

# **Determinants of the Auditor's Decision to Waive Audit Adjustments**

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## **Abstract**

Based on a recent large sample with a non-U.S. background, we analyze the impact of different factors on the auditor's decision to book or waive an audit adjustment. We provide evidence that some factors that have not yet been analyzed in previous archival data-based studies do influence the auditor's decision. One of these factors is qualitative materiality, which is not only a factor that receives significant attention from accounting and audit standard-setters, but is also a factor that may affect the economic decisions of the users of financial statements. Other factors include a "hard close" approach to prepare and audit the financial statements, as well as the quality of the client's management (its integrity and competence). We also analyze factors that have previously been found to be determinative of the auditor's decision to book or waive and are unable to confirm an association for some of these factors. Obtaining an  $R^2$  of 0.57, our regression model can explain the majority of the variance associated with the decision to book or waive audit adjustments very well.

## **Keywords**

Audit adjustments, audit differences, International Standards on Auditing (ISAs), materiality

## **JEL classification**

M40, M41, M42

## 1. Introduction

By issuing the audit opinion and the auditor's report, the auditor provides reasonable assurance that the financial statements under audit are free from material misstatements.<sup>1</sup> In other words, after receiving an unqualified audit opinion, financial statements should not, to a high (although not absolute) degree of certainty, contain any material misstatements. During the course of their audit, the auditor must document every difference that is "not clearly trivial" (International Standard on Auditing (ISA) No. 450.5 and .A2 f.). This "not clearly trivial" threshold is substantially *lower* than the audit materiality threshold (ISA No. 320.10 ff.), and thus also below the threshold constituting a material misstatement. Documenting every difference that is "not clearly trivial" is necessary, since an individual, immaterial difference together with other immaterial differences can result, in aggregate, in a material misstatement of the financial statements. The auditor is finally faced with the decision as to which audit adjustments may be left uncorrected ("waived") by the client, since these differences, even if waived, will not result in a material misstatement of the financial statements, and which differences, if waived, will require the auditor to consider modifying their audit opinion. Coming from a different angle, it is by now widely accepted that the final (audited) financial statements are the result of negotiations between client and auditor (see e.g., Antle and Nalebuff 1991; Hatfield, Houston, Stefaniak and Usrey 2010). Against this background, it is important to examine which factors drive the auditor's decision to have one audit difference corrected while "waiving" another.

There are already some studies that examine determinants of the auditor's decision to book or waive an audit adjustment. The studies are set out in detail in section 2 of this paper. This prior evidence is at the same time both extensive and incomplete. It is extensive, as a sizable body of

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<sup>1</sup> ISA No. 200.17 in conjunction with IFAC Framework.11.

prior studies already exists in this field of audit research. However, the prior evidence is also somewhat lacking in a number of ways:

First, prior literature, if based on audit firms' archival data and/or working papers, is solely based on U.S. evidence, that is, financial statements prepared in accordance with U.S. GAAP, audited under U.S. GAAS, and within a U.S. legal framework (including factors such as litigation environment and auditor liability). Only very limited evidence exists whether or not the factors found to be determinative of the auditor's decision also hold under other financial reporting standards, other authoritative audit guidance, and other legal frameworks. Notably, there is a growing number of experiment-based studies, one of which<sup>2</sup> was also conducted with a non U.S. background. However, archival data based studies and experimental settings have typical strengths and weaknesses in terms of internal and external validity. Compared to archival-data based research designs, the internal validity is usually stronger in experimental settings, but the external validity may be affected by settings which are not rich enough (Ng and Tan 2003, 815) and by factors that are difficult to reproduce in experimental settings, such as client pressure, and litigation, or reputation risks. Although these factors may also be difficult to control in archival-based studies, it is possible to *capture* their influence on other measurable items like audit differences, as these factors are present throughout audit practice and thus have a pervasive influence on the archival data. Furthermore, the sample data used in our study was gained from audit practice and includes a lot of data often used in experimental studies. One can therefore assume that our study ensures both high internal, as well as external validity. Overall, it seems desirable to verify archival-data based evidence in experimental settings and vice versa. In providing first evidence based on archival data with a non U.S. background, we contribute to the literature by verifying whether prior U.S.-based evidence can be generalized.

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<sup>2</sup> Ng 2007, with a Singaporean background.

Second, a large number of factors remain that arguably *could* influence the auditor's decision, but have so far not been explored: For example, an accounting-based remuneration scheme, the quality of the client's management (i.e., integrity and competence), and a hard close approach to prepare the financial statements are likely to be influential for the question of whether to book or waive a difference. In addition, qualitative materiality has recently received much attention in the professional literature as well as by accounting and audit standard-setters, one of the reasons being that quantitative thresholds alone cannot capture the complexity of audit reality. Moreover, the standard-setter now reminds auditors to consider both quantitative and qualitative factors in assessing materiality (ISA No. 450.A15 f.). A quantitatively small misstatement may nevertheless affect the economic decisions of the users of financial statements. For example, the misstatement may affect compliance with debt covenants or it may serve to hide failure to meet analysts' consensus expectations. Therefore, qualitative factors must be considered.

Third, consistent with the recent trend towards experimental research designs, evidence based on auditors' archival data is mostly older, dating from the 1990s or even the 1980s. Since that time, the audit environment has seen a plethora of substantial changes in terms of concentration in the market for audit firms (Big 4 instead of Big 8), changes in auditor liability regimes, developments in corporate governance (such as how audit committees operate), and the ever-growing importance of risk management, culminating in a shift to a business risk audit (BRA) approach (e.g., ISA No. 315, 330), to name but a few, while at the same time accounting and audit standards have become more harmonized and international. Today, the International Financial Reporting Standards (IFRSs) and the International Standards on Auditing (ISAs) have gained a high significance

globally in accounting and auditing.<sup>3</sup> These substantial developments in the audit environment and regime pose the question of whether or not evidence found some decades ago still holds today.<sup>4</sup>

We address these issues using a regression model that incorporates the influence of “new” factors on the auditor’s decision to book or to waive (i.e., factors previously not examined in prior studies), while at the same time controlling for factors that have previously been found to be determinative. We obtain an adjusted  $R^2$  of 0.57 in our regression model, which appears to explain the auditor’s decision exceptionally well.<sup>5</sup>

The remainder of this paper is organized as follows: Section 2 discusses existing literature on the matter including previous findings. Section 3 gives a brief overview on the audit environment, definitions, and the relevant authoritative literature. Building on this, we develop our hypotheses. Section 4 deals with our sample and research design. Section 5 sets out our findings and discusses the limitations of our study. The summary in section 6 contains our main conclusions and describes possible future research questions.

## **2. Prior literature**

While there are over 100 studies based on audit differences<sup>6</sup>, only a small number of these studies have already examined different factors and their impact on the auditor’s decision to have an adjustment corrected or to “waive” it.

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<sup>3</sup> The Canadian standard-setter is also adopting ISAs for financial statement audits.

<sup>4</sup> For example, evidence exists that audit committee support for an audit adjustment proposed by the auditor is significantly higher after the U. S. Sarbanes-Oxley Act, and that this support is higher if audit committee members are members of the auditing profession (i.e., hold a CPA title) (DeZoort, Hermanson and Houston 2008).

<sup>5</sup> Similar studies typically reach an adjusted  $R^2$  of between 0.19 and 0.35, for example, Icerman and Hillison 1991, 32; Wright and Wright 1997, 24; Joe, Wright and Wright 2008, 34.

<sup>6</sup> For a review of previous studies on audit differences, see Eililfsen and Messier 2000; Ruhnke 2009.

### ***Audit adjustment characteristics***

There is conclusive evidence that the auditor is more inclined to accept uncorrected differences if these are *subjective* in nature, rather than objective (Wright and Wright 1997; Braun 2001; Nelson, Elliott and Tarpley 2002; Ng 2007). Previous studies generally attribute this finding to two cognitive distortions, being (1) “pressure exercised by the client” and (2) “justification effects”: In certain constellations (e.g., in order to reach certain profit thresholds), the client will exercise pressure on the auditor (e.g., in terms of the level of fees, re-election of the auditor, and the provision of additional non-assurance services to an assurance client, potentially enabling the auditor to realize additional quasi-rents). The auditor, on the other hand, is more likely to yield to this kind of client pressure if different measurements or accounting options can be more easily justified on the grounds of existing room for discretion and judgment.

