Disclosure Checklists and Bias in Audit Judgments

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Abstract

The use of checklists in auditing is widespread and increasing. We argue that while checklists might improve auditing judgments in the domain for which they are developed, they can have detrimental spillover effects on judgments in related but distinct domains. Specifically, we propose that the use of a disclosure checklist, which indicates whether a disclosure contains all the required elements but is uninformative about the quality of the accounting methods that are used, can bias auditors’ judgments of the acceptability of aggressive reporting. Our data, collected using an experiment with experienced auditors of a Big Four company as participants, supports this prediction. Specifically, in line with theory that checklist use can change auditors’ mindsets, we find that auditors using a disclosure checklist are more accepting of aggressive reporting. Our findings furthermore suggest that this effect is due to a particularly strong increase in acceptability judgments of auditors who are hired by the company’s management board as opposed to an independent audit committee, which is consistent with theory that the mindset induced by checklist use can also give way to pro-client bias. We discuss the implications of these findings for research and practice.

Keywords: Auditor independence, Checklists, Decision aids, Judgment Bias, Mindset, Professional skepticism.


Introduction

The use of checklists as decision-making aids is widespread in auditing. Audit firms not only use checklists to point auditors’ attention to internal control weaknesses or potential fraud cases but also to ensure that the accounting methods used by client firms are in line with relevant accounting standards (e.g., Dowling & Leech, 2007). One important type of checklist that is employed by many audit firms nowadays is a factual disclosure checklist that indicates whether all the required elements of a disclosure are present.1 Auditors often use such disclosure checklists while reviewing the audit file and forming an audit opinion (Dowling & Leech, 2007, p. 100).

While audit firms assume that the use of checklists will improve the quality of their audits by structuring individual auditors’ judgment and decision-making processes, there are also concerns that checklist use might reduce audit quality. For example, responses to a recent green paper of the European Commission (European Commission, 2010) show that business professionals are concerned that audits have developed into a mechanistic check of whether accounting standards are correctly applied. Specifically, the European Commission notes that business respondents expressed concern that “[…] auditors have increased their focus on checklists in order to meet the demand of audit inspection units. This situation can distort the quality because it has led to a ‘perceived degeneration’ of an audit into a review on IFRS compliance instead of providing a professional judgment. […]” (European Commission, 2011, p. 11). In line with these concerns, some studies have found evidence that checklists can decrease individuals’ judgment and decision-making performance. For example, Pincus (1989) and Asare and Wright (2004) found that auditors using ‘red flag’ risk checklists were less effective in identifying fraud than auditors not using such a checklist.

The recent concerns raised in response to the European Commission’s green paper highlight the importance of more academic research into the potential detrimental consequences of checklist use. In this paper, we focus on one specific potential detrimental effect of checklist use: biased judgments in domains that are distinct from the domain about which the checklist is informative. Specifically, we examine if the use of a disclosure checklist, which requires auditors to indicate whether a specific disclosure has been made but is uninformative about the quality of the reporting method, affects auditors’ judgments about the acceptability of aggressive reporting methods. The auditing literature suggests that under certain circumstances, evidence from unrelated tasks can have spillover effects on other judgments (Philips, 1999; Piercey, 2011). Moreover, the literature has begun to explicitly acknowledge and examine the importance of auditors’ mindsets in professional judgment tasks (e.g., Jamal & Tan, 2010; Rasso, 2013). In line with this recent literature, we argue that the use of a disclosure checklist can change auditors’ mindsets and make them more willing to accept questionable accounting practices.

Specifically, we posit that checklist use causes a less critical mindset, which affects auditors’ willingness to accept questionable accounting methods in two ways. First, checklist use directly affects acceptability judgments because, due to the resulting mindset, auditors assess available information cues less critically and arrive at an audit judgment with relatively low levels of cognitive effort. Second, we argue that checklist use also affects acceptability judgments because the resulting less critical mindset induces pro-client bias.

Pro-client bias exists if auditors judge aggressive accounting practices more favorably when they believe that accepting these methods is in their client’s interest. Over the past decade, the responsibility for auditor appointment and remuneration has shifted from company executives to independent audit committees. Yet, research suggests that the client firm’s
management board often remains an important party in the audit process. Consequently, there is variation in the extent to which auditors perceive the firm’s management board as their client (Bazerman & Moore, 2011). Our theory suggests that the less critical mindset due to checklist use will lead to more favorable judgments about aggressive accounting methods if auditors feel primarily accountable to the firm’s management board as opposed to an independent audit committee. Whereas the management board has prepared the financial statements and will generally prefer a favorable opinion, the interests of an independent audit committee are likely best served with a more objective and critical assessment (Koch, Weber, & Wüstemann, 2012). Therefore, auditors with less critical mindsets are more likely to reach a favorable opinion about these methods if they feel accountable to the management board. Thus, checklist use will be especially detrimental when management is the client. Following this reasoning, we predict that the effect of checklist use on judgments of the acceptability of aggressive accounting methods is stronger for auditors who are hired by a firm’s management board than for auditors who are hired by an independent audit committee.

We test our predictions with an experiment involving 55 experienced auditors working for a Big Four auditing firm in the Netherlands. Participants in the experiment were provided with two audit cases in which they had to rate the acceptability of the accounting methods of a fictitious company. These methods were designed to be indicative of aggressive earnings management without explicitly violating any of the applicable accounting standards (IFRS). Our first manipulation is checklist use. Half of the participants were required to complete an IFRS disclosure checklist before providing their judgment, whereas the other half did not use

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2 This is both the case in countries with corporate governance systems with one-tier boards, such as the UK and the US, and countries with two-tier boards, such as Germany and the Netherlands (Collier & Zaman, 2005; Gendron & Bédard, 2006; Krishnan & Visvanathan, 2008). For example, in countries with a two-tier system, the management board is often still the party that formally appoints and remunerates the auditor while in one-tier countries, in which this formal responsibility now lies with an audit committee, management is still seen as an important driving force behind auditor appointment and termination (Cohen, Krishnamoorthy & Wright, 2010; Dhaliwal, Lamoreaux, Lennox, & Mauler, 2013; Fiolleau, Hoang, Jamal, & Sunder, 2013).
a checklist. Our second manipulation is client type. Specifically, we manipulate whether the auditor’s client is the management board or an independent audit committee.

We find that the use of a disclosure checklist indeed increases auditors’ acceptance of aggressive accounting methods and that this effect is driven by the auditors who are accountable to the management board as opposed to the audit committee. Our study contributes to the literature in the following ways. First, the findings of our study contribute to our understanding of the role of unconscious bias as a potential threat to auditor independence and the mechanisms that can be employed to reduce this threat (Bazerman, Loewenstein, & Morgan, 1997; Bazerman, Loewenstein, & Moore, 2002; Bazerman & Moore, 2011). While Bazerman et al. (1997, 2002) and others claim that auditor independence is ‘impossible’ and that unconscious pro-client bias likely influences auditors’ judgments, the extant empirical literature is inconclusive on this point (e.g., Koch et al., 2012). Hurtt, Brown-Liburd, Earley and Krishnamoorthy (2013) conclude that the effects of client preferences on auditors’ judgments are likely context specific. Our study adds to the literature by showing that while client type (management or audit committee) may not have a direct effect on auditors’ perceptions of the acceptability of accounting methods, it does nonetheless affect such perceptions in interaction with the use of checklists. Second, by showing that checklist use brings about a less critical mindset, evoking a pro-client bias, our research also addresses the call for experimental investigation into the effects of decision aids on auditors’ skepticism (Hurtt et al., 2013, p.58). Specifically, we show that checklist use can have spillover effects on judgments in areas other than the one about which the checklist is informative. Third, our study contributes to the emerging literature on auditor mindsets (Backof, Bamber, & Carpenter, 2011; Jamal & Tan, 2010; Griffith, Hammersley, Kadous & Young, 2014; Rasso, 2013). While most of these concurrent studies directly manipulate auditors’ mindset and observe how different mindsets affect estimates or decisions, we use mindset theory (Gollwitzer, 1990; Heckhausen
& Gollwitzer, 1987) to explain how a decision aid that is often used in audit practice affects judgments of aggressive reporting. Finally, our study examines auditor independence in a European two-tier board setting while most of the existing evidence comes from North American one-tier corporate governance systems. One additional benefit is that the two-tier board setting allows us to realistically manipulate client interests in our experiment without explicitly mentioning the clients’ preferences and thus risking the possibility of inducing a demand effect.

This paper proceeds as follows. In the next section we provide an overview of the relevant literature and we develop our hypotheses. In the third section we describe the experimental research method. This section is followed by a section summarizing the findings of the experiment. In the fifth and final section we discuss our conclusions, the study’s limitations and avenues for future research.

