Journal of Business Ethics (2009) 87:237–253
DOI 10.1007/s10551-008-9882-1

The Strength of an Accounting Firm's Ethical Environment and the Quality of Auditors' Judgments

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ABSTRACT. This study examines the impact of the strength of an accounting firm's ethical environment (presence and reinforcement vis-à-vis the presence of a code of conduct) on the quality of auditor judgment, across different levels of audit expertise. Using a 2 × 2 full factorial 'between subjects' experimental design, with audit managers and audit seniors, the impact of different levels of strength of the ethical environment on auditor judgments was assessed with a realistic audit scenario, requiring participants to make judgments in respect of an inventory writedown. Based on prior research, and as hypothesized, participants possessing greater auditing experience made higher quality technical judgments. While there were no significant differences between the quality of audit judgments made by participants in the stronger ethical environment, over-all results indicate that managers are more sensitive to differences in the strength of the ethical environment than seniors. This is consistent with the hypothesis, and with prior research which suggests that the impact of the code will only be significant if it has been bilaterally internalized by individuals. This has important implications for accounting firms and regulators, given that the International Standard on Quality Control 1, requires the communication and reinforcement of ethical principles as part of firms' quality control processes. It suggests that firms will need to carefully consider the means by which they communicate and reinforce ethical principles, as it is possible to differentially impact auditors of different rank.

KEY WORDS: auditor experience, audit judgment, code of conduct, ethical environment, quality controls

ABBREVIATIONS: AASB: Australian Accounting Standards Board; APES: Accounting and Professional Ethical Standard; APESB: The Accounting Professional and Ethical Standards Board; AQRB: Audit Quality Review Board Limited; ASA: Australian Auditing Standard; CPA: Certified Practising Accountant; IAASB: International Auditing and Assurance Standards Board; ICAC: Independent Commission Against Corruption (1998) of New South Wales, Australia; IFAC: International Federation of Accountants; ISA: International Standard on Auditing

Introduction

The current experimental study examines the impact of the strength of an accounting firm's ethical environment (presence and reinforcement vis-à-vis merely the presence of a firm's code of conduct) on the quality of auditor judgment, across different levels of expertise (audit seniors and audit managers).

High profile corporate collapses, such as Enron and WorldCom, have brought into question the status and credibility of the accounting profession, and highlighted the point that auditors need to be technical and ethical experts when auditing financial reports (Gaa, 1994). In order to restore public confidence in the profession, regulators have embarked on a number of measures, including the introduction of new quality control standards [e.g., International Standard on Quality Control 1 (ISQC1) *Quality Control for Firms that Perform Audits and Reviews of Historical Financial Information, and Other Assurance and Related Services Engagements*] for accounting firms, which prescribe both ethical and technical requirements. ISQC1 [and its Australian equivalent Australian and Professional Ethics Standard (APES) 320 *Quality Control for Firms*] aims to help firms to establish a system of quality control for audits and reviews of historical financial information and other assurance engagements. The standard applies to all members of the International

Federation of Accountants (IFAC) and requires all firms to have appropriate policies and processes in place.

The purpose of the standard is to ensure the firms' human resources are both technically and ethically competent in order to improve auditor performance and audit quality through a number of control elements, including a requirement for a firm to "establish policies and procedures designed to provide it with Reasonable Assurance that the Firm and its Personnel comply with relevant ethical requirements" (ISQC1, para. 14; APES 320, para. 14). APES 320 and ISQC1 require that such quality control policies and procedures emphasize fundamental ethical principles and reinforce these principles through education, training, monitoring, and other procedures. The requirements for compliance with the ethical principles are further reinforced at an individual audit engagement level by auditing standards, such as International Standard on Auditing (ISA) 220 *Quality Control for Audits of Historical Financial Information* and its equivalent Australian Auditing Standard (ASA) 220.