Also, prior evidence shows that auditors are more likely to accept uncorrected differences if these differences are *income-increasing*, in other words the misstatements underlying the audit adjustments are *income-decreasing* (Wright and Wright 1997; Braun 2001; Nelson, Elliott and Tarpley 2002; Nelson, Elliott and Tarpley 2003). This can be explained by the litigation and reputation risk associated with the nature of the difference. The auditor is far more likely to be confronted with the need to justify their actions (i.e., accepting an uncorrected difference) in litigation procedures or in court when the misstatement underlying the difference is income-increasing. In addition, the client is more likely to engage in earnings management and (fraudulent) earnings manipulation in order to boost income (rather than cut it) (Braun 2001, 80). Similarly, Libby and Kinney (2000) found that, in the case of income-increasing misstatements (i.e., income-decreasing differences), the auditor is more likely to waive these adjustments if booking them would result in failure to meet meeting analysts’ forecast earnings. Extending these

findings, Ng (2007) provides evidence that the number of auditors that insist on a quantitative immaterial difference being booked varies in accordance with the nature of the earnings threshold the client is trying to meet: Results indicate that auditors have a higher propensity to book a difference that affects the client's ability to meet recent earnings than one that affects the client's ability to meet analysts' forecast earnings. It is also shown that the availability of explicit materiality guidance (with the effect of enhancing the auditors' awareness of earnings thresholds) also raises the auditors' propensity to have an audit difference booked.

The auditor is more likely to accept uncorrected differences when confronted with a *higher number of individual (small) differences* that, in aggregate, result in a material misstatement of the financial statements compared with a *single, material* difference (Braun 2001). This seems interesting since, as far as the extent to which the financial statements are misstated and the consequences for the auditor's opinion are concerned, it makes no difference whether uncorrected differences are material individually or in aggregate. (ISA No. 450.11, No. 700.11(b)). Also, the auditor is also more likely to accept uncorrected differences if the underlying error is a *prior-period* error (Joe et al. 2008). This finding is confirmed by the experiment conducted by Hatfield et al. (2010).

### ***Other determinants***

Iceman and Hillison (1991) examined a possible relation between the *audit approach* and the auditor's decision to accept uncorrected differences. They found that audit firms with structured audit approaches are more likely to book a higher proportion of individual adjustments than less structured audit firms. Joe et al. (2008) examined the potential relation between the decision to book or waive and the factors *client's internal control system* and *audit tenure*. They found that a strong internal control system and longer audit tenure are both associated with a higher willingness

of the auditor to accept uncorrected differences. Ng and Tan (2003) examined the influence of the effectiveness of the *client's audit committee* and the *availability of authoritative guidance* on the auditor's decision. They found that both factors jointly influence the auditor's decisions.

Specifically, authoritative guidance has a greater effect in the absence of an effective audit committee than in its presence, while vice versa an audit committee influences this decision significantly only in the absence of authoritative guidance.

### **3. Audit Environment and hypotheses development**

#### ***Definitions and authoritative audit guidance***

An audit adjustment (audit difference) is defined as a misstatement, that is, a deviation from the applicable accounting standards or framework that is "not clearly trivial" from the auditor's point of view, detected in the course of the audit. The difference relates to the statement of financial position (balance sheet) and/or the statement of financial performance (income statement). The difference may be associated with an amount (measurement), the classification, and/or disclosure (Kinney 2000, 216 ff.). Consistent with prior studies, we define an audit adjustment in this narrow sense, meaning one that is limited to adjustments in the balance sheet and/or income statement.

This allows us to compare our results with previous findings and to investigate not only the number of adjustments, but also their magnitude in relation to audit materiality.

The International Standards on Auditing (ISA) do not use the term 'audit adjustment'. Instead, ISA 450.3 ff. uses the terms 'identified misstatements', 'uncorrected misstatements' and 'correction of misstatements'. In ISA 450.A3, audit adjustments are further distinguished into "objective", "subjective" (i.e., misstatements relating to transactions or events involving estimations,

assumptions, judgment and interpretation), and “projected” adjustments (i.e., projecting misstatements based on a representative sample, see ISA No. 530.14).<sup>7</sup>

A definition of an “audit adjustment” is contained in the auditing standard no. 3, par. 12.c. issued by the U.S. Public Company Accounting Oversight Board (PCAOB): “[A]n audit adjustment is a correction of a misstatement of the financial statements that was or should have been proposed by the auditor, whether or not recorded by management, that could, either individually or when aggregated with other misstatements, have a material effect on the company’s financial statements.” Further guidance on how to handle audit adjustments may be found in (U.S.) Practice Alert No. 94-1. Both qualitative and quantitative factors need to be considered when evaluating whether an audit adjustment (misstatement) is material or not (for similar guidance see ISA No. 450.A15 f.). For example, if a number of differences have influenced profit or loss in the same direction, this may indicate that client management is trying to meet earnings forecasts.

In accordance with ISA No. 700.10, the auditor confirms in their unqualified audit opinion that the financial statements comply, in all material aspects, with the applicable accounting standards. Paragraph 11(b) of this standard explicitly requires the auditor to consider, in reaching their conclusion, whether the uncorrected (waived) differences do not, individually or in aggregate, result in a material misstatement of the financial statements.

### ***Hypotheses development***

#### *Qualitative and quantitative materiality*

The concept of materiality is important throughout the audit process (ISA No. 320). A misstatement (or information) is material if there is a substantial likelihood that it will affect the

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<sup>7</sup> ISA No. 450.A3 distinguishes between “factual”, “judgmental” and “projected” misstatements.

economic decisions made by a “reasonable person” using the financial statements. Evaluating materiality requires both quantitative and qualitative factors to be considered. Empirical evidence indicates that qualitative factors may cause misstatements of quantitatively small amounts to be material (e.g., Libby and Kinney 2000; Ng and Tan 2007). Fernández-Laviada, Montoya del Corte and Martínez García (2009) show that auditors and preparers generally agree on the issuance of a qualified opinion due to uncorrected misstatements that are lower than the quantitative materiality levels if they relate to qualitative factors. Auditing standards also stress the importance of both the quantitative and the qualitative dimension of materiality: ISA No. 450.A16 and SEC Staff Accounting Bulletin No. 99 include a list of eleven qualitative materiality factors that auditors should consider when evaluating materiality of uncorrected adjustments that are below certain quantitative levels.

However, despite this authoritative guidance, there is no *operational* definition of materiality: The definition refers to the economic decision taken by a “reasonable user” (of the financial statements), and the likelihood of this piece of information influencing that decision. It is obvious that, in the light of this definition, setting a materiality threshold requires substantial judgment, and does so even more if qualitative factors need to be considered in addition to purely quantitative thresholds. As a result, different views are possible as to what constitutes a *material* (single) audit difference and which audit differences would, when considered in aggregate, cause the financial statements to be *materially* misstated. In the negotiation process between auditor and client, these different (and potentially conflicting) views on materiality will become highly relevant: If the auditor decides, in light of qualitative factors, to set audit materiality below the lowest common quantitative thresholds for a particular client, they in fact take a more conservative view on materiality, and one that is potentially not shared by the client. While the client will likely accept common quantitative thresholds, it may oppose materiality thresholds set lower for qualitative

factors which are, by nature, judgmental. The auditor might not be able to enforce their – more conservative – view in the negotiations with the client. This setting will generally result in relatively *fewer* differences being corrected. Thus, we formulate the following research hypothesis<sup>8</sup>:

*H1: If the auditor has reduced audit materiality for the financial statements as a whole (overall materiality) below the lowest common quantitative thresholds for a particular client (i.e., the auditor used an even lower materiality threshold for qualitative reasons), adjustments detected in the course of this audit are associated with a higher likelihood of being waived.*

In our particular sample, this constellation is even more likely: While the audit manual of the participating audit firm at that time explicitly required (and still requires) the engagement team to consider qualitative materiality factors, the applicable ISA in force at that time did not contain the extensive guidance that is now included.<sup>9</sup> The applicable authoritative audit standards in that year were less rigorous than the internal audit manual, strengthening the client's negotiating power and enabling it to more easily rebut the auditor's qualitative materiality threshold and decreasing the auditor's ability to adhere to their (internal) requirement.

In addition to and in accordance with the concept of materiality (ISA No. 320.2 ff.), it is likely that quantitative immaterial adjustments are generally less important for the economic decision of a "reasonable person" using the financial statements.

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<sup>8</sup> This hypothesis and all other hypotheses are expressed in the form of a statistical alternative hypothesis.

<sup>9</sup> In 2007, the ISAs lacked a list of qualitative factors to be considered, such as the comprehensive list included in the recent ISA 450.A17. Conversely, ISA 320.5 simply reminded the auditor that "both the amount (quantity) and nature (quality) of misstatements need to be considered", but provided no further definition or guidance (except for two examples, (a) an "inadequate or improper description of an accounting policy" that might be misleading and (b) "failure to disclose the breach of regulatory requirements" that might impair the reporting entity's operating capability).

*H2: An audit adjustment that is larger in relation to the materiality threshold set for the financial statements as a whole (overall materiality) is less likely to be waived.*

*Audit adjustment characteristics*

The auditor's ability to withstand client pressure in a conflict situation may depend on the subjectivity of the conflict issue. Deis and Giroux 1992 argue that auditors are relatively less able to withstand client pressure when the conflict issue is associated with room for interpretation and judgment. Additionally, the decision to waive a subjective adjustment can be more easily justified, which would be relevant in the event of litigation and/or a court case. Existing empirical studies provide evidence in this direction (e.g., Wright and Wright 1997, 19; Braun 2001, 79 f.; Nelson, Elliott and Tarpley 2002; Nelson, Smith and Palmrose 2005, 902). Thus, we formulate our hypothesis as:

*H3: An audit adjustment relating to a transaction or event is associated with a higher likelihood of being waived when the adjustment is subjective rather than objective in nature.*

An auditor is more likely to accept an adjustment if this adjustment was already accepted in the prior-year audit. This effect is due to the cognitive distortion well documented in auditing (e.g., Wright 1988; Joe et al. 2008, 14 f.): Auditors tend to adhere to past decisions ("anchoring").