Theory and hypotheses development

According to the IFAC International Ethics Standards Board of Accountants’ (IESBA) Code of Ethics for Professional Accountants, auditor independence requires a state of mind that allows auditors to exercise objectivity and professional skepticism. Objectivity is defined in the Code as a fundamental principle “to not allow bias, conflict of interest or undue influence of others to override professional or business judgments” (IFAC, Section 100.5b). Professional skepticism “is indicated by auditor judgments and decisions that reflect a heightened assessment of the risk that an assertion is incorrect, conditional on the information available to the auditor” (Nelson, 2009, p.4).

While objectivity and professional skepticism have a long history in auditing research (Hurtt et al., 2013; Nelson, 2009), only very recently have auditing scholars started to focus on the states of mind that allow for objectivity and professional skepticism (Backof et al., 2011;
Griffith et al., 2014; Rasso, 2013). Rasso (2013) and Griffith et al. (2014) directly manipulate auditors’ mindsets and find that mindsets affect auditors’ professional skepticism when auditing complex accounting estimates. Backof et al. (2011) find that judgment frameworks affect auditors’ mindsets, which in turn influence their willingness to accept client-preferred accounting methods. Following an important research tradition in psychology (Armor & Taylor, 2003; Gollwitzer, 1990; Gollwitzer & Bayer, 1999; Heckhausen & Gollwitzer, 1987), the emerging research on auditors’ mindsets generally distinguishes between ‘deliberative’ and ‘implémental’ mindsets. Deliberative mindsets are tuned towards evaluating alternative outcomes and are characterized by a greater receptivity to incoming information and an impartial and objective analysis of that information (Armor & Taylor, 2003; Heckhausen & Gollwitzer, 1987). Implemental mindsets, on the other hand, are tuned towards implementing a chosen alternative and foster biased information processing to reinforce the desirability and adequacy of the chosen alternative (Fujita, Gollwitzer, & Oettingen, 2007; Gollwitzer, 1990; Heckhausen & Gollwitzer, 1987).

The current audit literature on mindsets suggests that auditors’ professional skepticism is higher if they are in a deliberative (as opposed to implemental) mindset (Backof et al., 2011; Griffith et al., 2014; Rasso, 2013). We are primarily interested in how using a disclosure checklist affects auditors’ mindsets and, in turn, their judgments about the acceptability of aggressive accounting methods. Several studies show that decision aids such as checklists can improve auditors’ judgment and decision-making performance at the task for which they were developed (e.g., Bonner, Libby, & Nelson, 1996; Kochetova-Kozloski, Messier, & Eilifsen, 2011). However, we propose that checklists will not only affect judgments and decisions in the domain for which they are developed, but can also have spillover effects on judgments and

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3 The psychology literature generally refers to the states of mind of decision makers as their ‘mindset’ (e.g. Fujita et al., 2007; Gollwitzer, 1990; Hamilton, Vohs, Sellier, & Meyvis, 2011). A mindset is defined as a set of mental processes that produce a disposition or readiness to behave in a particular manner (cf. Gollwitzer, 1990; Griffith et al. 2014; Hamilton et al. 2011).
decisions in other domains because they change auditors’ mindsets. As Hamilton et al. (2011, p. 14) indicate, mindsets are ‘sticky’ and “[…] once activated, mindsets remain active beyond the initial task, thereby influencing subsequent and even unrelated tasks.”

Disclosure checklists are used by audit firms from all over the world including the Big Four (e.g., Dowling & Leech, 2007). Typically, they ask auditors to check whether specific elements are disclosed in a firm’s financial statements. Importantly, compliance with such a checklist does not mean that the accounting methods used in these financial statements provide a true and fair view of the financial position of a company and the results of its operations and its cash flows. Instead, compliance with a disclosure checklist merely indicates that all the elements that should be disclosed are indeed disclosed. Using a disclosure checklist therefore should not alter an auditor’s opinion about the acceptability of an aggressively income increasing or income decreasing accounting method. Yet, if checklist use changes auditors’ mindsets it can have a spillover effect on such opinions.

During a judgment or decision making process, individuals may switch from one mindset to another. Environmental circumstances or deliberate interventions can cause such a change to happen (Hamilton et al., 2011). We argue that the use of a disclosure checklist can cause a change in the mindset of an auditor who evaluates the accounting methods used in a company’s financial statements. Judging the acceptability of a proposed accounting treatment requires a self-structured approach and deep cognitive processing of the provided information cues (cf. Asare & Wright, 2004). Consequently, it is important that auditors have a deliberative mindset that allows them to search and process available information in an unbiased manner and to arrive at a judgment that reflects their best estimate of the actual economic situation of the firm. Going through a disclosure checklist and explicitly verifying that various required disclosures are actually present can compromise this mindset. It moves auditors into a ‘verification mode’ in which neither neutrality nor presumptive doubt characterize their
approach to the information in the financial statements, but a basic sense that ‘everything is fine’. In other words, auditors who spend time deliberately confirming that a disclosure contains all the required elements, will be driven into a more implemental and less critical mindset, characterized by the biased presumption that the accounting methods that are used in the disclosure are acceptable. As a result, they will exhibit less professional skepticism than auditors who do not use a checklist.\footnote{While we are specifically interested in the effect of the use of disclosure checklists on judgments about the acceptability of aggressive accounting treatments, in principle our reasoning also applies to the effects of other decision aids that can move auditors into a more implemental mindset (e.g., other types of checklists) on unrelated audit tasks that require professional judgment.}

This reasoning is supported by the existing auditing literature. First, several studies have shown that under certain conditions performance on one audit task can have spillover effects on other audit tasks. For example, Philips (1999) found that risk assessments on one type of account influence the amount of critical attention given to judgments on other accounts. Additionally, O’Donnell & Schultz (2005) established that a positive general evaluation (strategic assessment) can cause a halo effect, flowing over into more positive consecutive evaluation judgments. Our reasoning is also supported by recent empirical work on the effects of auditors’ mindsets. For example, Backof et al. (2011) found some evidence that judgment frameworks affect auditors’ acceptance of aggressive reporting and argue that this is because judgments frameworks influence auditors’ mindsets. Griffith et al. (2014) and Rasso (2013) manipulated auditors’ mindsets directly and found that auditors with a more implemental mindset were less skeptical while auditing complex accounting estimates than auditors with a more deliberative mindset.

In sum, based on the reasoning and literature outlined above, we expect that because it induces a less critical mindset, checklist use will lead to higher acceptability judgments of aggressive accounting. We test the following corresponding hypothesis:
H1. Auditors who use a disclosure checklist judge aggressive accounting methods as more acceptable than auditors who do not use such a checklist.

The extent to which the change in mindset induced by checklist use leads to more acceptance of aggressive accounting methods likely depends on the constituency to which the auditor is accountable. According to Tetlock (1985), individuals are often driven by a desire to make judgments and decisions of which they are reasonably confident that they will be acceptable to whomever they feel they are accountable to. Evidence indeed shows that people unconsciously interpret information in a self-serving manner, such that for example two individuals who receive the same information make different predictions about a third person’s behavior depending on their formal relation to this person (e.g., Babcock & Loewenstein, 1997; Babcock, Loewenstein, Issacharoff, & Camerer, 1995).

While traditionally auditors were hired by the firm’s management board, over the past decade the responsibility for auditor appointment and remuneration has shifted from company executives to independent audit committees. There is much debate about whether auditors can be truly independent from the firm’s management and about whether the recent governance reforms are effective in mitigating auditors incentives to side with managers (e.g., Amir, Guan, & Livne, 2010; Bazerman & Moore, 2011). Empirical studies directly examining the effects that clients have on audit judgments are relatively scarce and have not produced conclusive evidence. For example, Buchman, Tetlock, and Reed (1996) found some evidence that auditors who were accountable to a representative of a client firm issued different opinions than auditors who were accountable to audit partners. However, knowledge of a client’s disclosure preference by itself did not influence auditors’ view on the acceptability of a specific disclosure. Moore, Tanlu, and Bazerman (2010) performed an experiment in which they manipulated the type of client. In their study, professional auditors were either told that they
had been hired as an external auditor by the client firm or by a potential outside investor. They found that auditors who were acting on behalf of the client firm appeared more willing to accept the firm's aggressive accounting than those who were hired by the outside investor. In another experimental study, Koch et al. (2012) found mixed evidence regarding the effect of client identity on auditors’ judgments. Half of their auditor participants were told that a firm’s management had hired them and that it would miss earnings forecasts, forfeit bonuses, and face the risk of dismissal when opting for a more conservative accounting treatment. The other half was informed that they had been hired by the firm’s oversight board, whose members were described as facing litigation risk in case of aggressive financial reporting and as being in favor of limited possibilities for dividend payouts in order to ensure the firm’s viability. Next, the participants were asked to provide an audit opinion on the firm’s financial statements which contained some aggressive reporting. Koch et al. (2012) established that client identity as such had no impact on auditors’ opinion. However, they also found that auditors who experienced high client retention pressure were more likely to accept aggressive reporting methods if they were hired by the management board than if they were hired by the oversight board. Finally, a recent archival study of Dhaliwal et al. (2013) shows that companies in which managers have more influence on auditor selection have a lower earnings response coefficient, but not a significantly higher propensity to beat analysts’ earnings forecasts.

