	-0.012*	-0.013*	-0.006	-0.001
	(-1.79)	(-1.91)	(-1.45)	(-0.18)
GENDER	0.217	0.198	-0.046	-0.026
	(1.43)	(1.32)	(-0.61)	(-0.27)
BUSYNESS	0.048	0.033	-0.011	-0.013
	(1.31)	(0.88)	(-0.76)	(-0.69)
TENURE	0.036**	0.042***	0.017	-0.013
	(2.45)	(2.81)	(1.34)	(-0.79)
ASSETS	-0.113***	-0.109***	-0.097***	0.101***
	(-4.36)	(-3.62)	(-4.66)	(3.92)
BUSSEG	0.024***	0.024**	-0.016	0.005
	(2.76)	(2.36)	(-1.62)	(0.51)
GEOSEG	-0.203***	-0.163***	0.032	-0.097*
	(-3.71)	(-3.12)	(0.74)	(-1.81)
INVREC	-0.311	0.175	0.581***	0.415**
	(-0.90)	(0.39)	(3.25)	(1.97)
FOREIGN	0.145	0.117	-0.057	0.037
	(1.32)	(1.03)	(-0.82)	(0.41)
LOSS	-0.165**	-0.195***	-0.837***	0.075
	(-2.41)	(-2.95)	(-11.98)	(0.82)
CASHFLOW	-0.066	-0.065	-0.014	0.035
	(-1.11)	(-1.11)	(-1.01)	(0.95)
MB	-0.000**	-0.000***	0.000	-0.000
	(-2.36)	(-3.40)	(0.96)	(-0.84)
LEVERAGE	0.002	0.002	0.032*	-0.002
	(0.77)	(0.60)	(1.85)	(-0.29)
SALESGROWTH	0.023	0.023	0.002	-0.002
	(1.03)	(1.03)	(0.97)	(-0.95)
GCO	0.907***	0.877***	0.687***	-0.644***
	(5.76)	(5.56)	(6.80)	(-4.17)
MW	0.263*	0.260*	-0.138*	-0.016
	(1.76)	(1.66)	(-1.70)	(-0.15)
RESTATE	0.021	-0.006	0.009	0.041
	(0.14)	(-0.04)	(0.11)	(0.39)
TOTALACC	-0.052	-0.053	-0.004	-0.007*
	(-1.24)	(-1.28)	(-0.93)	(-1.94)
ACQUISITION	-0.062	0.002	0.039	-0.127
	(-1.52)	(0.04)	(0.57)	(-1.49)
ACCELERATED	0.033	0.056	0.689***	-0.274**
	(0.47)	(0.82)	(7.83)	(-2.41)
FYEDEC	0.038	-0.053	-0.222***	0.117
	(0.40)	(-0.45)	(-2.75)	(1.15)
Constant	1.178***	6.193***	1.774**	-2.002***
	(4.12)	(10.81)	(2.48)	(-4.66)
Observations	2,226	2,226	2,666	2,620
Adjusted R-squared	0.204	0.226		
Pseudo R-squared			0.189	0.113
Industry & Year FE	NO	YES	YES	YES

Table 5 contains the regressions for the first hypothesis. audit quality is measured with three different proxies. The first proxy shows the result with and without Industry and Year fixed effects. Robust t-statistics in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

including the industry and year fixed effects the adjusted R-squared rises to 0.226, so the explanatory power of the regression rises after including the fixed effects. For the other regression the fixed effects are included as these raised the adjusted R-squared. Table 9 shows for every regression the adjusted R-squared or the pseudo R-square. For all regression the adjusted/pseudo R-squared rises after including both the year and industry fixed effects.

Column 1 and 2 both show a positive effect of Big4 experience on the audit quality, however this result is not significant. This indicates that a partner that used to work for a Big4 has no better nor worse audit quality than partners without this experience, which is in line with hypothesis 1. Besides, column 3 and 4 show contradictory results, with these measures Big4 experience decrease the audit quality. Nevertheless, also these results are insignificant.

When looking at the control variables it is odd to see that for the absolute discretionary accruals and the accuracy of the GCO the variable LOSS has significant negative effect on the audit quality, at a 0,01 significance level. Indicating that a client with a loss have higher audit quality measured with the absolute discretionary accruals, but lower audit quality measured with the accuracy of the going concern opinion. Besides, the tenure decreases the audit quality when measured with the absolute discretionary accruals, but has no effect when measured with the GCO accuracy and having a small profit or profit increase.