*H4: An audit adjustment relating to a prior-period misstatement is associated with a higher likelihood of being waived.*

Investors and creditors are more likely to suffer losses and sue auditors when reported income is overstated than when it is understated (e.g., Carcello and Palmrose 1994); this may also cause reputation damage to the auditor. This leads to auditor conservatism because the auditor is more motivated to have adjustments corrected which are, in aggregate, income-decreasing (Wright and

Wright 1997; Braun 2001; Nelson, Elliott and Tarpley 2002; Nelson, Elliott and Tarpley 2003).

Auditor conservatism is well documented in the existing literature (e.g., Kinney and Martin 1994; Nelson, Smith and Palmrose 2005), leading to H5:

*H5: An audit adjustment has a lower likelihood of being waived if the sum of all corrected misstatements for the client in question is income-increasing (loss-decreasing).*

#### *Factors influencing inherent and control risk*

If the client's financial stability or profitability is weak or threatened, this fact increases inherent risk. First, it induces pressure on the client's management that may stimulate fraudulent reporting (ISA 240.Appendix 1). Second, if the economic position of the client worsens, investors and creditors may suffer losses and sue auditors, which may cause reputation damage to the auditor. Conversely, a weak economic position might also put the client's management under pressure to oppose any audit adjustment: In the negotiation process, the auditor might be less able to enforce the correction of identified audit adjustments due to stronger client resistance. It is not clear which effect is more influential. Thus, we formulate our research hypotheses without a certain direction as

*H6: The client's economic position will influence the likelihood of audit adjustments being corrected/waived.*

Another potential factor that may drive the auditor's decision to waive an audit adjustment is the existence of a management remuneration scheme that is based on financial statement figures.

Consistent with the audit risk model, the latter can be attributed to inherent risk, as it will increase the motivation for (legal) earnings management and (illegal) earnings manipulation, in other words fraud (see ISA 240.4, ISA 240.Appendix 1, ISA 315.A40, A72). As low inherent risk is generally

associated with a low audit risk, the auditor might be more willing to accept uncorrected differences, leading to

*H7: A management remuneration scheme tied to financial statement figures will result in a lower likelihood of audit adjustments being waived.*

Generally, empirical studies show that control risk factors appear to be related to the incidence of misstatements (Wallace and Kreutzfeldt 1995; Wright and Wright 1996; Eilifsen and Messier 2000, 19 ff.), and control risk factors are also related to the audit procedures applied by auditors and the detection of misstatements (Wright and Ashton 1989, 719 ff.). According to the logic of the audit risk model, lower control risks are, all other things being equal, associated with a lower audit risk. When internal controls are strong, it is reasonable to expect a lower level of undetected errors than when controls are weak (see also ISA No. 240.A42). Rationally, the auditor will thus be more inclined to accept uncorrected differences.

In line with a stronger focus on the client's business risks (see ISA No. 315.11 (d), ISA No. 330 or the proposed PCAOB standards on risk assessment and responses to risk; see also Knechel, Salterio and Kochetova-Kozloski (2010)), entity-level controls have become more important. Therefore, we analyze entity-level controls separately (see also International Auditing Practice Statement (IAPS) No. 1012.36).

In ISA No. 240.A64, the control environment includes the factor "integrity and competence of management", meaning the quality of the client's management. ISA No. 315.A106 notes that deficiencies such as management's lack of competence may have a pervasive effect on the financial statements. Conversely, if the quality of the client's management is high, this corresponds to a lower control risk. In previous studies, insufficient accounting knowledge has

been identified as a major cause of income-affecting misstatements (Entwistle and Lindsay 1994, 279 f.). This leads to the following hypotheses.

*H8: If the auditor rates the client's internal control system as strong, audit adjustments relating to this client have a higher likelihood of being waived.*

*H9: If the auditor rates the client's entity-level controls as strong (i.e., their existence and effectiveness), audit adjustments relating to this client have a higher likelihood of being waived.*

*H10: If the client has established an effective internal audit function, audit adjustments relating to this client have a higher likelihood of being waived.*

*H11: If the auditor rates the quality of the client's management (i.e., integrity and competence) as high, audit adjustments relating to this client have a higher likelihood of being waived.*

When the client chooses a hard close approach for preparing the financial statements, the statements are prepared (and audited) as of a reporting date *preceding* the actual reporting date (30 November is generally chosen for financial statements for a year ending 31 December). The remaining work is limited to transactions and events occurring in the timeframe in December. On the one hand, time pressure associated with preparing and auditing the financial statements is decreased, reducing inherent risk. On the other hand, the complexity in terms of reconciliations and control activities (and thus inherent and control risk) increases. However, one can expect that clients capable of handling a hard close will also tend to have a strong internal control system, so that the lower control risk associated with a strong internal control system may (over)compensate hard close-induced higher inherent risk. On average, overall audit risk is likely to be lower, resulting in the auditor (a) detecting fewer differences and (b) being more willing to accept waived audit adjustments.

*H12: If the client chooses a hard close approach for preparing the financial statements (and having them audited), audit adjustments associated with this client have a higher likelihood of being waived.*

#### *Audit opinion and audit tenure*

According to the audit standards, there is a variety of different forms of audit opinions. One can first distinguish between unqualified and modified opinions. Auditors express an unqualified opinion when they conclude that the financial statements are prepared, in all material respects, in accordance with the applicable financial reporting framework (ISA 700.16). The auditor may also add an “emphasis of matter” or an “other matter” paragraph to the unqualified opinion (ISA 706.4). In this way, the auditor can highlight (a) a matter so important that it is fundamental to users’ understanding of the financial statements (emphasis of matter paragraph) or (b) any other matter that is relevant to users’ understanding of the audit, the auditor’s responsibilities, or the auditor’s report (other matter paragraph). Including either type of additional paragraph does not mean that the auditor’s opinion is modified. According to ISA 705.2 ff., there are three forms of modified opinion, the qualified opinion, the adverse opinion, and the disclaimer of opinion.

The ability to modify the audit opinion is the strongest lever the auditor has in hand when negotiating with the client. However, if the auditor does modify the opinion, they have no leverage left in order to enforce the correction of detected audit adjustments, which might result in no or fewer adjustments being booked. Also, correcting more adjustments effectively decreases the likelihood of any *remaining* adjustments materially misstating the financial statements (causing the auditor to modify the opinion). In addition, the auditor is less exposed to reputation risk when expressing a modified opinion: Potential claimants cannot argue that they erroneously relied on the

(misstated) financial statements, as the auditor, by modifying the opinion, effectively signaled that the financial statements are materially misstated. This leads to

*H13: If the auditor expresses a modified opinion, audit adjustments relating to this client have a higher likelihood of being waived, whereas including an emphasis of matter or other matter paragraph to the unqualified opinion does not impact the likelihood of audit adjustments being waived.*

Another potential factor that may drive the auditor's decision to waive an audit adjustment is client tenure. Assuming that longer client tenure will allow the auditor to reach an acceptable low level of audit risk with a lower effort (e.g., the auditor can refrain from annually assessing the client's control system), and further assuming a constant level of audit fees, longer client tenure will result in economic rents. If the auditor is presumed to have an incentive to realize those rents, there is a certain motivation to "keep" a client, which might result in the auditor's increasing willingness to waive audit adjustments. Mixed evidence exists that client tenure is indeed associated with audit quality (see Vanstraelen 2000; Davis, Soo and Trompeter 2007, Knechel and Vanstraelen 2007 and for an overview Pott, Mock and Watrin 2009). Client tenure has also been previously found to have an impact on the auditor's decision to waive an audit adjustment in the study by Joe et al. (2008). We thus formulate our hypothesis as

*H14: A longer client tenure is associated with a higher likelihood of audit differences being waived.*

#### **4. Sample and research design**

##### ***Data collection***

Our sample was compiled by one of the Big 4 audit firms in Germany. In order to gather a sample representative of the audit firm's client portfolio, the population of all of the clients under audit in

the year 2007 was divided into a 3 x 3 matrix, one dimension being the firm's size (measured by the workload in hours needed to conduct the audit), the other dimension being the firm's sectoral coverage (industrial markets, consumer markets, and information, communication, and entertainment<sup>10</sup>). The audit client population (n = ca. 7,500 audits) in all sectors was attributed to the 3 x 3 = 9 clusters and a random sample of 45 client firms from each of the clusters was drawn, resulting in a total sample of 405 (9 clusters x 45 client firms). Overall, we expect our random sample to be a reasonably neutral and unimpaired representation of the audit client population.