Given the potentially significant effort and financial burden upon firms to comply with ISQC1/APES 320 requirements, there is a need for timely research on the impact of this standard. This study aims to investigate the impact of one aspect of the ethical environment (i.e., the code of conduct[1]), within the context of ISQC1/APES 320, on the quality of auditors' judgments.

The small number of relevant studies to date (Booth and Schulz, 2004; Pflugrath et al., 2007) suggest support for ISQC1's recommendations, by finding that a strong ethical environment has a significant positive impact on quality of decision-making and judgments. The firm's code of conduct (the code) is chosen as the proxy for the ethical environment as most accounting firms have operationalized the mandatory ethical requirements of ISQC1 through the use of formal codes. Moreover, previous studies on codes of conduct have determined that the codes can affect auditors' ethical judgment (Herron and Gilbertson, 2004; Jones et al., 2003), and overall audit judgment (Pflugrath et al., 2007). However, no study has examined the differential impact of a stronger ethical environment (presence and reinforcement of the code) required under APES 320 and ISQC1, as compared to a weaker ethical environment (presence only of the code) within an audit judgment context.

In order to examine the impact of different strength of the ethical environment on auditor judgments, a realistic case study scenario was utilized, requiring participants (audit seniors and audit managers) to make judgments under controlled experimental conditions in respect of an inventory writedown. The quality of these judgments is assessed in terms of a number of measures. Based on prior research (Anderson and Maletta, 1994; Anderson et al., 1994), and as hypothesized, participants possessing greater auditing experience made higher quality technical judgments. There were no significant differences between the quality of the audit judgments (i.e., more appropriate writedown amounts and less susceptibility to the client's preferences) made by participants in the stronger ethical environment represented by the reinforcement of a firm's code than those who are merely in the presence of a code (i.e., weaker ethical environment). However, the results of the interaction between auditing experience (auditor rank) and the strength of the ethical environment suggests that managers are more sensitive to differences in the strength of the ethical environment than seniors, which is consistent with prior research (Noreen, 1988; Siegel et al., 1995; Wotruba et al., 2001).

Literature and hypotheses development

The quality of an audit is the product of individual auditor judgments and is thus affected by auditor competency (Watkins et al., 2004). Following the same approach as Pflugrath et al. (2007), auditor competency (equivalent to auditor expertise) is defined by the degree to which an auditor can comply with the professional standards (i.e., auditing standards and the profession's code of ethics). The International Auditing and Assurance Standards Board (IAASB) has recognized the impact of both technical and ethical dimensions of auditor competency on audit quality by prescribing both ethical and technical requirements in ISQC1. Pflugrath et al. (2007) provide support for this expanded definition of auditor competency, finding auditor judgments to be influenced by both technical and non-technical (i.e., ethical) considerations.

Strength of the ethical environment

Libby and Luft (1993) suggest that the audit environment is a determinant of decision-making performance. The ethical environment is a subset of the audit environment and provides a specific context for auditors to operate in and within which to make decisions (Booth and Schulz, 2004). According to Libby and Luft (1993), a stronger ethical environment could either impose additional guidelines by which the auditors must abide, so that their judgments are based on technical and ethical considerations or alternatively, a stronger ethical environment may increase the effort auditors are willing to expend on judgment-making due to concerns, such as accountability, risk, and penalties. ICAC[2] (1998) quoting Chen et al. (1997, p. 856) also suggests that the "…ability to see and respond ethically may be related more to attributes of corporate culture than to attributes of individual employees." Similarly, Arnold et al. (1999, 2000) argue that organizations can foster an 'epidemic of ethical behavior' and promote greater levels of ethical decision making.

The ethical environment is thought to be composed of a number of factors and accounting research to date has analyzed these individually and in various combinations. To date, only Booth and Schulz (2004) have conducted an experimental study investigating the combined effect of these factors on accounting judgments. They varied the strength of the ethical environment between strong and weak by providing different types of information on six of eight environmental factors considered by the ICAC (1998)[3]. The study found that a stronger ethical environment had a direct positive effect on a management accountant's project evaluation judgments, with these managers making decisions more aligned with the interests of their organizations under both the presence and absence of agency problem conditions.