4.3 Audit Fee Results

Table 6 contains the OLS regressions for the second hypothesis. This hypothesis predicts higher audit fees for partners that used to work for a Big4 than partners without Big4 experience. The audit fee is measured as the natural logarithm of the total audit fees paid by the client. The experience of the partner is measured with the variables BIG4Exp and Big4Years. To not reject the second hypothesis the variables of interest should have a significant positive effect on the audit fee. Just like the regressions for the first hypothesis, this regression executed with fixed effects (2) and without fixed effects (1). For both regressions the F-statistics are below 0,01, this indicates that the right regressions' specifications are used. Adding the industry and year fixed effects increase the adjusted R-squared. The industry fixed effects are again measured with the first two numbers of the SIC code. Both fixed effect control for possible omitted variables in this cross-sectional regression. The adjusted R-squared for the second

Table 6: OLS regression Hypothesis 2

VARIABLES	(1) FEE	(2) FEE
BIG4Exp	0.005	0.004
	(0.14)	(0.13)
Big4Years	0.000	-0.001
	(0.01)	(-0.24)
Experience	0.004**	0.004**
	(2.10)	(2.39)
GENDER	0.087***	0.081***
	(2.90)	(2.79)
BUSYNESS	-0.008*	-0.007
	(-1.72)	(-1.43)
TENURE	0.009	0.008
	(1.56)	(1.37)
ASSETS	0.468***	0.503***
	(50.82)	(50.06)
BUSSEG	0.033***	0.030***
	(4.34)	(4.03)
GEOSEG	0.078***	0.062***
	(4.17)	(3.30)
INVREC	0.283***	0.202***
	(4.44)	(2.87)
FOREIGN	0.146***	0.091***
	(5.10)	(3.20)
LOSS	0.183***	0.188***
	(6.83)	(6.92)
CASHFLOW	-0.002	-0.002
	(-1.34)	(-1.08)
MB	0.000***	0.000***
	(6.01)	(4.32)
LEVERAGE	0.001***	0.001***
	(5.44)	(4.16)
SALESGROWTH	-0.000*	0.000
	(-1.86)	(0.55)
GCO	0.196***	0.209***
	(4.94)	(5.36)
MW	0.058*	0.039
	(1.67)	(1.14)
RESTATE	0.008	0.003
	(0.22)	(0.09)
TOTALACC	0.001	0.001*
	(1.63)	(1.67)
ACQUISITION	-0.155***	-0.088***
	(-5.85)	(-3.30)
ACCELERATED	0.210***	0.152***
	(5.80)	(4.19)
FYEDEC	0.048*	0.075**
	(1.67)	(2.29)
Constant	9.976***	9.492***
	(116.74)	(24.66)
Observations	2,839	2,839
Adjusted R-squared	0.855	0.867
Industry & Year FE	NO	YES

Table 6 contains the regressions for the second hypothesis. The regressions show the result with and without Industry and Year fixed effects. Robust t-statistics in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

regression including fixed effects is 86,7%. This means that this regression explains quite a lot of the variation in the audit fee.

BIG4Exp has a positive effect in both regressions with and without fixed effects, the sign is as expected. However, the t-statistic is not significant. Big4Years has a coefficient that shows the opposite sign than expected. But again, the t-statistic is not significant and therefore the second hypothesis is rejected. The regressions indicate that there is no difference in audit fees between partners that worked for a Big4 and partners without this experience. The reasoning behind this result could be that the users of the financial statement do not care who performed the audit. According to Doxey, Lawson, Lopez, and Swanquist (2018) investors do not care who perfromed the audit, this is measured on partner level. Therefore, it could be that also the client only differentiates between Big4 and non-Big4 but do not take the career of the partner into account.

Almost all the remaining control variables do have a significant effect on the audit fee. At first the gender of the partner, clients pay as expected higher audit fees for female partners. Besides, the longer the firm serves a certain client the higher the audit fee. This is not in line with the expectations as the client gets familiar with the client, which should decrease the effort. Another control variable that is not in line with the expectations is CASHFLOW, the higher the cashflow the more effort by the auditor is expected. This should be included into the audit fee.

At last, the control variable acquisition shows another sign than expected. A client that acquired another company in the same year of the year before is expected to pay a higher audit fee, as the auditors are not yet familiar with the new company. The remaining control variables have a sign as expected. When a client has an ending fiscal year in December the auditors need to audit during busy season, as there is high demand for audit services the price increases.

4.4 Additional Tests

4.4.1 Highest function

For both hypothesis there is no significant effect of Big4 experience on the audit quality and audit fee. This could be because partners that only have experience as staff are also in the sample of partners with Big4 experience. To control if this is the case the highest function of the partners at the Big4 will be taken into account, instead of the amount of years they worked at the Big4. This will be divided into

three dummy variables, which divides three groups. Namely, at least manager, at least senior manager and partner. Assuming that a function below manager would not influence the audit quality. All regressions used for the first and second hypothesis will also be conducted as additional test, now including the highest function instead of the years of experience. Table 7 contains these regressions for additional testing. The adjusted R-squared for these regressions are almost the same as the ones in the main regression. Besides for all regressions the fixed effects are implemented as these increased the adjusted R-squared in the regressions for hypothesis one and two. For these regressions the same results as stated in the hypothesises are expected. This implies that for the regression measuring the effect of Big4 experience and function on the audit quality, no effect is expected. And I do expect an effect of Big4 experience and function on the audit fee.