In summary, despite claims by Bazerman et al. (1997, 2002) and others that auditor independence is ‘impossible’, the extant empirical literature is inconclusive about whether or not audit opinions are influenced by who the auditor’s client is, and suggests that this is probably context-dependent (Hurtt et al., 2013). As long as the context allows auditors to approach audit evidence with a sufficiently critical mindset we may not observe effects of client type on audit judgments. However, in a context in which auditors’ mindsets leave less room for professional skepticism, such as when using a disclosure checklist, effects of client type
can be more pronounced. The reason is that, without a sufficiently critical mindset, “[…] the most socially acceptable option is obvious, likely to come to mind quickly and likely to be bolstered by supportive arguments readily available in the environment […]” (Tetlock, 1985, p. 311).

To examine this issue, we test the effect of checklist use on the evaluation of aggressive reporting in two contrasting settings: one in which the auditor is hired by the firm’s management board and one in which the auditor is hired by an independent audit committee (Koch et al., 2012). Assuming that a company’s management board generally prefers auditors to provide a favorable opinion about the accounting methods used in the financial statements, whereas the interests of an independent audit committee are best served with a more objective and critical assessment to minimize litigation risk, a stronger influence of the management board on the hiring and firing of the auditor will be associated with a stronger increase in auditors’ willingness to accept aggressive accounting in financial statements after using a disclosure checklist. Thus, our prediction is that checklist use will increase auditors’ acceptability of aggressive accounting methods more when management is the client than when an independent audit committee is the client.\(^5\) We test the following formal hypothesis:

H2. The (positive) difference in auditors’ acceptability judgments between settings where a disclosure checklist is used versus not used, is greater when the management board is the client than when the independent audit committee is the client.

\(^5\) Following Moore et al. (2010) and Koch et al. (2012) we designed our experiment to test whether auditors that are provided with the same financial statements reach different conclusions when they feel accountable to different types of clients. Like Koch et al. (2012) we exploit the opportunity that is provided by the corporate governance regime in a Western European country which allows external auditors to be hired by either a company’s management board or an audit committee consisting of members of the supervisory board. However, it is important to emphasize that our theoretical expectations extend to situations in which client influence on the hiring and firing of external auditors is not a dichotomous variable but a continuous one. As for example Cohen et al. (2010) and Dhaliwal et al. (2013) clearly show, even in the post-SOX era management influence on auditor selection decisions is often substantial and varies cross-sectionally.
Experimental design and method

Experimental Design

We test our hypotheses using an experiment with a $2 \times 2$ between-subjects factorial design. The dependent variable is the participants’ assessment of the acceptability of two accounting methods as described in two case scenarios. One case involved an aggressively income decreasing method related to the impairment of a patent. The other case described an aggressively income increasing method related to construction contracts. We manipulated checklist use by requiring the participants in half of the conditions to use a factual IFRS disclosure checklist before assessing the methods’ acceptability whereas the participants in the other conditions could not use such a checklist.

Client type was manipulated by varying whether the auditor was hired by management or by an independent audit committee in the case scenario.

Participants

The participants in our experiment were 55 auditors from two offices of a Big Four auditing firm in the same region in the Netherlands. Table 1 contains demographic information about the participants in our sample. As is clear from this table, most participants worked at the staff or senior staff level and have several years of work experience.

--- Insert Table 1 about here ---

Procedures
The auditors participated during work hours in a room in one of the offices. On average it took them about twenty-five minutes to complete all the materials. The participants received a package consisting of a set of instructions and two envelopes. The first envelope contained two separate audit cases and the second envelope contained an exit questionnaire with manipulation checks, questions about the participants’ beliefs and work methods while working on the audit cases and demographics. Participants could only open the second envelope after having returned the case materials to the first envelope and having sealed this envelope.

The instructions emphasized that the cases were not intended as a test of the participants’ knowledge of IFRS and that they were ambiguous by design. It was also emphasized that all answers would be treated strictly anonymously. Before they began with the first case, participants were asked to consider how they would inform their client in case of a material misstatement and to write down, in a few bullet points, some considerations and consequences that would play a role in their decision to inform the client. We included this task to focus the participants’ attention, to enhance their involvement in the case scenario and to reinforce our client type manipulation. By asking participants to imagine how they would communicate a misstatement to their client, we prompted them to (again) consider the identity of their client (i.e. the management board or the audit committee).

*Case materials and independent and dependent variables*

The two cases that we provided to the participants both describe an accounting treatment in the annual report of fiscal year 2010 of a fictitious firm (‘A&C IND’). The participants were asked to assume the role of external auditor of A&C IND, which was described as a ‘renowned company’ and one of the auditor’s ‘major clients’. Their task was to
carefully read the two cases (which included a description of the setting and extracts from the preliminary financial statements) and to rate the acceptability of the described accounting treatments. The first case describes an accounting method decreasing current period income (i.e. to build a cookie-jar reserve) through the treatment of an impairment loss on a patent. The second case deals with a current period income increasing method of revenue recognition related to a construction contract. Incorporating two cases, one with an income decreasing method and another one with an income increasing method enables us to draw more general conclusions about auditors’ judgments, independent of case or accounting method idiosyncrasies. This enhances the reliability of our findings and increases external validity. The accounting methods described in both cases would generally be perceived as quite aggressive. However, the cases were designed to be ambiguous and to incorporate elements that required subjective estimation (Bazerman et al., 2002). Importantly, the described accounting treatments did not explicitly violate any of the relevant accounting standards. The cases were developed in close cooperation with experienced accounting and auditing practitioners and the instrument was pre-tested with several experienced auditors, which led to a number of minor alterations. The research instrument is included in the appendix.

The first manipulation involves the use of a checklist. In practice, a disclosure checklist is often one of the important decision aids used while reviewing the audit file and forming an audit opinion (Dowling & Leech, 2007, p. 100). In the checklist conditions, participants were required to go through a factual IFRS disclosure checklist before rating the acceptability of the accounting method in A&C IND’s preliminary financial statements. This checklist asked them to indicate (Yes, No, N/A) whether a specific disclosure is made in the annual report. In the no checklist conditions, participants did not have the checklist available and rated the acceptability of A&C IND’s accounting methods immediately after reading the description of these methods. The checklist for the first case (impairment of patent) contained fourteen elements and the
checklist for the second case (construction contract) contained eleven elements. The checklists were extracted from an actual IFRS checklist that is used in practice. Importantly, the checklists focus on whether specific elements are disclosed in the financial statements but they do not provide any indication about the accuracy of the content of these disclosures. Therefore, the number of items checked on the list is not informative about the acceptability of the proposed accounting method. The checklists were constructed in such a way that all the relevant items listed were actually disclosed in both cases.\textsuperscript{6}

The second manipulation was the type of client. Because the Netherlands is a country with a two-tier board structure, auditors can be hired by the firm’s management board and by an audit committee (consisting of members of the firm’s supervisory board).\textsuperscript{7} The instructions and the case materials consistently specified that the client who had hired the auditor and to whom the auditor would have to communicate their findings was either A&C IND’s management board or an independent audit committee consisting of members of A&C IND’s supervisory board. We did not describe the two client types as having specific preferences for aggressive or conservative financial reporting, to mitigate potential validity threats posed by demand effects and hypothesis guessing.

\textsuperscript{6} The checklist for the first case contained one item (IAS 36.130e) that is irrelevant and the checklist for the second case contains three items that are irrelevant (IAS 18.14a, b, and c). For these items the box \textit{N/A} should be checked instead of the box \textit{Yes}. Including a few irrelevant items should reduce participants’ tendency to mechanically tick the \textit{Yes} boxes and thus works against us finding support for our hypotheses.