More specifically, a number of studies have found codes to have a positive effect on individual ethical decision-making processes and judgments. Codes of conduct have been a common proxy for the ethical environment in accounting and auditing literature, because organizations, including accounting firms, and their employees consider them to be relevant and important (Lamberton et al., 2005; Martinov, 2004) in making ethical values explicit, putting employees on notice as to what is ethical, and shifting accountability for actions from firms to individuals.

Brief et al. (1996) conducted an experimental study to investigate the effect of the presence (vis-à-vis absence) of a firm's code on the frequency of fraudulent financial reporting by executives and financial controllers and found no significant results. The lack of a positive relationship between the presence of a code and individual ethical behavior is also reported by Laczniak and Inderrieden (1987) and Cleek and Leonard (1998). In Laczniak and Inderrieden (1987), the presence and reinforcement of a firm's code was found to have little impact on the behavior of managers. The behavior of managers only improved significantly for the strongest organizational concern treatment (presence and reinforcement of, and specific sanctions included in a code) in the context of an unethical action which would also be illegal. Cleek and Leonard (1998) manipulated the presence (vis-à-vis absence) of a code by providing students with a letter from the company informing the students about the existence of a code and a copy (no copy) of the code. The study found no significant difference in judgment performance between the two groups. However this study deliberately selected a non-specific code, which might have reduced the usefulness of the code to the subjects.

In contrast, there are studies that suggest the presence of a code has a positive impact on ethical behavior. Adams et al. (1995) surveyed Certified Practising Accountants (CPAs) on their personal beliefs and ethical actions for three confidentiality scenarios. The majority of the CPAs followed the professional code, even when the professional code might not reflect their own personal beliefs. Similarly, Karcher (1996) and Barnett and Vaicys (2000) studies found that participants were more likely to be aware of ethical issues and engage in ethical behavior when there is an organizational code. In a manner similar to Brief et al. (1996), Pflugrath et al. (2007) conducted an experimental study investigating the impact of the presence (vis-à-vis absence) of a code within an audit context. The study found that the mere presence of a code had a positive impact on the judgment performance of professional accountants, including auditors.

Given the paucity of auditing research to date on the effect of the strength of the ethical environment on auditor decision making, this study aims to extend Pflugrath et al. (2007) by examining the impact

of the mere presence versus the presence and reinforcement of a code (i.e., requiring participants to sign a declaration that they have read the code and agree to abide by the code) on auditor judgment quality, across different levels of auditing rank (seniors and managers). The reinforcement of ethical principles is a current requirement of APES 320 and ISQC1. Prior research (Kiesler, 1971; Wiener, 1982) supports the notion of reinforcement by suggesting that reinforcement will lead to greater organizational commitment, and the making of judgments that are consistent with organizational goals (i.e., compliance with ethical requirements).

Psychological studies (Charters and Newcomb, 1958; Kelley, 1955; Kiesler, 1971) find that increased salience of a condition, as a result of a reminder of accepted behavior or attitude (e.g., compliance with code of ethics), results in less acceptance and greater resistance to unacceptable behavior. Studies within a business environment context (Schwartz, 2004) similarly find that without constant reinforcement, the organizational code of ethics would only have a minimal impact on employee behavior. It is suggested that "(r)einforcement appears to allow employees to perceive the seriousness and importance a company places on compliance with the code" (Schwartz, 2004, p. 334). Within the audit firm context, annual, and ongoing declarations (e.g., independence) are an accepted way of operationalizing continuing reinforcement of employees' compliance (AQRB, 2008). Discussions with the audit firm involved in the study indicate that the firm has recently implemented an "independence" and "compliance with ethical principles" sign-off on individual audit engagements, by each audit team member as part of quality control. The use of reinforcement in each of these studies and in practice is aimed at enhancing the effectiveness of the code of ethics (i.e., strengthening the ethical environment) to promote more ethical behavior (Schwartz, 2004).