The response gathered in the second half of 2008 (including a follow-up) amounted to 255 client firms (a response rate of 63.0 percent) with a total of 1,158 adjustments. Compared with other studies looking into the determinants of booked v. waived adjustments, this is the largest sample ever<sup>11</sup>, while compared with other field studies, it is the third-largest sample<sup>12</sup>. Since the response rate is relatively high, and missing responses could be attributed to reasons such as changes in the audit firm's client portfolio in almost all cases, there is no evidence to suggest a non-response bias. Also, the response rate was fairly identical over all nine clusters.

The data was gathered based on questionnaires completed under the supervision of the engagement leader by the engagement team. We were provided with anonymized data on each of the client firms drawn for the sample. While designing the questionnaire, we worked closely together with the audit firm in order to ensure that the questions were understandable, practical and well-suited for the study at hand. In addition, we conducted a pre-test.

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<sup>10</sup> The audit firm's overall audit client portfolio consisted mainly of those three sectors. Financial (banking) institutions and insurance institutions were omitted as they constituted only a small fraction of the audit firm's client portfolio.

<sup>11</sup> To our knowledge, the study by Joe et al. (2008) is the second-largest sample, comprising 458 adjustments.

<sup>12</sup> We are aware of only two studies that are based on an even larger sample: Kreutzfeldt and Wallace (1986), n=260 (firms) and Houghton and Fogarty (1991), n=480 (firms).

As mentioned before, the sample comprises audits carried out in Germany. Depending on whether the client is a publicly traded company (i.e., it has issued debt and/or equity instruments that are publicly traded) and is required to publish consolidated financial statements, the financial statements under audit are prepared either in accordance with International Financial Reporting Standards (IFRSs) or German GAAP. The audits are carried out in accordance with German audit standards. Notably, German audit standards are generally consistent with International Auditing Standards (ISAs and related statements).<sup>13</sup>

### ***Logistic regression***

Our dependent variable, *CORRECTED*, is a binary variable that can take either the value “1” (audit adjustment has been booked by the client) or “0” (audit adjustment has not been booked by the client, and the auditor waives the adjustment, i.e., accepts that the adjustment has not been booked). Since our response variable is binary, we use a logistic regression to test the association between the decision to waive the adjustment and the determinants mentioned above. In our regression model, we use the following independent variables:

*QUALITATIVE MATERIALITY*: A binary variable that takes the value “1” if the auditor set the overall audit materiality at a level at least 30 percent below the materiality that would result from a purely “quantitative” approach (“quantitative materiality”), based on the three quantitative thresholds commonly used by audit firms: total assets, sales revenue, and profit or loss. More specifically, “quantitative materiality” is calculated<sup>14</sup> as

*Quantitative Materiality* =  $\min \{ 0.5\% \cdot \text{total assets}; 0.5\% \cdot \text{sales revenue}; 10\% \cdot |\text{profit or loss}| \}$ .

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<sup>13</sup> See Köhler, Marten, Quick and Ruhnke 2007. Under the German Commercial Code, statutory audits are required to be performed in compliance with ISAs and related statements.

<sup>14</sup> If sales revenue and/or profit or loss was zero, that number was omitted when calculating the minimum, since otherwise the minimum would result in a – meaningless - materiality of zero. This “modified minimum” affected only nine clients.

This approach is also broadly consistent with the audit approach followed by the participating audit firm. It may lead to a very small quantitative materiality threshold if profit or loss is low. Thus, it can be considered a very conservative approach by itself. Since a “qualitatively determined materiality” is only coded if the overall materiality threshold was set even *lower* than this already conservative measure to a substantial extent (30 percent, *QUALITATIVE MATERIALITY*<sub>30</sub>), our approach may not capture all cases in which qualitative factors were important. It should however ensure that all cases *coded* as being associated with a “qualitatively-set materiality” actually *were* thus associated. In order to validate our results, we also estimate the parameter if the overall (qualitative) materiality was set 10 percent lower (*QUALITATIVE MATERIALITY*<sub>10</sub>), rather than 30 percent as described above.

*SIGNIFICANT*: A binary variable that takes the value “1” if the adjustment reaches or exceeds 30 percent of the materiality set for the financial statements as a whole (overall audit materiality) (“0” in other cases),

*SUBJECTIVE*: A binary variable that can take the value of either “0” (the adjustment is of an “objective” nature, such as a miscalculation), or “1” (the adjustment is subjective in nature and includes judgment and interpretation, for example determining a carrying amount based on assumptions and estimates),

*PRIOR-PERIOD*: A binary variable with the value of either “1” when the adjustment relates to a misstatement attributable to the financial statements of a prior period, or “0” (the adjustment is attributable to the present-period financial statements),

*OVERALL INCREASING*: A binary variable that takes the value “1” if the sum of all corrected adjustments associated with the client has decreased income (i.e., the misstatements underlying the corrected adjustments were, in aggregate, income-increasing),

*REMUNERATION*: A binary variable that can take the values “0” (no accounting-based remuneration scheme in place with that audit client) or “1” (scheme established by audit client),

*INTERNAL AUDIT*: A binary variable that takes the value “1” if the client has established an effective internal audit function (“0” in other cases),

*HARD CLOSE*: A binary variable that takes the value “1” if the client chooses a hard close approach for preparing the financial statements (and having them audited).

*AUDIT OPINION*: A categorical variable that can take the values 1 (unmodified opinion), 2 (unmodified opinion including an emphasis of matter or other matter paragraph), or 3 (modified opinion).<sup>15</sup>

The following three independent variables are treated as binary variables<sup>16</sup>:

*CLIENT’S ECONOMIC POSITION*: Can take either the value “0” (very weak/weak”) or “1” (healthy/very healthy), based on the auditor’s rating,

*QUALITY*: Can take the values “0” or “1”, based on the auditor’s rating of the client’s management quality (i.e., integrity and competence), whereby “0” denotes “very poor/poor” and “1” denotes “high/very high”,

*CLIENT TENURE*: Can take either the value “0” (firm has been audit client for 1–2 years) or “1” (3 years or more).

We continue to treat the following two independent variables as 3-level ordinal variables,<sup>17</sup> resulting in two parameters/odds for each of the variables (one for the difference between level 1 and 2, and one for the difference between level 2 and 3):

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<sup>15</sup> The different forms of audit opinion in a German audit are fully consistent with ISAs; see footnote no. 13.

<sup>16</sup> We combined the levels “healthy”/“very healthy”, “high”/“very high” and “3-5 years”/“6 years or more” (see descriptive statistic in table no. 3) into a single level: When estimating the parameters/odds for each variable individually, it appeared that the difference between these levels of the ordinal scale is not influential for these three variables, while the difference between “very weak/weak” and “healthy”, as well as “very poor/poor” and “high” was influential.

<sup>17</sup> Unlike the previous three variables *CLIENT’S ECONOMIC POSITION*, *QUALITY*, and *CLIENT TENURE* (see footnote no. 16), both the difference between levels 1 and 2 and between levels 2 and 3 was highly significant for these two variables (1% level) when estimating the parameters/odds for each variable individually, suggesting that these variables should be treated as a 3-level ordinal.

*INTERNAL CONTROL SYSTEM*: Can take the values “1” to “3”, based on the auditor’s rating of the client’s internal control system, whereby “1” denotes “very poor/poor”, “2” denotes “strong”, and “3” denotes “very strong”,

*ENTITY-LEVEL CONTROLS*: Can take the values “1” to “3”, based on the auditor’s rating of the client’s entity-level controls (i.e., their existence and effectiveness), whereby “1” denotes “very poor/poor”, “2” denotes “strong”, and “3” denotes “very strong”.

We estimate three different logistic regression models, model 1 being

$$\begin{aligned} CORRECTED = & \beta_1 \cdot QUALITATIVE MATERIALITY_{30} + \beta_2 \cdot SIGNIFICANT + \beta_3 \cdot SUBJECTIVE + \\ & \beta_4 \cdot PRIOR-PERIOD + \beta_5 \cdot OVERALL INCREASING + \beta_6 \cdot CLIENT'S ECONOMIC POSITION + \\ & \beta_7 \cdot REMUNERATION + \beta_8 \cdot INTERNAL CONTROL SYSTEM + \beta_9 \cdot ENTITY-LEVEL CONTROLS + \\ & \beta_{10} \cdot INTERNAL AUDIT + \beta_{11} \cdot QUALITY + \beta_{12} \cdot HARD CLOSE + \beta_{13} \cdot OPINION + \beta_{14} \cdot CLIENT TENURE + \\ & \beta_{15} \cdot HARD CLOSE \cdot INTERNAL CONTROL SYSTEM + \varepsilon. \end{aligned}$$

As our hypothesis for the *HARD CLOSE* variable is based on interdependency with the strength of the *INTERNAL CONTROL SYSTEM*, we also include a multiplicative term in our model to analyze potential moderation between these two variables.