Table 7 shows multiple difference in contrast to previous conducted regressions in table 5 and 6. At first the variable BIG4Exp switches to positive, which indicates that the audit quality decreases when an auditor has Big4 experience. Even more interesting is to see that the audit quality raises when an auditor stops at a Big4 as manager, but it decreases when they worked until senior manager or even manager. However, these results are not significant and therefore do not reject hypothesis 1. On the other hand, when measuring the audit quality with the accuracy of issuing a GCO the effect of BIG4Exp is significantly negative. Indicating that the audit quality decreases when the partner worked for a Big4. However, if the partner became at least senior manager or partner at the Big4 the audit quality rises significantly at a significance level of respectively 0.05 and 0.1. The last proxy for audit quality is if the client has a small profit or small change in ROA. This regression only shows a significant result for the variable manager at a 0.1 significance level. Which shows that the audit quality decreases when a partner's highest function at the Big4 was manager.

The regression on audit fees is somehow the same as the regression in table 6. Again, only manager has a significant effect at a 0.1 significance level. Also, this result is contradictory to hypothesis 2 which expects the audit fee to rise if a partner has Big4 experience. This regression shows that the audit fee decreases when a partner's highest function at the Big4 was manager. For the other functions the sign is positive, indicating that the fees rise, when a partner became senior manager or partner. Nevertheless, these results are insignificant.

Table 7: Regression Additional test experience

VARIABLES	(1) |DAC|	(2) GCO accuracy	(3) small profit or change in ROA	(4) FEE
BIG4Exp	0.045	-0.170**	-0.067	0.005
	(0.39)	(-2.00)	(-0.62)	(0.15)
MANAGER	-0.121	0.046	0.264**	-0.082*
	(-1.19)	(0.43)	(1.98)	(-1.83)
SENIOR	0.121	0.224**	0.110	0.018
	(0.83)	(2.11)	(0.79)	(0.42)
PARTNER	0.219	0.231*	0.011	0.029
	(0.99)	(1.66)	(0.06)	(0.51)
Experience	-0.014*	-0.007*	-0.001	0.003**
	(-1.94)	(-1.74)	(-0.17)	(2.08)
GENDER	0.213	-0.039	-0.015	0.082***
	(1.40)	(-0.53)	(-0.16)	(2.82)
BUSYNESS	0.030	-0.011	-0.015	-0.007
	(0.80)	(-0.74)	(-0.77)	(-1.39)
TENURE	0.040***	0.017	-0.016	0.008
	(2.70)	(1.36)	(-1.01)	(1.45)
ASSETSS	-0.148***	-0.090***	0.137***	0.504***
	(-3.83)	(-3.77)	(4.70)	(50.03)
BUSSEG	0.022**	-0.011	0.009	0.029***
	(2.22)	(-1.18)	(0.85)	(4.00)
GEOSEG	-0.153***	0.024	-0.123**	0.062***
	(-2.96)	(0.56)	(-2.32)	(3.30)
INVREC	0.189	0.586***	0.396*	0.205***
	(0.42)	(3.33)	(1.88)	(2.91)
FOREIGN	0.121	-0.059	0.021	0.092***
	(1.08)	(-0.85)	(0.24)	(3.25)
LOSS	-0.197***	-0.829***	0.087	0.187***
	(-2.96)	(-12.07)	(0.97)	(6.91)
CASHFLOW	-0.065	-0.025	0.026	-0.002
	(-1.11)	(-1.54)	(0.74)	(-1.11)
MB	0.000***	0.000	-0.000	0.000***
	(3.05)	(1.22)	(-1.42)	(4.23)
LEVERAGE	0.002	0.009	-0.005	0.001***
	(0.59)	(1.42)	(-0.74)	(4.22)
SALESGROWTH	0.023	-0.002	-0.003	0.000
	(1.03)	(-1.22)	(-1.18)	(0.56)
GCO	0.817***	0.734***	-0.598***	0.210***
	(5.41)	(7.41)	(-4.01)	(5.39)
MW	0.259*	-0.133*	-0.028	0.041
	(1.66)	(-1.65)	(-0.26)	(1.20)
RESTATE	0.002	-0.003	0.005	0.003
	(0.02)	(-0.04)	(0.04)	(0.08)
TOTALACC	-0.053	-0.007	-0.007**	0.001*
	(-1.28)	(-1.58)	(-2.00)	(1.76)
ACQUISITION	-0.030	0.056	-0.074	-0.088***
	(-0.63)	(0.82)	(-0.87)	(-3.30)
ACCELERATED	0.109	0.686***	-0.336***	0.151***
	(1.43)	(7.71)	(-2.93)	(4.16)
FYEDEC	-0.067	-0.237***	0.122	0.074**
	(-0.57)	(-2.95)	(1.21)	(2.25)
Constant	1.104**	1.801***	-1.822***	9.491***
	(2.46)	(2.67)	(-3.05)	(24.46)
Observations	2,237	2,738	2,704	2,839
Adjusted R-squared	0.227			0.867
Pseudo R2		0.186	0.121	
Industry & Year FE	YES	YES	YES	YES