Based on the preceding discussion, it is expected that the overall quality of auditors' judgments will improve as the strength of ethical environment increases.

H1: Auditors in the stronger ethical environment (the presence and reinforcement of a code) will elicit higher quality overall judgments than auditors in the weaker ethical environment (presence only of a code).

Technical competency (auditing experience)

Technical competency represents an individual ability and is considered to be an important determinant of auditor judgment quality. Based on research to date, the common proxies for technical competency are experience (general and task-specific) and knowledge. Depending on the type of audit task, the degree to which auditing experience and knowledge will assist in decision-making will vary (Abdolmohammadi and Wright, 1987; Bonner and Lewis, 1990; Libby and Tan, 1994; Lin et al., 2003; Shelton, 1999).

General auditing experience has been found to be positively related to auditors' judgment performance when the audit task requires exercise of individual judgment. For low-complexity tasks with well-defined routine solutions (i.e., structured tasks) auditors need only to exercise minimal judgment. Thus in Ashton and Kramer (1980), auditors only performed a little better than auditing students in an internal control judgment task. However, for more complex tasks requiring greater exercise of judgment (i.e., semi-structured and unstructured tasks), general auditing experience can improve performance by providing the necessary skills and/or knowledge required to complete these tasks (Anderson and Maletta, 1994; Anderson et al., 1994). In Krogstad et al. (1984), auditors were found to have higher levels of consistency and consensus in judgments than auditing students, and more experienced auditors showed more consensus and consistency than inexperienced auditors. Similarly in Biggs et al. (1988), audit managers had a better understanding of problems than the audit seniors in an analytical review task, and were more selective and better in responding to identified problems.

Furthermore, task-specific experience has been shown to be able to provide additional improvement in the quality of auditors' judgments for semi-structured and unstructured tasks (Bonner and Lewis, 1990; Libby and Tan, 1994; O'Reilly et al., 2004; Pincus, 1991; Wright, 2001). Studies to date have also found that task-specific experience is conditional upon the general audit experience level, with senior auditors more capable of identifying mechanical errors while audit managers are better at identifying conceptual errors (Ramsay, 1994).

This is due to their different task experiences, which demand different technical skills and knowledge.

The task used in this study follows that of Pflugrath et al. (2007) and is a semi-structured task. Based on research to date, it is expected that participants who have greater levels of auditing experience will produce higher quality judgments. The nature of the semi-structured task (inventory valuation) was specifically chosen to ensure that auditors participating in the study (seniors and managers) were able to complete the task competently. Therefore, in this study, technical competency has been operationalized as general auditing experience (proxied by auditor rank and measured in terms of years of experience). Task-specific experience was also measured to provide further insights into possible reasons for any significant differences. In summary, it is posited that greater auditing experience will impact positively upon the quality of auditor's judgments.

H2: More experienced auditors (audit managers) will elicit higher quality technical judgments than less experienced auditors (audit seniors).

Interaction between the strength of the ethical environment and auditing experience

Psychology literature indicates that the degree of commitment increases by "increasing the number of acts performed by the subject" (Kiesler, 1971, p. 33). Such reinforcement can be either repetitive or separate behaviors that are closely connected (i.e., reading the code, and signing a declaration acknowledging the code). The impact of such reinforcement is assumed to be "additive" (Kiesler, 1971, p. 33) and hence reinforcement as operationalized in this study is expected to increase salience of the reinforced item (i.e., the code). Given the additive nature of the reinforcement, the impact in terms of increasing salience of the code is expected to be greater for more experienced auditors as their total number of repetitive and/or separate behaviors dealing with the code is likely to be greater than that of less experienced auditors.