Model 2 excludes two variables that do not appear to have an impact on the auditor’s decision to waive an audit adjustment, *CLIENT TENURE* and *REMUNERATION*. Estimating a second regression model excluding those two variables is necessary, since we employ an additional goodness-of-fit test of our model, which would not produce meaningful results when including independent variables that have not proved to have a significant influence on the dependent variable. Model 3 is identical to model 2, except that *QUALITATIVE MATERIALITY<sub>10</sub>* is used instead of *QUALITATIVE MATERIALITY<sub>30</sub>*.

## 5. Results and interpretation

### ***Descriptive statistics***

Tables No. 1–3 provide some descriptive data on the sample. Table No. 1 contains some general information on the client firms included in our sample.

[insert Table No. 1 here]

[insert Table No. 2 here]

Overall there are 1,158 audit differences related to the financial statements of 255 firms. Table No. 2 depicts the number and mean size of corrected and uncorrected adjustments, each in relation to materiality by the number of *adjustments per client*. Generally, the mean size of corrected adjustments exceeds the mean size of uncorrected (waived) adjustments, indicating that the significance of the individual adjustments relative to audit materiality is likely to influence the decision whether a specific adjustment is corrected or not. The number and mean size of the adjustments significantly increase once the total number of adjustments per audit client exceeds a certain threshold (10 or more adjustments per client). Notably, the mean size of corrected adjustments generally exceeds the mean size of uncorrected (waived) adjustments.

[insert Table No. 3 here]

Table No. 3 focuses on the *individual adjustments* and gives the number and mean size of total, corrected, and uncorrected adjustments (in relation to materiality) subclassified by the characteristics of the adjustment, a “qualitatively” set materiality, and client, audit opinion, and financial statement characteristics, that is, the characteristics measured by the independent variables.

### ***Regression model***

#### *R<sup>2</sup>, goodness-of-fit, multicollinearity and parameter estimates*

Our regression model 2 (excluding the two independent variables that do not have a significant effect on the dependent variable) achieves a  $-2 \log(L)$  -value of 940.4 (intercept and independent variables) versus a  $-2 \log(L)$  -value of 1,578.5 (intercept only), resulting in a rescaled  $R^2$  (calculated according to Nagelkerke (1991)) of 0.57. Obviously, our model explains the majority of the variance associated with the decision to book or waive very well. In addition, we employ a goodness-of-fit test according to Hosmer and Lemeshow (1989, 140 ff.), the result being 0.45. The parameter estimates for the independent variables (odd ratios) in model 2 are shown in Table No. 4.

[insert Table No. 4 here]

With regard to potential multicollinearity between the independent variables, one would expect some dependencies between the overall rating of the internal control system and its components (existence and effectiveness of high-level controls, internal audit function) as well as the quality of the client's management, which is also a factor influencing control risk. In order to control for multicollinearity, we calculate the variance inflation factors for the independent variables (reproduced in Table No. 4). As expected, the variance inflation factors for those four variables are slightly higher than the variance inflation factors for all the other variables, which do not indicate any multicollinearity. Whereas the variance inflation factor for the *QUALITY* variable is only slightly higher (1.38), the factors for the *INTERNAL CONTROL SYSTEM* (2.03), *ENTITY-LEVEL CONTROLS* (1.96), and *INTERNAL AUDIT* (1.62) variables are substantially higher. However, the factors are far from thresholds commonly perceived as being associated with serious multicollinearity (Hocking 1996, 274 f.; Menard 1995, 66; Neter, Wasserman and Kutner 1990, 409; O'Brian 2007).

### ***Materiality***

If the auditor has set audit materiality substantially lower than the most conservative “quantitative materiality” thresholds based on commonly used quantitative figures (total assets, sales revenue, profit or loss), this significantly influences their willingness to accept (waive) adjustments not corrected by the client. In particular, consistent with our hypothesis (H1), if the auditor chooses a lower (at least 30 percent) overall audit materiality for other, qualitative reasons, they are more likely to waive adjustments. The likelihood of a correction is only 1:0.52 (*QUALITATIVE MATERIALITY*<sub>30</sub>, significant at the 5 percent level). In our alternative regression model 3, when looking at an overall materiality that is only 10 percent lower (*QUALITATIVE MATERIALITY*<sub>10</sub>), the effect is less strong (odd ratio 1:0.652, significant at the 10 percent level). This is also consistent with our hypothesis, as a 10 percent “discount” for qualitative factors, although still putting the auditor at a disadvantage in the negotiations with the client, means that the diverging views on the “acceptable” materiality threshold between client and auditor should be less pronounced.<sup>18</sup>

If an audit adjustment is individually “significant”, meaning that the individual audit adjustment amounts to at least 30 percent of the audit materiality, the likelihood of being booked is three times as large (significant at 1 percent level) than if the individual adjustment is smaller, relative to audit materiality, as expected (H2).

### ***Audit adjustment characteristics***

The independent variables relating to the characteristics of the audit adjustment are consistent with our hypotheses (H3–H5). Audit adjustments involving estimations (i.e., judgment and

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<sup>18</sup> In model 3, the other parameter estimates and *p* levels are similar to model 2. Therefore, the individual parameters of the other variables are not reported here.

interpretation) have odd ratios below zero. More precisely, subjective audit adjustments have a 1:0.64 likelihood of being corrected, and adjustments rooted in prior periods have only a 1:0.25 likelihood of being corrected. Both parameters are significant at the 5 percent level.

When looking at the income direction of the aggregate corrected adjustments related to a particular client, an adjustment is almost 16 times as likely to be corrected if the overall direction of the corrected adjustments is income-decreasing (i.e., the underlying misstatement has increased profit or loss, significant at the 1 percent level). This finding constitutes strong evidence for auditor conservatism.

#### ***Factors influencing inherent and control risk***

The independent variables related to inherent and control risk, error risk, the audit client's characteristics, and the approach to preparing the financial statements (i.e., hard close) are consistent with our hypotheses (H6–H12), with the exception of H7 on an accounting-based remuneration scheme.

The client's economic position (H6) does appear to significantly (1 percent level) influence the booked/waived decision. More specifically, a healthier economic position almost doubles the likelihood of adjustments being corrected as compared to a weak position. This might be explained by the client exercising more resistance against proposed adjustments while being under pressure itself. Surprisingly, a remuneration scheme based on accounting figures does not appear to have an impact on the auditor's decision to waive an adjustment (H7).

All factors associated with control risk influence the decision to book or waive in the expected direction: The stronger the high-level controls (H9) are, the lower the likelihood is of adjustments

being waived. This effect is highly significant (1 percent level) across the full 3-level scale: If controls are weak or very weak (rather than strong), the likelihood of adjustments being waived is over nine times as high. If controls are very strong, this further lowers the likelihood (1: 0.4). Similarly, an effective internal audit function (H10) lowers the likelihood of adjustments being waived (1:0.6, significant at the 1 percent level). If the quality of the client's management (integrity and competence) (H11) is rated as high or very high by the auditor, this lowers control risk and substantially lowers (1:0.13) the likelihood of adjustments being corrected (significant at the 1 percent level).

The strength of the internal control system in general appears to have a relatively minor effect (H8). The difference between a control system that is weak and one that is strong does not seem to influence the decision very much, as the odd ratio is close to one. However, when the internal control system is very strong, this lowers the likelihood of adjustments being corrected (1:0.41). As expected, choosing a hard close approach for preparing the financial statements does not influence the decision to book or waive in general (H12). Rather, as expected, the internal control system moderates this impact: Since a hard close approach is much more complex, inherent risk is also substantially higher. A strong internal control system can compensate for this increased risk, and, indeed, we do not find evidence that a hard close approach influences the decision to book or waive in this scenario. However, if the internal control system is weak, the inherent risk will cause the auditor to insist on more adjustments being corrected. The effect is both very strong (odd ratio of 1:26) and highly significant at the 1 percent level.

#### ***Audit opinion and audit tenure***

As expected, an emphasis of matter or other matter paragraph, since it does not modify the auditor's opinion, has no apparent effect on the decision to book or waive audit adjustments (H13).

However, if the auditor's opinion is modified, the likelihood of adjustments being corrected is seven times as *high* as when the opinion is unqualified. The effect is highly significant at the 1 percent level. While influencing the book/waive decision, the direction of the effect is inverse to our expectation (and our explanatory approach for this direction). Also, we could not confirm our hypothesis on client tenure (H14). Client tenure does not appear to influence the auditor's decision to waive audit adjustments.

### ***Limitations***

Our study is subject to a number of limitations. First, we did not examine *all* factors that (might) influence inherent and control risk. We also did not examine all factors that might reasonably influence the auditor's decision whether to book or to waive an adjustment. For example, client pressure and the auditor's negotiation strategy are factors that are likely to influence that decision (see potential for future research set out in section 6). These factors will certainly have influenced our sample data, but we were not able to control for them.