*Table 7 contains the regressions for the first additional test. Audit quality is measured with three different proxies and. The first three columns are based on the first hypothesis, the last column is based on the second hypothesis. Robust t-statistics in parentheses: *** p<0.01, ** p<0.05, * p<0.1.*

4.4.2 Second-Tier Firms vs. Non-Second-Tier Firms

The second additional test looks at the difference between second-tier firms and non-second-tier firms. Since the implementation of the SOX the clients and auditors' incentive for higher audit quality increased, mainly due to the litigation risk. This could lead to a more uniform audit quality (Nelson, 2006). On the other hand, larger audit firms do have more money to increase the audit quality, not only with the amount of human capital but also with their audit software. This difference is also expected between second-tier firms and non-second-tier firms. Looking at the previous results for hypothesis 1 I still expect no difference in audit quality between Partners with Big4 experience and without. On the other hand, in accordance with hypothesis 2, higher audit fees are expected. These higher audit fees are expected due to the perceived audit risk, but also to pay for more human capital and better audit software.

All regressions used for the first and second hypothesis will also be conducted as additional test, but now divided into second-tier and non-second-tier firms. In this study Grant Thornton and BDO are seen as second-tier audit firms, this is based on the research by Boone et al. (2010). Also, the sample contains more than 10% of both firms, together they represent approximately 24% of the entire sample. Like in the first additional test, the adjusted R-squared and pseudo R-squared are almost equal to the ones in table 5 and 6. All of them increase a bit, except the R-squared for FEE in second-tier firms.

The results of these regressions are shown in table 8. Just like the first additional test there are multiple difference compared to table 5 and 6. Again for the effect of Big4 experience on the absolute discretionary accruals the sign changes. Partners working for second-tier firms have significantly more absolute discretionary accruals than partners at second-tier firms without Big4 experience. This implies they have lower audit quality than the partners without Big4 experience. Also, when measuring the audit quality with the accuracy of a GCO the coefficient is significant at a 0.05 significance level. Also, this result shows that the accuracy decreases when the partner has Big4 experience and therefore the audit quality decreases. When the audit quality is measured by the client having a small profit or a small increase in ROA the results are insignificant and therefore in line with the hypotheses. For the remaining regressions the variables of interest stay insignificant. This implies that for non-second-tier firms there is no difference between auditors with or without Big4 experience.