\textsuperscript{7} The corporate governance system in the Netherlands is comparable to the system in Germany, which is described in detail in Koch et al. (2012). According to the Dutch law, both the management board and the supervisory board can appoint the auditor (Dutch Civil Code, Book 2, Title 9). Only the supervisory boards of listed firms and financial institutions are required to form an audit committee. The Dutch Corporate Governance Code (Corporate Governance Code Monitoring Committee, 2008) specifies as a best practice provision that “The audit committee shall in any event focus on supervising the activities of the management board with respect to relations with the external auditor, including, in particular, his independence, remuneration and any non-audit services for the company.” (Best Practice Provision III.5.4.f). In practice, there is much variation in the extent to which audit committees follow this provision and how they enact their role. While in some firms the audit committee selects, appoints and monitors the auditor, in other firms the audit committee leaves these tasks largely to the management board. Currently, there is much discussion on the future role of audit committees. For example, the Netherlands Authority for the Financial Markets (2012, p. 22) recently concluded that there is a need to increase the role of the audit committee and to set stricter requirements to safeguard its independence.
To assess the dependent variable in our study, we asked participants to rate the acceptability of the accounting methods in the preliminary financial statements of the case firm on an eleven-point Likert-scale (*fully unacceptable* - *fully acceptable*). They provided separate ratings for each of the two cases. This method to assess the dependent variable is comparable to the methods employed in existing vignette studies (e.g., Moore et al., 2010).

**Results**

*Manipulation checks*

We checked whether our manipulations were successful by analyzing to what extent participants agreed with two statements in the exit questionnaire. First, manipulation of checklist use was checked by assessing participants’ agreement with the statement "In the A&C IND case, I made use of a checklist" using a seven-point Likert-scale with anchors "I totally disagree" (1) and "I totally agree" (7). The mean score was higher in the checklist (‘LIST’) conditions (Mean = 6.30, SD = 0.72) than in the no-checklist (‘NOLIST’) conditions (Mean = 2.36, SD = 1.73). This difference is statistically significant (*t* = 10.96, *p* < 0.001). Moreover, a full-factorial ANOVA with the manipulations as factors reveals only a significant main effect of checklist use and no significant interaction. Thus, the manipulation of checklist use was effective.\(^8\)

The manipulation of client type was checked with the statement: "In the A&C IND case, I was hired by the audit committee". Subjects indicated their level of agreement with this statement. The data furthermore show that all participants in the LIST conditions did actually use the checklists and indicated whether the specified items were disclosed. Of the fourteen items in the checklist for the first case (impairment of patent) participants on average indicated that 2.15 (SD = 2.30) items were *not* disclosed. Of the eleven items in the checklist for the second case (construction contract) participants on average found 2.78 (SD = 2.82) items were *not* disclosed. Notably, the number of undisclosed items according to the participants’ filled out checklists is not correlated with the acceptability ratings of the accounting methods (i.e. the DVs). Neither is the number of times a “No” box was ticked correlated with age, experience, gender or rank (all *p* > 0.1). Importantly, the number of checklist items flagged as (not) disclosed is also not significantly different in the management and the audit committee conditions.

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statement on a seven-point Likert-scale with anchors "I totally disagree" (1) and "I totally agree" (7). The mean score was higher in the audit committee (‘AUD’) conditions (Mean = 6.25, SD = 1.08) than in the management (‘MAN’) conditions (Mean = 2.37, SD = 1.50). Again, this difference is statistically significant ($t = 11.07, p < 0.001$). Also for this second manipulation check, a full-factorial ANOVA with the two manipulations as factors and the manipulation check as dependent variable reveals only a significant main effect for client type and no significant interaction. This indicates that our manipulation of client type was successful.  

**Hypotheses Tests**

In Table 2 and Figure 1 we present descriptive statistics on the dependent variables. We denote the rated acceptability of the accounting treatment in case 1 as DV1 and the rated acceptability of the accounting treatment in case 2 as DV2. As is clear from this table and figure, the patterns of the mean values of DV1 and DV2 across conditions are very similar. In fact, as expected, there is a significantly positive correlation between the two DVs (Pearson $r = 0.329, p < 0.05$; Spearman’s $\rho = 0.311, p < 0.05$). As is clear from Table 2, for both DVs the mean value is lowest in the NOLIST-MAN condition and highest in the LIST-MAN condition, while the means in the AUD conditions are somewhere in between.

--- Insert Table 2 about here ---

Despite the general effectiveness of the manipulations, seven participants answered one of the two manipulation check questions incorrectly. Of these seven participants, four indicated that they at least somewhat agreed with the statement that they had used a checklist, while they were actually in a NOLIST condition. One possibility is that these participants were well aware that they did not use a provided IFRS disclosure checklist but that in deciding about the acceptability of the described accounting methods they used a self-developed (mental) checklist. We retain the data from these participants for our hypotheses tests. However, if we test the hypotheses excluding these seven cases the results are inferentially identical.
We test our hypotheses using a two-factor MANCOVA. First, using a criterion of $z = 2.5$, we established that there were no univariate outliers. Also, examination of Mahalanobis Distance values using a criterion of $\alpha = 0.001$ (critical $\chi^2 = 13.816$) revealed no multivariate outliers. A Levene test indicates that the assumption of equality of variance across conditions is not violated ($W = 1.96, p > 0.1$ for DV1; $W = 0.04, p > 0.1$ for DV2). In addition, Box’s test of the equality of the covariance matrices indicates that the assumption of equal covariance in each treatment condition was not violated (Box’s $M = 10.27, F = 1.06, p > 0.1$).

In the MANCOVA, participant gender and years of work experience as auditor were included as control variables. Gender was included to control for any relevant personality characteristic that may differ between male and female auditors. Experience was included since prior literature documents that it can affect skepticism (Hurtt et al., 2013, p.68). The results are summarized in Table 3. From this table it is clear that there is a significant interaction effect of checklist use and client type on the combined dependent variable (Pillai’s Trace = 0.170, $F = 4.902, p = 0.012$). There is also a significant main effect of checklist use (Pillai’s Trace = 0.296, $F = 10.105, p < 0.001$) but not of client type (Pillai’s Trace = 0.011, $F = 0.275, p = 0.761$). These findings are consistent with both H1 and H2, but the more detailed analyses below are required to reveal the true nature of these effects. The variance explained by checklist use and the interaction effect is substantial (partial $\eta^2$ for checklist use is 0.296 and partial $\eta^2$ for the interaction is 0.170). There is no significant effect of the covariates gender or experience (both $p > 0.05$).

--- Insert Figure 1 about here ---

\[\text{\footnotesize 10 Results from our MANCOVA and ANCOVA analyses are not sensitive to the in- or exclusion of these covariates. That is, results are inferentially identical and our conclusions regarding the hypotheses do not differ if we exclude either or both of these covariates. Auditor rank has also been identified as a possible antecedent of skepticism in prior research (Hurtt et al., 2013, p.68). If we include this variable as a covariate, we again find inferentially identical results, regardless of whether we omit experience or not.}\]
We continue our analysis by examining the univariate results for the two separate dependent variables. These results can be found in Table 4 and are illustrated in Figures 2 and 3. As is clear from Table 4, the results for the separate dependent variables DV1 and DV2 are very similar and mirror the results obtained with the combined dependent variable in the multivariate test. Thus, there are significant main effects of checklist use for both DV’s ($F = 12.815, p = 0.001$ for DV1; $F = 10.783, p = 0.002$ for DV2). On average, the acceptability of the used accounting methods is rated higher by auditors that used a checklist (Mean = 6.22, SD = 2.06 for DV1; Mean = 5.78, SD = 1.89 for DV2) than by auditors that did not use a checklist (Mean = 4.21, SD = 2.10 for DV1; Mean = 4.21, SD = 1.81 for DV2). There are also significant client type × checklist use interaction effects for both DV’s ($F = 5.549, p = 0.023$ for DV1; $F = 5.905, p = 0.019$ for DV2) indicating that the difference in acceptability ratings between the NOLIST and the LIST conditions is significantly larger for auditors accountable to the firm’s management board than for auditors accountable to the independent audit committee. The results are also qualitatively similar if we run an ANCOVA with the average of the scores on DV1 and DV2 (i.e. $[(DV1 + DV2) / 2]$) as dependent variable. We label this variable DVmean. This variable facilitates thoroughly investigating the nature of the statistical main and interaction effects for both cases simultaneously. We use this variable to explore whether individual conditions are significantly different from each other using pairwise comparisons. These comparisons are listed in Table 5. We find that the LIST-MAN condition is significantly different from the other 3 conditions (all $p < 0.01$). The only other significant difference is between the NOLIST-MAN condition and the LIST-AUD condition ($p < 0.05$).
The pairwise comparisons show that while on average checklist use leads to a higher degree of acceptability, there is no significant effect of checklist use when the audit committee is the hiring party. This can also be seen from the relatively flat line for the audit committee conditions in figures 2 and 3. Thus, we conclude that H1 is only partly confirmed. Furthermore, these results indicate that in the NOLIST conditions, there is no significant effect of having management instead of the audit committee as client. Hence, we conclude that which party is the client only matters when a checklist is used, and vice versa: whether a checklist is used only matters when management is the client. In sum, it is the combination of using a disclosure checklist and having management as client which results in higher acceptability judgments of aggressive accounting treatments by auditors.