Second, some of our variables might be affected by measurement error, since the factor is rated by the auditors themselves. Measurement error might apply to the quality of the client's management, entity-level controls (in terms of their effectiveness, if not their existence), the overall rating of the internal control system, and the client's economic position. For example, auditors may have been generally reluctant to rate their client's management quality, entity-level controls, or internal control system as "very poor". It might also be possible that the auditor's rating was influenced by the differences detected, for example, the internal control system might have been rated as overall "poor" *because* the auditor detected a high number of differences or differences of high sizes. However, some of the auditor's evaluations can be substantiated: When comparing the auditor's

rating of the client's economic position with two important<sup>19</sup> ratios associated with financial position (current debt ratio<sup>20</sup>) and performance<sup>21</sup>, it appears that the auditor's rating is consistent with these two indicators (see table no. 5): Higher performance ratios correlate with a better client position, and clients whose position was rated as "very weak/weak" evidence higher current debt ratios (and lower equity and noncurrent debt ratios which, if higher, would imply a more stable financial position).

[insert Table No. 5 here]

Third, we examined data from only one Big 4 audit firm in Germany. The fact that the audit approaches of the Big 4 firms are globally comparable to a large degree (Lemon, Tatum and Turley 2000; Ballou, Earley and Rich 2004, 83 f.; Knechel 2007, 393 ff.), suggests that our results should be representative for other Big 4 audits. Nevertheless, care must be exercised when extending our findings to other Big 4 accounting firms across the world. In addition, we do not know whether our findings extend to non-Big 4 firms, especially those that operate only in one country, as evidence exists that smaller audit firms' audit approaches are somewhat different (see Blokdijs, Driehuisen, Simunic and Stein 2006). The evidence on whether the audit quality of the audit firm varies with the size of the audit firm is mixed.<sup>22</sup> In addition, there is evidence that the industry sector-specific expertise of the engagement influences the audit quality (Owhoso,

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<sup>19</sup> For example, Moody's Corp. developed RiskCalc, a model to calculate probabilities of default of individual companies. There are country-specific models and, in the Germany-specific version of RiskCalc, similar ratios account for 63% of the total score for an individual company. See Kocagil, Glormann and Escott 2001, 18.

<sup>20</sup> Debt with a remaining maturity of one year or less (= current debt), divided by total assets.

<sup>21</sup> Earnings before interest, taxes, and depreciation, divided by total assets.

<sup>22</sup> Prior studies using different concepts for measuring audit quality (e.g. accruals, cost of capital) provide mixed evidence whether there is a relation between audit quality and audit firm size; see for example Petroni and Beasley 1996; Becker, DeFond, Jiambalvo and Subramanyam 1998; Francis/Krishnan 1999, 143 ff.; Francis, Maydew and Sparks 1999, 19 ff.; Azizkhani, Monroe and Shailer 2010. Also, there is evidence that smaller audit firms are *perceived* to be less resistant towards client pressure when deciding which adjustments to book or to waive (Lindsay 1992).

Messier and Lynch 2002; Hammersley 2006).

## **6. Summary and conclusions**

Based on a large sample of 255 firms with a total of 1,158 audit differences we analyze which parameters determine the auditor's decision to book or waive an audit adjustment. Although there are already a number of studies analyzing the determinants of that decision, our study contributes to the literature in a number of ways. First, in achieving an  $R^2$  of 0.57, our model can explain the majority of the variance associated with the auditor's decision very well. Second, since previous studies are all based on a sample of firms where financial statements and audits are prepared and carried out in a U.S. environment, the question of whether previous findings can be extended to other accounting standards and ISAs is an interesting one. Also, earlier findings may not hold today due to the huge changes in the audit environment during the past few decades. Indeed, we find that only some factors previously found to have an impact on the auditor's decision still do so today, while other factors do not appear to be influential any longer: As in prior studies, we found the nature of the adjustment (prior-period difference, subjective difference) to be associated with a lower likelihood of being corrected. We also found strong evidence of auditor conservatism, as the auditor is much more likely to correct income-increasing differences (by having income-decreasing adjustments booked). Our findings are consistent with those of Braun (2001): Individual differences with higher amounts are more likely to be booked than a higher number of differences with smaller amounts. Similar to Joe et al. (2008), we find that a very strong internal control system is associated with a higher likelihood of adjustments being waived.

There are also a number of new findings and findings that contradict prior evidence: In terms of contradicting findings, we cannot establish that client tenure has an impact on the auditor's decision (unlike Joe et al. 2008). Client tenure might thus be an interesting subject for future

studies. Our contradicting finding has important implications for standard-setting, as our findings would not justify a requirement for mandatory auditor rotation (or tightening existing requirements).<sup>23</sup>

Our study also provides a number of new findings that contribute to the literature and policymaking: First, we provide initial evidence that qualitative materiality considerations not only influence the auditor's audit approach, but also their decision on how to handle audit adjustments: Qualitative materiality considerations are associated with a lower likelihood of audit adjustments being booked, suggesting that the qualitative materiality considerations might not be generally enforceable in the negotiations with the client. This suggests strengthening and highlighting qualitative materiality considerations in both the audit and accounting standards, and effectively communicating these requirements to the client. It also confirms the requirements in ISA 540.

Second, we provide evidence that other factors affecting control risk, such as high level controls (a factor that captures an important component of the internal control system), an internal audit function, and the quality of the client's management, all influence the decision to book or waive in the direction suggested by the audit risk model.

Third, we found modifying the audit opinion to be associated with a *higher* likelihood of adjustments being corrected. The impact of this factor and its direction might be explained by a signaling effect overlaying the auditor/client negotiations: In issuing a modified opinion, the auditor provides the users of the financial statements with a strong negative signal. For the client, it might make no difference whether or not adjustments are booked or waived, as that signal

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<sup>23</sup> See for example, IFAC Code of Ethics, Sec. 290.151, and German Commercial Code, sections 319 and 319a.

overlays any considerations of the client and the respective client/auditor negotiation process. Our finding certainly indicates a need for further research.

Fourth, we provide initial evidence that a hard close approach to prepare the financial statements is a factor that *may* substantially influence the book/waive decision. The impact of this approach seems to be moderated by the strength of the internal control system: Since a hard close approach and its associated high complexity increases control risk, the auditor appears to react to this increased risk by insisting on adjustments being corrected. The likelihood of a correction is almost 26 times higher if the internal control system is poor, and the effect is highly significant. However, if the increase in inherent risk induced by the hard close approach is compensated by a strong internal control system, a hard close approach has no effect. Equally, though, the negotiation process between client and auditor might also evidence different characteristics that could explain a different willingness of the auditor to waive adjustments in a hard close-type engagement. The particularities of the negotiation process associated with this kind of engagement might also be an interesting subject for future research. Also, this finding suggests that a hard close approach and its interaction with the internal control system should probably be given greater prominence in the auditing standards as factors influencing error risk.

Since our study is based on archival data, a fruitful area of future interest might be those factors that cannot be examined based on archival data, but which might nevertheless influence the auditor's decision to book or to waive. In particular, the personality traits of the engagement team, leader, or partner might be interesting. The locus-of-control concept could be an operational way to capture personality traits. For example, Tsui and Gul (1996) found that the association between the auditor's locus of control and their response to clients' requests in an audit conflict situation is also influenced by ethical reasoning.

Another area that has previously not been examined is the influence of whether materiality is evaluated using the rollover or iron curtain approach: ISA No. 450.A18 seems to allow both approaches, but requires one approach to be applied consistently. Conversely, SEC Staff Accounting Bulletin No. 108 and Proposed FASB Staff Position No. FAS 154 take the view that a misstatement has to be booked if it is material *either* according to the rollover *or* the iron curtain approach. As the iron curtain approach considers the carry-over effects of differences rooted in prior-period financial statements, this approach might reduce the auditor's willingness to waive prior-period differences.

Fundamental to the auditor's decision to book or waive is the negotiation process preceding the (final) audit opinion, a process with strategic implications for both auditor and client (see e.g., Hatfield et al. 2010). A better understanding of this negotiation process might also be helpful in better modeling the auditor's decision. Some evidence pointing in this direction already exists. For example, Ng and Tan (2003) in their experiment found evidence that different negotiation strategies of the *audit client* do influence the auditor's decision to book or waive. The study by Trotman, Wright and Wright (2005), focusing on the negotiating tactics of the auditor, shows that audit partners take more conservative decisions about the correction of audit differences than managers and other senior staff. However, it appears to be the individual's position within the audit firm's hierarchy (i.e., status) and not the level of personal experience that is decisive.

Cultural factors and the expertise of the engagement team might impact the auditor's decision to book or waive audit differences. Evidence exists that both factors influence the auditor's ability to *detect* audit differences (see e.g., Bedard and Wright 1994; Chan, Lin and Mo 2003; Owoso, Messier and Lynch 2002; Hammersley 2006). Since factors that influence the ability to detect

audit differences are likely to have an impact on the decision to book or waive these differences, both factors might be interesting areas of future research. For example, in countries with a higher tolerance for uncertainty (Cowperthwaite 2010), the auditor might be more likely to waive adjustments relating to subjective misstatements.