Table 8: Regression Additional test second-tier firms vs. non-second-tier firms

VARIABLES	Second-Tier firms				Non-Second-Tier Firms			
	(1) |DAC|	(2) GCO accuracy	(3) small profit or change in ROA	(4) FEE	(5) |DAC|	(6) GCO accuracy	(7) small profit or change in ROA	(8) FEE
BIG4Exp	0.207**	-0.542**	0.107	-0.072	-0.070	-0.011	0.056	0.015
	(2.23)	(-2.46)	(0.49)	(-1.36)	(-0.50)	(-0.11)	(0.45)	(0.36)
Big4Years	-0.009	0.029	-0.017	0.005	0.018	0.005	0.003	-0.002
	(-1.64)	(1.28)	(-0.84)	(1.13)	(1.18)	(0.56)	(0.32)	(-0.60)
Experience	0.001	-0.019*	-0.009	0.007**	-0.016*	-0.004	0.004	0.006***
	(0.30)	(-1.69)	(-0.66)	(2.35)	(-1.86)	(-0.90)	(0.65)	(3.42)
Dgender	-0.074	0.152	0.004	0.006	0.297	-0.012	-0.037	0.118***
	(-1.35)	(0.90)	(0.02)	(0.11)	(1.44)	(-0.14)	(-0.32)	(3.40)
BUSYNESS	0.009	0.139**	-0.145**	-0.005	0.025	-0.017	0.007	0.003
	(0.53)	(2.48)	(-2.08)	(-0.34)	(0.61)	(-1.12)	(0.34)	(0.54)
TENURE	0.002	0.046*	0.005	0.009	0.043**	0.012	-0.013	0.018**
	(0.16)	(1.73)	(0.16)	(1.08)	(2.15)	(0.77)	(-0.66)	(2.51)
ASSETS	0.009	-0.018	0.088	0.396***	-0.185***	-0.128***	0.147***	0.509***
	(0.43)	(-0.33)	(1.33)	(23.84)	(-3.58)	(-4.42)	(4.00)	(41.15)
BUSSEG	0.020	-0.079***	0.072**	0.053***	0.024**	0.002	-0.004	0.027***
	(1.39)	(-2.93)	(2.54)	(6.40)	(1.97)	(0.14)	(-0.32)	(3.30)
GEOSEG	-0.032	0.151	-0.203*	0.078**	-0.164**	-0.010	-0.133**	0.048**
	(-0.65)	(1.34)	(-1.89)	(2.43)	(-2.46)	(-0.20)	(-2.01)	(2.28)
INVREC	0.233	1.534***	-0.143	0.053	0.155	0.447**	0.514**	0.219***
	(1.46)	(3.19)	(-0.31)	(0.43)	(0.28)	(2.24)	(2.07)	(2.75)
FOREIGN	0.017	-0.318*	0.036	0.052	0.179	0.014	-0.034	0.074**
	(0.28)	(-1.91)	(0.21)	(1.09)	(1.16)	(0.17)	(-0.30)	(2.19)
LOSS	-0.045	-1.031***	0.523***	0.080*	-0.267***	-0.856***	-0.083	0.177***
	(-0.66)	(-6.95)	(2.74)	(1.70)	(-3.05)	(-10.26)	(-0.75)	(5.41)
CASHFLOW	-0.058	-0.098	1.049***	-0.136	-0.064	-0.022	0.012	-0.002
	(-0.28)	(-0.35)	(2.61)	(-1.53)	(-1.09)	(-1.35)	(0.55)	(-1.30)
MB	-0.000	-0.000	-0.000*	0.000***	0.000***	0.000*	-0.000	0.000***
	(-1.19)	(-0.10)	(-1.67)	(2.78)	(2.95)	(1.67)	(-0.81)	(4.65)
LEVERAGE	0.048	-0.451**	0.102	0.215***	0.001	0.009	-0.006	0.001***
	(1.09)	(-2.31)	(0.68)	(4.53)	(0.53)	(1.35)	(-0.74)	(4.46)
SALESGROWTH	0.043	-0.021	-0.019	-0.008	0.023	-0.002	-0.003	0.000
	(1.50)	(-0.79)	(-0.31)	(-0.86)	(1.03)	(-1.31)	(-1.18)	(0.82)
GCO	-0.105	0.743**	omitted	0.136	0.915***	0.716***	-0.486***	0.264***
	(-0.89)	(2.48)		(1.58)	(5.41)	(6.63)	(-3.01)	(6.26)
MW	0.062	-0.453**	-0.167	0.255***	0.292	-0.031	-0.024	0.002
	(0.76)	(-2.55)	(-0.74)	(4.48)	(1.40)	(-0.33)	(-0.19)	(0.05)
RESTATE	-0.011	0.029	-0.066	-0.069	-0.045	-0.045	0.082	0.021
	(-0.12)	(0.15)	(-0.31)	(-1.54)	(-0.22)	(-0.44)	(0.64)	(0.49)
TOTALACC	0.120	-0.558*	1.065	0.072	-0.053	-0.007	-0.006*	0.001
	(0.88)	(-1.96)	(1.46)	(0.53)	(-1.29)	(-1.53)	(-1.94)	(1.20)
ACQUISITION	0.115**	-0.016	-0.133	0.042	-0.092	0.057	-0.010	-0.132***
	(2.12)	(-0.11)	(-0.86)	(1.08)	(-1.34)	(0.70)	(-0.09)	(-3.90)
ACCELERATED	-0.111	0.373**	-0.431**	0.047	0.127	0.803***	-0.402***	0.145***
	(-1.43)	(2.11)	(-2.14)	(0.86)	(1.20)	(7.20)	(-2.69)	(3.31)
FYEDEC	0.012	-0.034	0.153	0.111*	-0.065	-0.238***	0.119	0.071*
	(0.20)	(-0.18)	(0.75)	(1.75)	(-0.43)	(-2.58)	(1.00)	(1.95)
Constant	0.047	0.547	-0.178	10.326***	6.069***	1.520**	-1.957***	8.814***
	(0.19)	(0.93)	(-0.21)	(24.22)	(11.56)	(2.27)	(-3.07)	(74.05)
Observations	574	631	599	733	1,663	2,025	1,996	2,106
Adjusted R-squared	0.264			0.796	0.225			0.883
Pseudo R2		0.251	0.165			0.194	0.136	
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES

Table 8 contains the regressions for the second additional test. Audit quality is measured with three different proxies and. The first three columns are based on the first hypothesis, the last column is based on the second hypothesis. Robust t-statistics in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Which is in line with the first hypothesis. However, the variables of interest are also insignificant for the regressions with the audit fee as dependent variable. This rejects the second hypothesis.