Additional analyses

Although our theory is about bias that affects auditors’ judgments at the unconscious level, we did include some items in the exit questionnaire to get a better understanding of the participants’ thoughts and perceptions and of the processes driving our results. Table 6 lists these items and their mean scores in each condition. The table also indicates whether these means are significantly different. First, we find that participants in all four conditions felt reasonably able to make an objective, balanced judgment of the case company’s accounting (item 1) and generally felt comfortable with their judgment (item 2). The mean scores on these two items do not differ significantly between conditions. The scores on item 3 moreover
indicate that, on average, participants in all four conditions felt that they looked critically at the proposed accounting treatments.

--- Insert Table 6 about here ---

One interesting finding is that participants in all four conditions tended to disagree with - or be neutral about - the statement “I gave some thought to which party appointed and remunerated me while judging the acceptability of A&C IND's FY2010 accounting” (item 4). This is in line with our finding that client type by itself did not influence the auditors’ judgments. Moreover, the mean score on this item is significantly lower in the NOLIST-MAN condition than in the NOLIST-AUD condition. This suggests that in absence of a formal disclosure checklist, the participants gave more thought to who was their client if their client was the independent audit committee instead of the firm’s management. In the checklist conditions there was no such effect of client type. This is consistent with our reasoning that providing auditors with a factual checklist moves them to a “compliance mode” characterized by a less critical mindset and reduced professional skepticism.

Another noteworthy finding is that for participants in the AUD conditions, but not the MAN conditions, checklist use is associated with a significantly reduced level of agreement with the statement "I used a structured approach to judge the acceptability of A&C IND's FY2010 accounting" (item 5). While we can only speculate about the potential explanations for this finding, we do note that it is consistent with our reasoning that the use of a checklist can interfere with the self-structured approach that an auditor usually takes when making a critical judgment about a proposed accounting treatment. Participants in the MAN conditions, where a potential for pro-client bias exists, might have experienced the checklist as less
interfering than the participants in the AUD conditions where there was no potential for this bias and participants involved in a deeper level of critical thinking.

Finally, we find that, on average, the participants in each condition considered the described accounting methods to be slightly aggressive (item 6) and that the average scores on item 7 ("In my opinion, A&C IND's FY2010 accounting was ethical") are close to the theoretical mean. This latter finding confirms that we were successful in developing a case that was ambiguous and allowed for different opinions regarding the ethicality of the proposed accounting methods. We also find that auditors who did not use a checklist found the case company’s accounting less ethical when their client was the firm’s management board. Apparently, in absence of a checklist to fall back on, participants who were engaged by the firms’ management board were relatively well aware of the dubious ethicality of the proposed accounting methods. Future research is needed to shed more light on why this awareness did not result in a lower willingness to accept these methods. Overall, we interpret the findings of the analysis of the exit questionnaire items as being in line with our experimental results and consistent with the hypothesized relationships.

**Discussion and conclusion**

Concerns have been expressed that the use of decision aids such as disclosure checklists could reduce the quality of audit judgments (e.g., European Commission, 2011). Following up on these concerns, this paper set out to investigate whether using a disclosure checklist affects auditors’ judgments of the acceptability of aggressive reporting methods. We reasoned that checklist use can impair auditors’ critical mindset and professional skepticism. This effect can exist when auditors first establish that all the elements that should be disclosed according to the checklist are indeed disclosed. As a result of the ensuing less critical implemental mindset, auditors conclude that the accounting method *per se* is more acceptable.
Next, we argued that checklist use could also induce a pro-client bias, such that after using a checklist auditors are more likely to conclude that an aggressive accounting method is acceptable if they believe this is the conclusion preferred by their client.

Our experimental results generally support this reasoning. We find that when the audit committee is the client, there is no effect of using a checklist. However, there is a strong effect of checklist use on acceptability judgments when management is the client. We conclude that it is the combination of using a disclosure checklist and having management as client which results in higher acceptability judgments of aggressive accounting treatments by auditors. Thus, using a disclosure checklist is especially detrimental when management is the client, as it can evoke a pro-client bias resulting in a higher tendency to judge aggressive accounting as acceptable.

Our findings have at least three important implications for auditing practice. First, they suggest that there are downsides to the use of disclosure checklists. Audit firms should take this into account when designing their audit procedures. Of course, this does not mean that they should just banish the use of such checklists, as there is much evidence that checklists can also improve the quality of judgments and decisions. However, they should be aware that checklist use can change an auditor’s mindset and can have spillover effects on judgments in areas about which the checklist is uninformative. Another implication relates to our finding that while client type has no direct effect on auditors’ acceptance of aggressive accounting, it does moderate the relationship between checklist use and aggressive accounting acceptance. This indicates that threats to auditor independence may be more subtle than has often been assumed. This finding is noteworthy given the inconclusiveness of research in this area and the fact that several studies have failed to establish relationships between client firm characteristics and audit outcomes (e.g., Ashbaugh, LaFond, & Mayhew, 2003). Finally, our findings also suggests that regulatory
changes that strengthen the role of independent audit committees might be even more effective than already anticipated in reducing auditors’ tendency to side with their clients. Not only does shifting the responsibility for hiring and firing of the auditor to another party than the management board largely take away auditors’ incentives to collude with management, it could also reduce unconscious pro-client bias that poses an additional threat to auditor independence.

Of course, the limitations of our study should be taken into account when drawing implications from its results. A first limitation pertains to the participants in our experiment, who all work for the same Big Four audit firm in the same region in the Netherlands. Hence, we cannot completely rule out the possibility that certain idiosyncrasies of our sample limit the generalizability of our findings. We also note that our study is set within a country with a two-tier system, where either the management board or the audit committee selects and appoints the auditor. In one-tier countries the formal responsibility to appoint an auditor now lies with the audit committee, although management is still seen as an important driving force behind auditor appointment and termination (Cohen et al., 2010; Dhaliwal et al., 2013; Fiolleau et al., 2013). Hence, also under one-tier systems there is variation in the extent to which auditors perceive the firm’s management board as their client (Bazerman & Moore, 2011), which makes our study relevant to these settings as well. Of course, when generalizing our inferences to one-tier settings, it is important to acknowledge that countries with different board structures likely also vary in other respects. For instance, differences in legal systems, auditor education and culture can influence auditors’ mindsets and professional skepticism (Hurtt et al., 2013).

Second, our experiment used fictitious cases. We tried to reduce concerns associated with this limitation as much as possible by developing the cases in close cooperation with auditing practitioners and pre-testing them with auditors. Nevertheless, the choice of
specific elements in the scenarios (patents and construction contracts) might have influenced the results. Another consideration is that all participants were presented with the cases in the same order. We do note however that the results for the two scenarios are very similar and that our hypotheses are supported for both the patent impairment case, which described an accounting method that aggressively decreased current period earnings, and the construction contract case, which described an accounting method that aggressively increased current period earnings.

Another potential limitation arises because the disclosure checklist, although important, is not the only decision tool used as an input for reviewing the audit file (Dowling & Leech, 2007). In our experiment, we made the checklist very salient, possibly more so than in practice, to maximize internal validity. In the real world, the effect of checklist use on audit judgments might therefore be less strong than in our experiment. Given that experiments are not well suited to test effect sizes, but rather to establish the existence and direction of effects, further research using other methods is needed to confirm the economic significance of our findings. In practice, we would expect the tendencies we found to be most pronounced in non-standard situations involving high ambiguity (Kadous, Kennedy, & Peecher, 2003) – such as in our two cases.

Finally, our study focuses on settings in which the audited financial statements contain all the required elements. The current study does not necessarily allow us to draw conclusions about the effects of checklist use in settings in which the disclosure is relatively incomplete. Incomplete disclosures, however, are likely less common in practice, given managers’ awareness of disclosure requirements.