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## Tables

**TABLE 1**

Engagement characteristics (values in T€)

	minimum	25%-quantile	mean	median	75%-quantile	maximum	standard deviation
Total assets	977	21,037	1,077,351	74,522	432,791	38,074,000	3,716,736
Current debt <sup>a</sup>	0	6,776	359,423	26,627	132,060	15,886,000	1,325,373
Revenue <sup>b</sup>	0	18,831	921,343	91,608	462,771	51,723,000	3,793,819
EBITD <sup>c</sup>	-131,168	1,319	150,868	6,918	51,765	6,186,978	562,268
Profit or loss	-468,000	106	72,973	2,986	23,269	2,953,094	297,506

<sup>a</sup> Debt with a remaining maturity of one year or less.

<sup>b</sup> Revenue is defined in German GAAP as the gross inflow of economic benefits during the period arising from providing goods or services in the ordinary course of business. A financial holding company will thus not report any revenue, since it does not provide any goods or services on its own. Rather, it will report proceeds from its subsidiaries as financial income. In our sample, this affects 14 clients. If those 14 clients are eliminated, the minimum revenue in the sample is 117 T€.

<sup>c</sup> Earnings before interest, taxes, depreciation of non-current assets.

**TABLE 2**

Number and mean size of corrected and uncorrected adjustments (in relation to materiality) by number of adjustments per client

		Mean size of corrected adjustments / uncorrected (waived) adjustments in relation to overall audit materiality <sup>a</sup>			
Number of adjustments per client	n	All adjustments	Adjustments affecting profit or loss		
			Offset <sup>b</sup>	Adjustments that, when booked, increase profit or loss (i.e., underlying misstatement decreased profit or loss) <sup>b</sup>	Adjustments that, when booked, decrease profit or loss (i.e., underlying misstatement increased profit or loss) <sup>b</sup>
	255	6.71 / 1.37	1.66 / 0.23	1.52 / 0.40	2.27 / 0.46
0	78	--	--	--	--
> 0	177	9.67 / 1.99	2.40 / 0.33	2.19 / 0.57	3.27 / 0.67
1	36	0.16 / 0.26	0.11 / 0.16	0.01 / 0.18	0.10 / 0.13
2–3	45	4.40 / 1.16	3.09 / 0.52	1.00 / 0.29	3.08 / 0.61
4–6	42	3.79 / 0.75	0.98 / 0.33	1.03 / 0.30	1.08 / 0.45
7–9	20	4.65 / 1.61	2.02 / 0.30	1.27 / 0.61	2.36 / 0.55
10–14	16	19.65 / 5.38	2.40 / 0.31	0.74 / 2.25	3.10 / 2.27
15+	18	52.31 / 7.86	8.95 / 0.22	14.49 / 1.19	16.43 / 1.14

<sup>a</sup> Mean of absolute size of adjustment, divided by client-specific overall audit materiality.

<sup>b</sup> The “offset” column was calculated as follows: For each client/audit, the income-increasing and income-decreasing adjustments (for corrected and uncorrected adjustments respectively) were summed and the resulting absolute amount was divided by the client/audit-specific materiality. The results for the individual clients/audits were then summed and divided by the number of clients/audits. The “income-increasing” (only the income-increasing adjustments were summed) and “income-decreasing” (only the income-decreasing adjustments were summed) columns were calculated in the same way. This method, however, does not allow for the “offset” income-affecting adjustments to be calculated based on the income-increasing and income-decreasing adjustments in the other columns in the table.

**TABLE 3**

Number and mean size of total, corrected, and uncorrected adjustments (in relation to materiality) by adjustment, materiality, client, or financial statement characteristic

Adjustment, materiality, client, or financial statement characteristic (total number of observations = 1,158)		Total (corrected and uncorrected) adjustments		Corrected adjustments		Uncorrected (waived) adjustments	
		Number	Mean size in relation to audit materiality <sup>a</sup>	Number	Mean size in relation to audit materiality <sup>a</sup>	Number	Mean size in relation to audit materiality <sup>a</sup>
Qualitative materiality threshold <sup>b</sup> ( <i>QUALITATIVE MATERIALITY</i> <sub>30</sub> )	+	88	7.93	58	10.68	30	2.61
	-	1,070	1.32	609	1.87	461	0.59
Qualitative materiality threshold <sup>c</sup> ( <i>QUALITATIVE MATERIALITY</i> <sub>10</sub> )	+	169	4.38	79	8.00	90	1.21
	-	989	1.38	588	1.92	401	0.60
Individually significant adjustment <sup>d</sup> ( <i>SIGNIFICANT</i> )	+	467	4.34	341	5.05	126	2.46
	-	691	0.11	326	0.11	365	0.11
Subjective adjustment ( <i>SUBJECTIVE</i> )	+	173	1.80	80	3.39	93	0.44
	-	985	1.82	587	2.53	398	0.77
Adjustment rooted in prior period ( <i>PRIOR-PERIOD</i> )	+	20	0.47	6	0.97	14	0.26
	-	1,138	1.84	661	2.65	477	0.72
Corrected adjustments for this client do, in aggregate, decrease income ( <i>OVERALL INCREASING</i> ) <sup>e</sup>	+	526	2.40	450	2.61	76	1.14
	-	632	1.33	217	2.68	415	0.63
Client (financial and overall economical) position, --/- (very weak/weak), + (healthy), ++ (very healthy) ( <i>CLIENT'S ECONOMIC POSITION</i> )	--/-	328	2.29	231	2.57	97	1.63
	+	433	1.46	232	2.49	201	0.27
	++	397	1.82	204	2.87	193	0.72
Accounting-based remuneration scheme ( <i>REMUNERATION</i> )	+	470	1.37	212	2.66	258	0.31
	-	688	2.13	455	2.62	233	1.15
Internal control system, --/- (very poor/poor), + (strong), ++ (very strong) ( <i>INTERNAL CONTROL SYSTEM</i> )	--/-	355	2.17	287	2.17	68	2.18
	+	591	2.00	297	3.47	294	0.51
	++	212	0.73	83	1.25	129	0.40
Entity-level controls, --/- (very poor/poor), + strong), ++ (very strong) ( <i>ENTITY-LEVEL CONTROLS</i> )	--/-	363	3.01	308	3.08	55	2.61
	+	576	1.51	286	2.49	290	0.55
	++	219	0.66	73	1.34	146	0.32
Internal audit function ( <i>INTERNAL AUDIT</i> )	+	445	0.74	175	1.49	270	0.26
	-	713	2.49	492	3.04	221	1.27
Quality of client's management (integrity and competence), --/- (very low/low), + (high), ++ (very high) ( <i>QUALITY</i> )	--/-	89	3.82	82	4.14	7	0.12
	+	591	2.10	314	3.05	277	1.02
	++	478	1.10	271	1.70	207	0.32
Hard close ( <i>HARD CLOSE</i> )	+	164	1.46	53	3.77	111	0.36
	-	994	1.88	614	2.54	380	0.81
Opinion, 1 (unqualified without emphasis of matter or other matter paragraph), 2 (unqualified incl. emphasis of matter or other matter paragraph), 3 (modified) ( <i>OPINION</i> )	1	1,013	1.76	579	2.73	434	0.76
	2	104	2.91	55	2.96	49	2.85
	3	41	0.49	33	0.35	8	1.09
Client tenure (in years) ( <i>CLIENT TENURE</i> )	1-2	69	1.36	36	2.34	33	0.29
	3-5	403	1.02	223	1.61	180	0.30
	> 6	686	2.33	408	3.22	278	1.03

- <sup>a</sup> Mean of absolute size of adjustment, divided by client-specific overall audit materiality.
- <sup>b</sup> The Auditor set the overall audit materiality at a level which was at least 30 % lower than a purely quantitative materiality, calculated as  $\min$   
{ 0.5% \* total assets; 0.5% \* sales revenue; 10% \* | profit or loss | }.
- <sup>c</sup> The Auditor set the overall audit materiality at a level which was at least 30 % lower than a purely quantitative materiality, calculated as  $\min$   
{ 0.5% \* total assets; 0.5% \* sales revenue; 10% \* | profit or loss | }.
- <sup>d</sup> Individual adjustment reaches or exceeds 30 % of the materiality set for the financial statements as a whole (overall audit materiality).
- <sup>e</sup> Implies that the misstatements underlying the corrected adjustments for this client have, in aggregate, increased income.