4.5 Summary

Based on the main regressions there is no perceived audit quality for partners with Big4 experience. Although the first hypothesis is accepted, which means that there is no difference in audit quality between partners with Big4 experience and without. However, the clients also do not pay more for audits conducted by partners with Big4 experience. This result does not only reject the first hypothesis, but also negatively answers the research question. Indicating that there is no perceived audit quality for partners with Big4 experience.

In the additional analysis the total amount of years a partner worked at the Big4 was replaced by the highest function the partner had at the Big4. The result show that when the audit quality is measured with the accuracy of the GCO, that Big4 experience decreases the audit quality when the highest function is below senior or manager. Also, when the highest function was manager at the Big4 the audit fee decreases at a significance level of 0.1. In the second additional analysis the second-tier firms BDO and Grant Thornton are separated from the non-second-tier firms. When measuring the audit quality with the absolute discretionary accruals and the accuracy of the GCO, both show a significant decrease of the audit quality when a second-tier partner has Big4 experience. For the non-second-tier firms there is no difference in audit quality between auditors with or without Big4 experience. For the audit fee there is no significant effect of Big4 experience for both sub-samples.

Chapter 5 Conclusion

There is still much room for improvement when it comes to the quality of work of audit firms. This harms the reputation of the auditors. To improve this reputation and the audit quality the SEC and PCAOB introduce new requirements. According to Cameran, Campa & Francis (2018) and Gul, Wu & Yang (2013) the largest part of the audit quality variation is explained by partner effects. Since January 2017 it is mandated by the PCAOB to disclose the name of the partner with every audit report. This regulation makes it possible to investigate which partner characteristics influence the audit quality. In previous research there is no clear answer if Big4 firms have higher audit quality than non-Big4 firms (Boone et al., 2010; Jeong & Rho, 2004). On the other hand there is proof that clients pay higher audit fees for audits performed by Big4 firms (Burke et al., 2018; Campa, 2013; Gonthier-Besacier & Schatt, 2007). These researches mainly focuses on the difference between Big4 and smaller firms. This research shifts this to the differences between non-Big4 firms. Assumed is that partners with Big4 experience at non-Big4 firms do not have higher audit quality than partners without this experience, as Big4 does not perform better than smaller offices. However, stakeholders seem to be willing to pay more for Big4 auditors. When clients do pay more for an audit of the same quality, it is called perceived audit risk. The client perceives the audit of a Big4 auditor to be higher, while instead the audit quality is at the same level. This effect is investigated with the following research question: Is there a difference in perceived audit quality between partners with Big4 experience and partners without Big4 experience?

In previous research there is no clear answer to whether or not Big4 firms have higher audit quality than non-Big4 firms (Boone et al., 2010; Jeong & Rho, 2004). On the other hand there is proof that clients pay higher audit fees for audits performed by Big4 firms (Burke et al., 2018; Campa, 2013; Gonthier-Besacier & Schatt, 2007). These researches mainly focuses on the difference between Big4 and smaller firms. This research shifts this to the differences between non-Big4 firms. Assumed is that partners with Big4 experience at non-Big4 firms do not have higher audit quality than partners without this experience, as Big4 does not perform better than smaller offices. However, clients seem to be willing to pay more for Big4 auditors. Mainly, because the stakeholders perceive the quality of the Big4 to be higher, while instead the audit quality is at the same level. This effect is investigated with the following research question: Is

there a difference in perceived audit quality between partners with Big4 experience and partners without Big4 experience?

To answer this question two hypothesis are stated. The first hypothesis is accepted, which means that there is no difference in audit quality between partners with Big4 experience and without. However, the clients also do not pay more for audits conducted by partners with Big4 experience. According to these results there no difference in perceived audit quality between partners with and without Big4 experience. The reason here fore could be that only the brand name of the Big4 is related to the perceive audit risk and not the Big4 experience. Also the additional test conducted do not find a difference in audit fee between partners with and without Big4 experience. These tests only find differences in audit quality between partners with and without Big4 experience. Besides these results are contrary to what was expected, as no effect was expected.

This research is subverted to certain limitations. At first, the size of the sample. The sample used in this research is not that large, the main reason therefore is that the PCAOB auditor information is only available for audits ending after January 2017. Secondly, the audit is not only performed by the partner, although the partner is held reliable for the work performed the quality is not only based on is work. The quality of the audit performed also differs between the teams the partner is working with. However, it is not possible to also take into account the team the auditor is working with. The third limitation of this research is that it is not possible to measure audit quality directly. To solve this problem proxies are used. These proxies are used to measure the audit quality, however this could lead to measurement errors. This is also seen in the results of this research, there are three proxies that measures audit quality. All three proxies show different results in the regressions. The last limitation is that the partner information is hand-collected, this could also lead to measurement errors. Although this hand-collected information is checked for odd statistics, there still could be some typos.