Within the auditing context Libby and Luft (1993) suggest that a stronger ethical environment imposes additional guidelines by which the auditors must abide, so that their judgments are based on technical and ethical considerations. This argument assumes that auditors' ethical awareness will have an important impact on their judgments. An individual's ethical awareness is an important factor in the cognitive process of decision-making because it is related to his/her ability to recognize the existence of an ethical issue. Karcher (1996) investigated the ethical sensitivity of auditors in Big 6 firms. The study found that auditors were more sensitive to two ethical scenarios covered by the professional code of conduct than an ethical issue that was not discussed by the code. The study also found that age with employment position was positively related to auditors' awareness of ethical issues. Larkin (2000) reported similar results for internal auditing, finding internal auditors with 5 years or more of experience significantly better at identifying unethical scenarios than auditors with less than 5 years of experience.

Wotruba et al. (2001) and Noreen (1988) suggest that the impact of an ethical code of conduct will be significant only if the code has been bilaterally internalized by individuals, either consciously or subconsciously. Pflugrath et al. (2007) provides support for Wotruba et al.'s (2001) proposal, reporting a positive relationship between the strength of the ethical environment (absence vis-à-vis the presence of a code) and ethical judgments in professional accountants exposed to codes of conduct within their organizational environment, but not in student participants whose familiarity with actual organizational context is none or very limited.

H3: A stronger ethical environment (the presence and reinforcement of a code) will have greater impact on the judgments of more experienced auditors (audit managers) than less experienced auditors (audit seniors).

The impact of accountability pressure

Accountability is important in the auditing environment because an auditor is required to document, justify, and be responsible for his or her decisions (Ashton et al., 1989). Given the different ranks of the participants in this study, whereby senior auditors

generally report to audit managers, it is important to ensure that accountability pressure, rather than the manipulated independent variables, is not driving the decisions made by senior auditors. Therefore, the potential impact of accountability pressure on senior auditors' judgments is also measured.

Schlenker (1997) defines accountability as being answerable to audiences for performing up to prescribed standards that are relevant to fulfill obligations, duties, and expectations. In the audit context, the documentation and justification of judgments is a prerequisite for the performance of the necessary review processes under the quality control requirements and as mandated by the auditing standards. Thus, accountability is critical in the context of evaluating auditors' performance in terms of their quality of judgments on individual tasks and/or overall audit engagements which in turn is a key determinant of their career progression.

Accounting studies to date have found that when accountability pressure exists, auditors tend to tailor their message to their audience when the audience is known (Buchman et al., 1996; Cuccia et al., 1995; Hackenbrack and Nelson, 1996). If the specific audience is unknown, then auditors have provided more thorough justifications for their decisions compared to auditors who are not accountable to an audience (Koonce et al., 1995). Moreover, as accountability pressure increases, auditors' judgment variability decreases (Ashton, 1992; DeZoort et al., 2006), judgment conservatism increases (DeZoort et al., 2006; Hoffman and Patton, 1997), and effort exerted in the decision-making process increases (Koonce et al., 1995; Tan, 1995).

According to Beu and Buckley (2001), in accountability situations, the individual understands that his/her actions will be compared to some standard by the evaluator. However, many situations that arise in audit practice have a degree of ambiguity and are subject to auditors' professional judgment (e.g., appropriate inventory writedown) with no definitive correct standard for evaluation purposes. Consensus has traditionally taken on the role of a proxy for a standard for evaluative purposes and consensus between auditors continues to be the most commonly used measure of decision quality in studies of auditor judgment.

Based on the literature to date it is expected that seniors' judgments will conform to the expectations of the managers, to whom they are accountable.

H4: Subordinate auditors' (audit seniors) judgments will conform to the expected judgments of their superiors (audit managers).

However, implicit in the accountability pressure impact on auditor judgments and a high level of consensus of the judgments is an underlying assumption that subordinates' expectations of their superiors' judgments are aligned with the actual judgments made by those superiors. Given that auditors work in teams and continually observe, and take into account, the judgments of their fellow team members, the following hypothesis is posited.

H5: Subordinate auditors' (audit seniors) expected judgments of their superiors will be well aligned with the actual judgments of their superiors (audit managers).