Our study points to several avenues for future research. First, we believe more research is needed on the costs and benefits of decision aids in auditing settings. Given the increase in the use of disclosure checklists, we particularly call for more research on the
effects of such checklists on auditors’ judgment and decision making. Such future research could examine other potential moderators of the relation between checklists use and auditors’ acceptance of aggressive reporting. For example, researchers could investigate how - if at all - this relationship is influenced by financial incentives (e.g., Falk, Lynn, Mestelman, & Shehata, 1999), accountability pressure (e.g., Hoffman & Patton, 1997; Kennedy, 1993) or personality characteristics (Sweeney & Roberts, 1997; Windsor & Ashkanasy, 1995). Future research should also pay more attention to the use of debiasing techniques in auditing settings (Larrick, 2004). Next, we are looking forward to more research on the antecedents and consequences of auditor mindsets. Auditing researchers are just beginning to investigate how more general states of mind translate into specific attitudes and behaviors and how accounting regulations and audit procedures might affect mindsets (Backof et al. 2011; Griffith et al. 2014; Jamal & Tan, 2010; Rasso, 2013). We believe that a focus on mindsets will allow us to better understand judgment and decision making in auditing and other accounting fields. Finally, our study highlights the importance of simultaneously assessing different types of variables (i.e. characteristics of corporate governance regimes, accounting standards, client relationships, audit processes and individual characteristics) in the investigation of potential threats to auditor independence. Variables at different levels of analysis can interact in subtle ways in influencing auditors’ judgments. Experimental research is particularly well suited to identify and explain such interaction effects (Solomon & Trotman, 2003).
References


Appendix

CASE 1: IMPAIRMENT
Management of A&C IND [A&C IND’s independent audit committee] has hired you to perform the FY2010 audit of historical financial statements. The applicable accounting standard is IFRS. Before discussing your findings with management [the audit committee], please examine carefully the following case.

Situation
On 1 January 2007, company A&C IND acquired a 10-year patent for €20m that provides the exclusive right to develop and market product A. With some customers, A&C IND entered into long-term contracts in 2009 to produce and deliver a set amount of product A each year.

Due to difficult market conditions in 2010, sales of product A declined sharply. As a result, management failed amply to meet its earnings target and missed out on an annual bonus. Impairment testing indicates the patent’s fair value less costs to sell to be €11m. The value in use amounts to €9m. Since A&C IND has a contractual obligation to produce and deliver to certain customers, management is unwilling to sell the patent. Hence, it decides to ignore fair value less costs to sell and take value in use as the patent’s recoverable amount. Prior to the long-term contracts, in 2008, management used fair value less costs to sell as the recoverable amount for purposes of impairment testing.

The resulting impairment loss in 2010 (€12m - €9m = €3m) is material to A&C IND’s financial statements. The preliminary FY2010 financial statements, as prepared by A&C IND’s management, state the following:

FY2010 Financial Statements
The patent acquired provides an exclusive right to develop and market product A. It has a 10-year finite useful life and is carried at cost less accumulated amortization and impairment losses. Amortization is calculated using a straight-line method over the useful life. The amortization charge is recognized within the ‘depreciation and amortization expenses’ of the income statement.

<table>
<thead>
<tr>
<th>Historical cost</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance at 1 January 2009</td>
<td>€20m</td>
</tr>
<tr>
<td>Balance at 31 December 2009 and 1 January 2010</td>
<td>€20m</td>
</tr>
<tr>
<td>Balance at 31 December 2010</td>
<td>€20m</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accumulated amortization and impairment losses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance at 1 January 2009</td>
<td>€4</td>
</tr>
<tr>
<td>Amortization charge</td>
<td>€2m</td>
</tr>
<tr>
<td>Impairment loss</td>
<td>€0</td>
</tr>
<tr>
<td>Balance at 31 December 2009 and 1 January 2010</td>
<td>€6m</td>
</tr>
<tr>
<td>Amortization charge</td>
<td>€2m</td>
</tr>
<tr>
<td>Impairment loss</td>
<td>€3m</td>
</tr>
<tr>
<td>Balance at 31 December 2010</td>
<td>€11m</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Carrying amount</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance at 1 January 2009</td>
<td>€16m</td>
</tr>
<tr>
<td>Balance at 31 December 2009 and 1 January 2010</td>
<td>€14m</td>
</tr>
<tr>
<td><strong>Balance at 31 December 2010</strong></td>
<td><strong>€9m</strong></td>
</tr>
</tbody>
</table>

Based on a value in use calculation, an impairment loss of €3m is recognized in respect of the intangible asset ‘patent’. This impairment is primarily due to increased price competition resulting from the market entry of a substitute product. The pre-tax risk adjusted discount rate in the most recent value in use calculation is 11.7%. In the previous value in use calculation in 2009 this was 10.2%.

The impairment loss is recognized as a separate line item within operating profit.
Upcoming is the closing meeting. Management [The independent audit committee] has appointed you and wants to discuss your audit findings and the opinion you are planning to issue. In advance of the meeting – as one of the audit’s final steps – you are now asked to [fill out the IFRS Disclosure Checklist and] judge the appropriateness of A&C IND’s accounting.

**IFRS Disclosure checklist [LIST conditions only]**

Please complete the following IFRS Disclosure Checklist with respect to A&C IND’s FY2010 financial statements (tick the appropriate box: ‘yes’, ‘no’, or ‘n/a’).

<table>
<thead>
<tr>
<th>Intangible Assets</th>
<th>Disclosure made</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IAS 38.118</strong></td>
<td></td>
</tr>
<tr>
<td>Does the entity disclose the following for each class of intangible assets:</td>
<td>Yes</td>
</tr>
<tr>
<td>a. Whether the useful lives are indefinite or finite and, if finite the useful lives or the amortization rates used</td>
<td>□</td>
</tr>
<tr>
<td>b. The amortization methods used for intangible assets with finite useful lives</td>
<td>□</td>
</tr>
<tr>
<td>c. The gross carrying amount and the accumulated amortization (aggregated with accumulated impairment losses):</td>
<td></td>
</tr>
<tr>
<td>► at the beginning of the reporting period</td>
<td>□</td>
</tr>
<tr>
<td>► at the end of the reporting period</td>
<td>□</td>
</tr>
<tr>
<td>d. The line item(s) of the statement of comprehensive income in which any amortization of intangible assets is included</td>
<td>□</td>
</tr>
<tr>
<td>e. A reconciliation of the carrying amount at the beginning and end of the reporting period, showing:</td>
<td></td>
</tr>
<tr>
<td><strong>IAS 36.126</strong></td>
<td></td>
</tr>
<tr>
<td>► impairment losses recognized in profit or loss during the reporting period under IAS 36, if any</td>
<td>□</td>
</tr>
<tr>
<td>► any amortization recognized during the reporting period</td>
<td>□</td>
</tr>
</tbody>
</table>

**Impairment**

<table>
<thead>
<tr>
<th>IAS 36.126</th>
<th>Does the entity disclose the following information for each class of assets:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. The amount of impairment losses recognized in profit or loss during the period and the line item(s) of the statement of comprehensive income in which those impairment losses are included</td>
<td>□</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IAS 36.130</th>
<th>If an impairment loss for an individual asset, including goodwill, or a cash-generating unit is recognized or reversed during the period and is material, does the entity disclose:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. The events and circumstances that led to the recognition or reversal of the impairment loss</td>
<td>□</td>
</tr>
<tr>
<td>b. The amount of the impairment loss recognized or reversed</td>
<td>□</td>
</tr>
<tr>
<td>c. For an individual asset:</td>
<td></td>
</tr>
<tr>
<td>► the nature of the asset</td>
<td>□</td>
</tr>
<tr>
<td>d. Whether the recoverable amount of the asset is its fair value less costs to sell or its value in use</td>
<td>□</td>
</tr>
<tr>
<td>e. If recoverable amount is fair value less costs to sell, the basis used to determine fair value less costs to sell (such as whether fair value was determined by reference to an active market)</td>
<td>□</td>
</tr>
<tr>
<td>f. If recoverable amount is value in use, the discount rate(s) used in the current estimate and previous estimate of value in use</td>
<td>□</td>
</tr>
</tbody>
</table>
CASE II: Construction contracts
Management of A&C IND [A&C IND’s independent audit committee] has hired you to perform the FY2010 audit of historical financial statements. The applicable accounting standard is IFRS. Before discussing your findings with management [the audit committee], please examine carefully the following case.

Situation
As a consequence of the global financial turmoil, company A&C IND faces difficulties to meet debt covenants on a significant bank loan it holds. Notwithstanding more favorable outlooks, construction orders remain scarce at the moment. In its portfolio though, A&C IND has a contract outstanding to build a new terminal. This major six-year project commenced in 2008. Overall costs were estimated to total €100m. In accordance with IAS 11, contract revenue and costs are recognized using the percentage of completion method if a reliable estimate of the contract outcome is possible. The stage of completion is measured by the proportion that contract costs incurred to date bear to the estimated total contract costs.