Future research could increase the amount of data, this is only possible after a few years as the data increases every year with approximately the same amount. Increasing the sample period could lead to different results. Future research could also focus on the composition of the audit team and the effect of this composition on the

audit quality. Hereby the researchers could indicate certain characteristics that influence the result of a team. These characteristics can be compared with other teams and result in which characteristics within a team lead to the higher audit quality. But the data could also be used to compare partners, where partners are matched on the composition of the team. The results could show if partners with the same team compositions, differ in audit quality. Which may indicate the composition of the team does or does not influence the audit quality.

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Appendix

Variables

Table 1: Description of the variables used in the main regression model

A	Dependent variables
Variable name	*Description*
| DAC |	The absolute discretionary accruals, estimated by the modified Jones model (Dechow, Sloan, & Sweeney, 2015).
GCO accuracy	Dummy variable, takes 1 if there is good audit quality, based on Altman's (1983) Z-score and if the company has issued a GCO.
Small profit or change in ROA	Dummy variable, takes 1 if the ROA is between 0% and 3% or the change in ROA is between 0% and 1%.

B	Variables of interest
Variable name	*Description*
BIG4Exp	Dummy variable, takes 1 if a partner used to work for a Big4 firm.
Big4Years	The amount of years a partner worked for the Big4.
MANAGER	Dummy variable, takes 1 if a partners highest function at the Big4 was manager.
SENIOR	Dummy variable, takes 1 if a partners highest function at the Big4 was senior.
PARTNER	Dummy variable, takes 1 if a partners highest function at the Big4 was partner.

C	Control variables
Variable name	*Description*
BUSYNESS	The amount of client per partner.
TENURE	The amount of consecutive years the firm is serving this client.
EXPERIENCE	The amount of years the partner is working as auditor.
ASSETS	Natural logarithm of total assets of the client.
BUSSEG	Sum of the reported business segments per client.
GEOSEG	Sum of reported geographic segments per client.
INVREC	Sum of inventory and accounts receivable deflated by total assets.
FOREIGN	Dummy variable, takes 1 if there are non-zero currency translations.
LOSS	Dummy variable, takes 1 if there is loss in the prior period.
CASHFLOW	Cash from operating activities deflated by the lagged value of total assets .
MB	The market value of equity .
LEVERAGE	The total liabilities deflated by the total assets .
SALESGROWTH	Year-over-year sales growth .
GCO	Dummy variable, takes 1 if a going concern opinion has been issued in the previous fiscal year.
RESTATE	Dummy variable, takes 1 if the company announced a restatement of the previous financial statement.

TOTALACC	Net cash flow from operating activities subtracted from income before extraordinary items deflated by the lagged assets .
ACQUISITION	Dummy variable, takes 1 if the company has acquired or merged with another company in this or the last fiscal year.
ACCELERATED	Dummy variable, takes 1 if the company is an accelerated filer.
FYEDEC	Dummy variable, takes 1 if the company has a fiscal year ending in December.
GENDER	Dummy variable, takes 1 if the partner is female.

A	**Modified Jones model**
Variable name	*Description*
TA	Total accruals .
A	Total assets.
ΔREV	The change in revenue between t-1 and t .
ΔREC	The change in accounts receivable .
PPE	The gross value of property, plant and equipment .
NDA	Non-discretionary accruals.

B	**Going Concern Opinion**
Variable name	*Description*
Z-score	Measures the likelihood of bankruptcy
Bankrupt	Dummy variable, takes 1 if the z-score is below 1.8.

Table 9: Main regressions with different fixed effects.

VARIABLES	(1) |DAC|	(2) |DAC|	(3) |DAC|	(4) GCO accuracy	(5) GCO accuracy	(6) GCO accuracy	(7) small profit or change in ROA	(8) small profit or change in ROA	(9) small profit or change in ROA	(10) FEE	(11) FEE	(12) FEE
BIG4Exp	-0.025	-0.025	-0.126	-0.127	-0.134	-0.150*	0.044	0.043	0.056	0.013	0.011	0.014
	(-0.22)	(-0.23)	(-1.17)	(-1.48)	(-1.57)	(-1.86)	(0.42)	(0.41)	(0.56)	(0.36)	(0.32)	(0.38)
Big4Years	0.013	0.013	0.019*	0.009	0.010	0.012	-0.000	0.000	-0.005	-0.001	-0.001	-0.001
	(1.14)	(1.15)	(1.65)	(1.19)	(1.25)	(1.58)	(-0.04)	(0.00)	(-0.53)	(-0.44)	(-0.40)	(-0.21)
Control variables												
Observations	2,237	2,237	2,237	2,738	2,738	2,853	2,704	2,708	2,849	2,839	2,839	2,839
Adjusted R-squared	0.233	0.233	0.211							0.859	0.859	0.850
Pseudo R2				0.185	0.182	0.129	0.119	0.116	0.0587			
Industry FE	YES	YES	NO	YES	YES	NO	YES	YES	NO	YES	YES	NO
Year FE	YES	NO	YES	YES	NO	YES	YES	NO	YES	YES	NO	YES