**TABLE 4:**

Parameter estimates (odd ratios), standard errors, and variance inflation factors for independent variables

Independent variable	Odd ratio estimate <sup>a</sup>	Standard error	p-value	Variance inflation factor
<i>QUALITATIVE MATERIALITY</i> <sub>30</sub>	0.521**	0.3312	0.0490	1.1029
<i>SIGNIFICANT</i>	3.115***	0.1798	<0.0001	1.0854
<i>SUBJECTIVE</i>	0.640**	0.2268	0.0495	1.0179
<i>PRIOR-PERIOD</i>	0.249**	0.6621	0.0355	1.0398
<i>OVERALL INCREASING</i>	15.981***	0.1946	<0.0001	1.1239
<i>CLIENT'S ECONOMIC POSITION</i>	1.968***	0.2520	0.0072	1.5519
<i>REMUNERATION</i>			0.9853	
<i>ICS</i> (strong > poor, hard close=constant)	0.939**	0.3353	0.0497	2.0261
<i>ICS</i> (strong > very strong, hard close=constant)	0.407**	0.3301	0.0136	
<i>ENTITY-LEVEL</i> (strong > poor / very poor)	9.307***	0.3393	<0.0001	1.9607
<i>ENTITY-LEVEL</i> (strong > very strong)	0.433***	0.3102	0.0069	
<i>INTERNAL AUDIT</i>	0.586***	0.1977	0.0069	1.6207
<i>QUALITY</i>	0.133***	0.5044	<0.0001	1.3823
<i>HARD CLOSE</i> (Internal control system = poor / very poor)	25.931***	1.1866	<0.0001	1.1143
<i>HARD CLOSE</i> (Internal control system = strong / very strong)			0.2813	
<i>OPINION</i> (unqualified without emphasis of matter or other matter paragraph > modified)	7.24***	0.3706	<0.001	1.1480
<i>OPINION</i> (unqualified without emphasis of matter or other matter paragraph > unqualified incl. emphasis of matter or other matter paragraph)			0.6499	
<i>TENURE</i>			0.2244	

\* = significant at the 10% level, \*\* = significant at the 5% level, \*\*\* = significant at the 1% level

adjusted  $R^2 = 0.57$

<sup>a</sup> Ratio of the odds of an adjustment being corrected to the odds of the adjustment being waived.

The variables are defined as follows:

*QUALITATIVE MATERIALITY*: The Auditor set the overall audit materiality at a level which was at least 30 % lower than a purely quantitative materiality, calculated as  $\min \{ 0.5\% * \text{total assets}; 0.5\% * \text{sales revenue}; 10\% * |\text{profit or loss}| \}$ .

*SIGNIFICANT*: Individual adjustment reaches or exceeds 30 % of the materiality set for the financial statements as a whole (overall audit materiality).

*SUBJECTIVE*: The adjustment is subjective in nature (i.e. it includes judgment and interpretation), rather than objective.

*PRIOR-PERIOD*: The adjustment relates to a misstatement attributable to the financial statements of a prior period.

*OVERALL INCREASING*: The sum of all corrected adjustments associated with the client has decreased income (i.e., the misstatements underlying the corrected adjustments were, in aggregate, income-increasing).

*REMUNERATION*: An accounting-based remuneration scheme established by the audit client.

*INTERNAL AUDIT*: The client has established an effective internal audit function.

*HARD CLOSE*: The client chooses a hard close approach for preparing the financial statements (and having them audited), assuming the variable *INTERNAL CONTROL SYSTEM (ICS)* is held constant.

*AUDIT OPINION*: 1 (unmodified opinion), 2 (unmodified opinion including an emphasis of matter or other matter paragraph), 3 (modified opinion).

*CLIENT'S ECONOMIC POSITION*: Based on the auditor's rating; "very weak/weak" or "healthy/very healthy".

*QUALITY*: The client's management quality (i.e., integrity and competence), as rated by the auditor; "very poor/poor" or "high/very high".

*CLIENT TENURE*: Number of years the client has been audited by this audit firm, "0" (firm has been audit client for 1–2 years) or "1" (3 years or more).

*INTERNAL CONTROL SYSTEM (ICS)*: Strength of the client's internal control system, as rated by the auditor; "very poor/poor", "strong", or "very strong", assuming the variable *HARD CLOSE* is held constant.

*ENTITY-LEVEL CONTROLS*: Existence and effectiveness of the client's entity-level controls, as rated by the auditor; "very poor/poor", "strong", or "very strong".

**TABLE 5**

Auditor's rating of the client's economic position compared with financial position ratio and performance indicator

<b>Client's economic position</b> <small>(as rated by the auditor)</small>	<b>Number of clients</b>	<b>current debt ratio<sup>a</sup></b>		<b>return on total assets<sup>b</sup></b>	
		<b>mean</b>	<b>median</b>	<b>mean</b>	<b>median</b>
<i>very weak/weak</i>	51	0.521	0.535	0.005	0.028
<i>Healthy</i>	89	0.412	0.375	0.160	0.097
<i>very healthy</i>	116	0.424	0.406	0.236	0.164

<sup>a</sup> Debt with a remaining maturity of one year or less (= current debt), divided by total assets.

<sup>b</sup> Earnings before interest, taxes, and depreciation, divided by total assets.

## **Appendix: Research/survey instrument**

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## A Study on Audit Differences

Dear participant,

*The recent accounting related scandals caused heavy criticism of the auditor and the audit profession by the general public. The reputation has been substantially damaged over the last decades. However, audits are very useful: For example, a number of empirical studies in the USA provide evidence that the corrections prompted by the auditor (audit differences) amount to a substantial extent, and these audit adjustments reflect only part of the usefulness of audits.*

*However, it is obvious that to a large extent the public is not aware of this usefulness. This scientific study is focusing on this problem by collecting data on audit differences (i.e. any differences that are not clearly trivial), as well as other relevant information. The study is designed as follows: For each audit (client), the master data sheet needs to be completed. In addition, for each audit difference, we kindly ask you to include further information in the excel-based summary of audit differences (SAD-sheet) attached. The data are collected anonymously; due to the large number of audits examined in this study, there is also no possibility to track back any information to an individual client/audit.*

*In participating in this study, you will support audit research in Germany. You will also contribute to raising the public's knowledge of the work of an auditor and the audit profession. If you are interested in the findings results of this study, we would be glad to provide you with the results.*

*Thank you for your support!*

Notes on how to complete the questionnaire:

*For each audit/client, the master data sheet needs to be completed. Additional information needs to be provided for both, the summary of uncorrected audit differences and the summary of corrected audit differences. Please use only the attached templates.*

*In the master data sheet, pages 2 and 3 need to be completed for every audit/client. Page 4 needs to be completed only for audits of group financial statements.*

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Client identifier:

1. **Subject matter** (note: Please check one box only.)
  - Separate financial statements (German GAAP)
  - Separate financial statements (IFRS)
  - Reconciliation of separate financial statements (German GAAP) to separate financial statements (IFRS)
  - Group financial statements (German GAAP)
  - Group financial statements (IFRS)
  
2. **Audit mandated by law?** yes  no
  
3. **Client's line of industry**
  - Industrial Markets (IM)
  - Information, Communication & Entertainment (ICE)
  - Consumer Markets & Retail (CM)
  
4. **Capital-marked orientation of the client** yes  no 
  - Publicly traded in Prime Standard
  - Publicly traded in General Standard
  
5. Is a **management remuneration** scheme which is based on the financial statements in place with the client? yes  no
  
6. Does the client have an **audit committee**? yes  no
  
7. Has the client established an effective **internal audit** function? yes  no
  
8. Please evaluate the **quality of the client's management** (i.e. integrity, competence).  
very low ←————→ very high
  
9. Please evaluate the **client's economic position**.  
very weak ←————→ very healthy
  
10. Please evaluate the **level of competition** within the client's line of industry.  
strongly decreasing ←————→ strongly increasing
  
11. Please evaluate the existence and effectiveness of the client's **entity-level controls** (high-level controls).  
very low ←————→ very high
  
12. Please evaluate the overall strength of the **client's internal control system**.  
very low ←————→ very high

Client identifier:

13. **Audit Opinion**

- Unmodified
- Unmodified including an 'emphasis of matter' or 'other matter' paragraph
- Modified
- Adverse / disclaimer of opinion

14. **How long has the client been audited by your audit firm?**

- 1 year
- 2 years
- 3 - 5 years
- > 6 years

15. **Hard close** yes  no

16. **Joint audit** yes  no

17. **Workload** in hours needed to conduct the audit (estimated)

- < 200
- 200-1000
- > 1000

18. Materiality threshold for the financial statements as a whole (**overall materiality for audit planning purposes**) in accordance with the internal audit manual (**in T€**)

The following numbers **need to be given in T€** sign (+/-) T€

19. Client's **total assets** (T€)

20. **(External) sales revenue** of the client (T€)

21. Client's **prior period**  
(external) sales revenue (T€)

22. **Profit or loss** of the client (T€)

23. Client's **current debt** (T€)  
(remaining maturity ≤ 1 year)

24. **EBITD** of the client (T€)  
(Profit or loss + interest expense + tax expense + depreciation)

25. **Number of audit differences**

Note: Audit differences comprise both corrected and uncorrected differences that are not clearly trivial (i.e. exceeding the 'not clearly trivial' threshold).

Client identifier:

**Additional data on group financial statements**

Please answer questions 26-30 only for audits of group financial statements.

26. Number of companies included in the group financial statements  
(consolidation/proportionate consolidation/at equity)

27. Ratio of group total assets **not audited by your firm**,  
percentage (%) (estimated)  %

28. Group internal sales revenue (T€)

29. Recognised Goodwill  
(from business combinations) T€

30. Please evaluate the existence and effectiveness of the **group-wide internal controls**.

very low ←  → very high