Due to its early stage, A&C IND was unable to estimate reliably the outcome of the terminal construction contract in FY2008 and FY2009. Costs incurred in 2008 and 2009 were €10m and €12.5m respectively. Both exceeded pre-calculations. Management, however, still feels comfortable in 2010 about the initial overall cost estimate (€100m). Also, it deems some operational delays insignificant. Furthermore, management states that all criteria have been met to reliably estimate the contract outcome in 2010. Management estimates it at €125m. Costs incurred in 2010 were €22.5m. A cumulative €35m has been billed and received from 2008 to 2010.

Finally, a claim was filed against A&C IND by surrounding farmers, related to the construction of the terminal. Late 2010, the lower court tentatively allowed this claim for €5m. Management, Nonetheless, strongly disagrees with the legal ruling and has lodged an appeal with the higher court. A&C IND’s outside lawyer feels unable to reliably estimate the chances of success.

The preliminary FY2010 financial statements, as prepared by A&C IND’s management, state the following.

FY2010 Financial statements
Construction contracts are accounted for using the percentage of completion (PoC) method. Per contract, the stage of completion is determined by the ratio of costs incurred to the expected total cost (cost-to-cost method). Revenue from construction contracts is reported in accordance with IAS 18 Revenue and IAS 11 Construction contracts.

When the outcome of a construction contract cannot be estimated reliably, revenue is recognized only to the extent of the contract costs incurred (zero profit method). Receivables from PoC contracts comprise the aggregate amount of costs incurred and recognized profits less advances received (negative balances are disclosed under Payables).

<table>
<thead>
<tr>
<th>Terminal construction contract</th>
<th>2010</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue from construction contracts</td>
<td>€33.75m*</td>
<td>€12.5m</td>
</tr>
<tr>
<td>Expenses related to construction contracts</td>
<td>€22.5m</td>
<td>€12.5m</td>
</tr>
</tbody>
</table>

*: 125m x [(10m + 12.5m + 22.5m) / 100m] = €56.25m
56.25m – 10m – 12.5m = €33.75m

As per 31 December 2010, aggregate costs incurred and profits recognized on the construction contract amounted to €56.25m (2009: €22.5m), offset against advances received of €35m (2009: €20), giving rise to receivables of €21.25m (2009: €2.5m) and liabilities of €0 (2009: €0).

Related to the terminal construction contract, legal proceedings were started against A&C IND as it allegedly polluted the surroundings. Management firmly denies this claim. Currently, litigation is pending. A €5m contingent liability has been included in the notes.
Upcoming is the closing meeting. Management [The independent audit committee] has appointed you and wants to discuss your audit findings and the opinion you are planning to issue. In advance of the meeting – as one of the audit’s final steps – you are now asked to [fill out the IFRS Disclosure Checklist and] judge the appropriateness of A&C IND’s accounting.

**IFRS Disclosure checklist [LIST conditions only]**

Please complete the following IFRS Disclosure Checklist with respect to A&C IND’s FY2010 financial statements (tick the appropriate box: ‘yes’, ‘no’, or ‘n/a’).

<table>
<thead>
<tr>
<th>Disclosure made</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
</table>

### Construction contracts

- **IA 11.42** Does the entity present the following amounts for construction contracts separately in the statement of financial position?
  - a. The gross amount due from customers for contract work as an asset
  - b. The gross amount due to customers for contract work as a liability

- **IA 11.39** Does the entity disclose:
  - a. The amount of contract revenue recognized as revenue in the period
  - b. The methods used to determine the contract revenue recognized in the period
  - c. The methods used to determine the stage of completion of contracts in progress

- **IA 11.40** Does the entity disclose the following for contracts in progress at the end of the reporting period:
  - a. The aggregate amount of costs incurred and recognized profits (less recognized losses) to date
  - b. The amount of advances received

- **IA 11.45** Does the entity disclose any contingent assets and contingent liabilities in connection with construction contracts

- **IFRIC 15.20** If the entity recognizes revenue using the percentage of completion method for agreements that meet all the criteria in IAS 18.14 as construction progresses, does the entity disclose:
  - a. How it determines which agreements meet all the criteria in IAS 18.14 continuously as construction progresses
  - b. The amount of revenue arising from such agreements in the period
  - c. The methods used to determine the stage of completion of agreements in progress

### IAS 18 Revenue

14 Revenue from the sale of goods shall be recognized when all the following conditions have been satisfied:

- (a) the entity has transferred to the buyer the significant risks and rewards of ownership of the goods;
- (b) the entity retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold;
- (c) the amount of revenue can be measured reliably;
- (d) it is probable that the economic benefits associated with the transaction will flow to the entity; and
- (e) the costs incurred or to be incurred in respect of the transaction can be measured reliably.
### Table 1

Participant characteristics.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>28.11</td>
<td>27</td>
<td>5.67</td>
<td>21</td>
<td>52</td>
</tr>
<tr>
<td>Years of experience</td>
<td>5.07</td>
<td>4</td>
<td>4.40</td>
<td>1</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequencies</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>32</td>
<td>(58.2%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>23</td>
<td>(41.8%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rank</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junior staff</td>
<td>1</td>
<td>(1.8%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff</td>
<td>25</td>
<td>(45.5%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior staff</td>
<td>18</td>
<td>(32.7%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Senior) Manager</td>
<td>9</td>
<td>(16.4%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Director / Partner</td>
<td>2</td>
<td>(3.6%)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: n = 55.*
Table 2

Descriptive statistics per treatment condition.

<table>
<thead>
<tr>
<th></th>
<th>No Checklist ( n = 13 )</th>
<th>Checklist ( n = 14 )</th>
<th>Total ( n = 27 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DV1</td>
<td>Mean: 3.77, SD: 2.39, Min: 0, Max: 8</td>
<td>Mean: 6.93, SD: 1.38, Min: 5, Max: 10</td>
<td>Mean: 5.41, SD: 2.48, Min: 0, Max: 10</td>
</tr>
<tr>
<td>DV2</td>
<td>Mean: 3.69, SD: 1.89, Min: 1, Max: 7</td>
<td>Mean: 6.57, SD: 1.74, Min: 4, Max: 10</td>
<td>Mean: 5.19, SD: 2.30, Min: 1, Max: 10</td>
</tr>
<tr>
<td>Audit Committee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DV1</td>
<td>Mean: 4.67, SD: 1.80, Min: 2, Max: 8</td>
<td>Mean: 5.46, SD: 2.44, Min: 1, Max: 10</td>
<td>Mean: 5.04, SD: 2.12, Min: 1, Max: 10</td>
</tr>
<tr>
<td>DV2</td>
<td>Mean: 4.67, SD: 1.68, Min: 2, Max: 7</td>
<td>Mean: 4.92, SD: 1.70, Min: 2, Max: 7</td>
<td>Mean: 4.79, SD: 1.66, Min: 2, Max: 7</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DV1</td>
<td>Mean: 4.25, SD: 2.10, Min: 0, Max: 8</td>
<td>Mean: 5.22, SD: 2.06, Min: 1, Max: 10</td>
<td>Mean: 5.21, SD: 2.29, Min: 0, Max: 10</td>
</tr>
<tr>
<td>DV2</td>
<td>Mean: 4.21, SD: 1.81, Min: 1, Max: 7</td>
<td>Mean: 5.78, SD: 1.89, Min: 2, Max: 10</td>
<td>Mean: 4.98, SD: 1.99, Min: 1, Max: 10</td>
</tr>
</tbody>
</table>

Notes: Overall \( n = 55 \).
No Checklist = Experimental condition in which auditors did not complete a disclosure checklist before rating the acceptability of the proposed accounting treatment.
Checklist = Experimental condition in which auditors completed a disclosure checklist before rating the acceptability of the proposed accounting treatment.
Management = Experimental condition in which the auditor was hired by the company’s management board.
Audit Committee = Experimental condition in which the auditor was hired by the audit committee of the company’s supervisory board.
DV1 = The rated acceptability of the income decreasing accounting treatment in the first case (impairment of a patent) on an eleven-point Likert scale (Fully unacceptable – Fully acceptable).
DV2 = The rated acceptability of the income increasing accounting treatment in the second case (construction contract) on an eleven-point Likert scale (Fully unacceptable – Fully acceptable).
Table 3
MANCOVA results.