Table 9 contains the main regressions with different fixed effects. Only the variables of interest are showed, however the regressions are conducted with all the control variables as shown in table 5 and 6. This table shows why is chosen for to use bot Year and Industry fixed effects . Robust t-statistics in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Libby Boxes

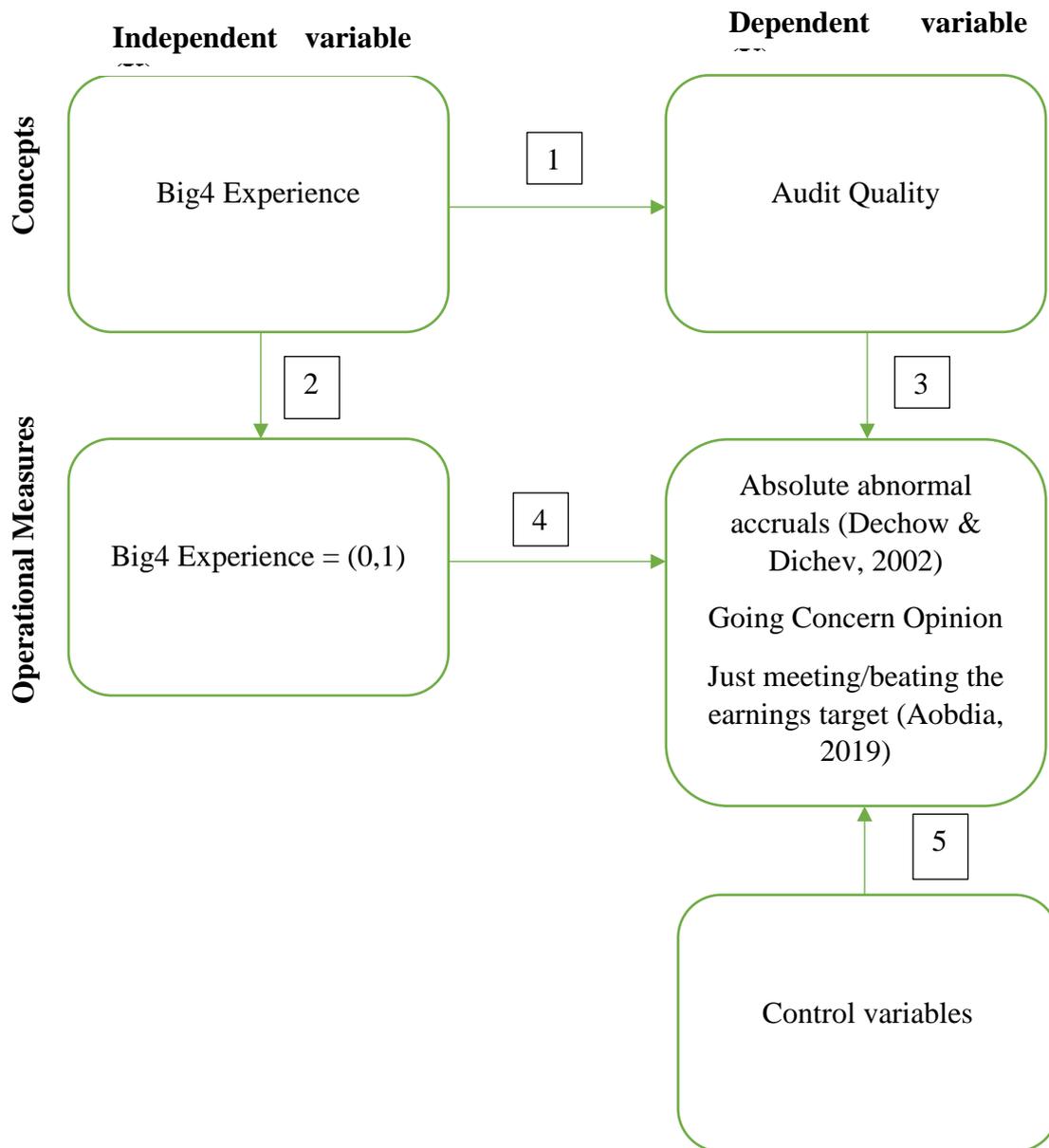Figure 1: libby box for hypothesis 1

Independent   variable   **Dependent   variable**

Figure 2: libby box for hypothesis 2

Independent   variable

Dependent   variable

Concepts

Operational Measures

Big4 Experience	Audit Fee

1

2

3

Big4 Experience = (0,1)	Audit Fee

4

5

Control variables