<table>
<thead>
<tr>
<th></th>
<th>Pillai’s trace</th>
<th>F-value</th>
<th>Hyp. df</th>
<th>Error df</th>
<th>2-tailed p-value</th>
<th>Partial η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>0.800</td>
<td>95.989</td>
<td>2</td>
<td>48</td>
<td>0.000</td>
<td>0.800</td>
</tr>
<tr>
<td>Covariates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>0.002</td>
<td>0.042</td>
<td>2</td>
<td>48</td>
<td>0.959</td>
<td>0.002</td>
</tr>
<tr>
<td>Experience</td>
<td>0.098</td>
<td>2.613</td>
<td>2</td>
<td>48</td>
<td>0.084</td>
<td>0.098</td>
</tr>
<tr>
<td>Between subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checklist use</td>
<td>0.296</td>
<td>10.105</td>
<td>2</td>
<td>48</td>
<td>0.000</td>
<td>0.296</td>
</tr>
<tr>
<td>Client type</td>
<td>0.011</td>
<td>0.275</td>
<td>2</td>
<td>48</td>
<td>0.761</td>
<td>0.011</td>
</tr>
<tr>
<td>Checklist use × Client type</td>
<td>0.170</td>
<td>4.902</td>
<td>2</td>
<td>48</td>
<td>0.012</td>
<td>0.170</td>
</tr>
</tbody>
</table>

Notes: n = 55.
Checklist use = whether the auditor completed a disclosure checklist before rating the acceptability of the proposed accounting treatments.
Client type = whether the auditor was hired by the company’s management board or by an audit committee of the company’s supervisory board.
This MANCOVA includes two DVs:
DV1 = The rated acceptability of the income decreasing accounting treatment in the first case (impairment of a patent) on an eleven-point Likert scale (Fully unacceptable – Fully acceptable).
DV2 = The rated acceptability of the income increasing accounting treatment in the second case (construction contract) on an eleven-point Likert scale (Fully unacceptable – Fully acceptable).
Table 4
Univariate (ANCOVA) results.

<table>
<thead>
<tr>
<th>DV</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F-value</th>
<th>2-tailed p-value</th>
<th>Partial η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>DV1</td>
<td>337.916</td>
<td>1</td>
<td>337.916</td>
<td>81.879</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>DV2</td>
<td>423.065</td>
<td>1</td>
<td>423.065</td>
<td>141.067</td>
<td>0.000</td>
</tr>
<tr>
<td>Covariates</td>
<td>Gender</td>
<td>DV1</td>
<td>0.187</td>
<td>1</td>
<td>0.187</td>
<td>0.045</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DV2</td>
<td>0.085</td>
<td>1</td>
<td>0.085</td>
<td>0.028</td>
</tr>
<tr>
<td></td>
<td>Experience</td>
<td>DV1</td>
<td>6.778</td>
<td>1</td>
<td>6.778</td>
<td>1.642</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DV2</td>
<td>8.835</td>
<td>1</td>
<td>8.835</td>
<td>2.946</td>
</tr>
<tr>
<td>Between subjects</td>
<td>Checklist use</td>
<td>DV1</td>
<td>52.887</td>
<td>1</td>
<td>52.887</td>
<td>12.815</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DV2</td>
<td>32.340</td>
<td>1</td>
<td>32.340</td>
<td>10.783</td>
</tr>
<tr>
<td></td>
<td>Client type</td>
<td>DV1</td>
<td>1.324</td>
<td>1</td>
<td>1.324</td>
<td>0.321</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DV2</td>
<td>0.966</td>
<td>1</td>
<td>0.966</td>
<td>0.322</td>
</tr>
<tr>
<td></td>
<td>Checklist use × Client type</td>
<td>DV1</td>
<td>22.899</td>
<td>1</td>
<td>22.899</td>
<td>5.549</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DV2</td>
<td>17.710</td>
<td>1</td>
<td>17.710</td>
<td>5.905</td>
</tr>
<tr>
<td>Error</td>
<td>DV1</td>
<td>202.223</td>
<td>49</td>
<td>4.127</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DV2</td>
<td>146.953</td>
<td>49</td>
<td>2.999</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: n = 55.
Checklist use = whether the auditor completed a disclosure checklist before rating the acceptability of the proposed accounting treatments.
Client type = whether the auditor was hired by the company’s management board or by an audit committee of the company’s supervisory board.
DV1 = The rated acceptability of the accounting treatment in the first case (impairment of a patent) on an eleven-point Likert scale (Fully unacceptable – Fully acceptable).
DV2 = The rated acceptability of the accounting treatment in the second case (construction contract) on an eleven-point Likert scale (Fully unacceptable – Fully acceptable).
### Table 5
Pairwise comparisons.

<table>
<thead>
<tr>
<th>Condition (i)</th>
<th>Condition (j)</th>
<th>Mean difference (i-j)</th>
<th>p-value</th>
</tr>
</thead>
</table>
| Checklist, Management as client<br>
*Mean*= 6.75             | No checklist, Management as client<br>
*Mean*= 3.73                     | 3.02*                  | 0.000   |
| Checklist, Audit committee as client<br>
*Mean*= 5.19             | No checklist, Audit committee as client<br>
*Mean*= 4.67                     | 1.56*                  | 0.006   |
| No checklist, Audit committee as client<br>
*Mean*= 4.67             | Checklist, Audit committee as client<br>
*Mean*= 5.19                     | 2.08*                  | 0.000   |
| No checklist, Management as client<br>
*Mean*= 3.73             | Checklist, Audit committee as client<br>
*Mean*= 5.19                     | -1.46*                 | 0.010   |
| No checklist, Audit committee as client<br>
*Mean*= 4.67             | No checklist, Audit committee as client<br>
*Mean*= 4.67                     | -0.94                  | 0.083   |
| Checklist, Audit committee as client<br>
*Mean*= 5.19             | No checklist, Audit committee as client<br>
*Mean*= 4.67                     | -0.53                  | 0.326   |

*Notes: n = 55. *p < 0.05.*
The means are compared using LSD analysis.
The analysis is based on DVmean, which represents the average rated acceptability of the income decreasing accounting treatment in the first case (impairment of a patent) and the income increasing accounting treatment in the second case (construction contract), on an eleven-point Likert scale (*Fully unacceptable – Fully acceptable*).
### Table 6

Exit questionnaire items.

<table>
<thead>
<tr>
<th>Item</th>
<th>No checklist Management as client</th>
<th>No checklist Audit committee as client</th>
<th>Checklist Management as client</th>
<th>Checklist Audit committee as client</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>(1) I felt able to make an objective, balanced judgment of A&amp;C IND’s FY 2010 accounting…</td>
<td>4.92 (1.71)</td>
<td>4.73 (1.39)</td>
<td>4.43 (1.40)</td>
<td>4.31 (1.75)</td>
</tr>
<tr>
<td>(2) I felt comfortable with my judgment concerning the acceptability of A&amp;C IND’s FY2010 accounting…………………………………………………………………………………………</td>
<td>5.00 (1.08)</td>
<td>5.00 (1.46)</td>
<td>4.29 (1.54)</td>
<td>4.85 (1.28)</td>
</tr>
<tr>
<td>(3) I looked very critically at A&amp;C IND’s FY2010 accounting………………………………………</td>
<td>5.38 (1.19)</td>
<td>5.33 (1.29)</td>
<td>5.36 (1.34)</td>
<td>4.77 (1.69)</td>
</tr>
<tr>
<td>(4) I gave some thought to which party appointed and remunerated me while judging the acceptability of A&amp;C IND's FY2010 accounting………………………………………………………………………………………………</td>
<td>2.23b (1.96)</td>
<td>4.00a (1.85)</td>
<td>2.71 (1.94)</td>
<td>3.07 (1.89)</td>
</tr>
<tr>
<td>(5) I used a structured approach to judge the acceptability of A&amp;C IND's FY2010 accounting…</td>
<td>5.31 (1.11)</td>
<td>5.73a (1.03)</td>
<td>5.21 (1.37)</td>
<td>4.62b (1.26)</td>
</tr>
<tr>
<td>(6) I considered A&amp;C IND’s FY2010 accounting to be slightly aggressive…………………………</td>
<td>4.85 (1.82)</td>
<td>5.00 (1.25)</td>
<td>4.57 (1.22)</td>
<td>5.16 (1.63)</td>
</tr>
<tr>
<td>(7) In my opinion, A&amp;C IND's FY2010 accounting was ethical…………………………………………</td>
<td>3.38b (1.33)</td>
<td>4.30a (1.03)</td>
<td>4.14 (0.95)</td>
<td>4.00 (1.35)</td>
</tr>
</tbody>
</table>

**Notes:**
- All items scored on a 7-point Likert scale (*totally disagree – totally agree*).
- The means are compared using LSD post-hoc analysis. Within each row, means with superscript a are significantly higher than means with superscript b (two-tailed $p < 0.05$).
- See notes Table 2 for a description of the experimental conditions.
Fig. 1. Dependent variable scores per treatment condition. See the notes to Table 2 for a description of the experimental conditions and the dependent variables.
Fig. 2. Univariate results for DV1. See the notes to Table 2 for a description of the experimental conditions and the dependent variable.
Fig. 3. Univariate results for DV2. See the notes to Table 2 for a description of the experimental conditions and the dependent variable.