Methodology

The hypotheses (H1–H5) were tested by utilizing a 2×2 full factorial 'between-subjects' design, giving rise to four experimental cells. The two independent variables under examination were: (i) auditing experience of the subjects (audit seniors or audit managers) and (ii) the strength of the ethical environment (presence only or presence and reinforcement of a code).

Participants

Participants were 44 audit seniors and 42 audit managers from one of the 'Big 4' accounting firms in Sydney and Melbourne offices (86 in total) who were randomly allocated to experimental cells. The final sample of 86 auditors includes only those who passed the manipulation check. The use of different ranks of auditor in behavioral judgment decision-making research in auditing is well-established and has been found to be positively related to judgment performance, especially where the judgments which are being made relate to semi-structured and unstructured tasks (Anderson and Maletta, 1994; Anderson and Wright, 1988; Bonner and Lewis, 1990), such as the task being used in this study.

The average general audit experience for the seniors and managers participating in the current

TABLE I

Descriptive statistics for participants' technical competency

Experience[a]	Audit managers	Audit seniors	Total
General auditing experience (years)★	7.80 (2.486; 0–13[b]; 35)	3.97 (1.272; 2–8; 39)	5.78 (2.724; 0–13; 74)
Inventory writedown task-specific experience[c]	2.07 (1.659; 0–4; 42)	1.60 (1.330; 0–4; 43)	1.84 (1.511; 0–4; 85)

[a]Not all participants answered all demographic questions; however, all participants indicated whether they were a manager or a senior. Also, the training sessions in which the experiment was conducted were separate sessions for managers and seniors. Therefore, there is no uncertainty about the relevant audit rank of the participants.
[b]One manager worked in a technical position, rather than a practical auditing role, and therefore has zero years of general auditing experience. The results of the study remain unchanged whether or not this participant is included.
[c]The response was measured by categories: '0' = nil experience; '1' = Dealt with 1–3 times; '2' = Dealt with 4–6 times; '3' = Dealt with 7–9 times; and '4' = Dealt with 10 or more times.
Values are expressed as Mean (SD; range; *n*). "★" denotes significant difference ($p = 0.000$) at the 5% level.

study was 3.97 years and 7.80 years, respectively. As could be expected, managers had on average significantly more general auditing experience than seniors ($p = 0.000$). On average, participants had task-specific experience, and had dealt with an inventory writedown task more than once. All participants were volunteers and no incentives were given (Table I).

Research instrument

The research instrument involves a specific audit scenario that deals with a potential material writedown of inventory. As such, it is reflective of the business environment of public accounting, as well as being a realistic scenario that would typically involve both audit seniors and managers, on an engagement of this type. The writedown of inventory has been identified in previous research as being judgment based (e.g., Reckers and Wong-On-Wing, 1991) and suitable for examining differences between various levels of auditing experience. The audit scenario has been adapted from the 'Babyboomers Inc' case (Cohen and Trompeter, 1997), and tailored by Martinov (2004) and Pflugrath et al. (2007) for the Australian auditing context.

The case material consists of a background description of the client, including key financial information, details of an audit issue involving potential material writedown of inventory, and two proposals for the treatment of this inventory, which had been discussed with the client. The background information also included audit materiality of $2.5 million to ensure consistent interpretation of the materiality of the potential writedown adjustment by participants. All writedown adjustments based on the two proposals (other than the client's current aggressive treatment of nil writedown) are material.

Pilot testing

The research instrument was tested and reviewed by 10 audit practitioners and accounting academics. All seven practitioners (three managers and four seniors) are either currently managing audit engagements or have only recently left their respective audit firm. The accounting academics included an ex-audit senior manager with more than 12 years of experience in a Big 4 firm. The manager practitioners' judgment consensus of the appropriate writedown amount of $5 million (i.e., expert consensus) was consistent with the consensus view of three practitioners (technical directors/consultants in their respective organizations) who pilot tested a similar instrument in a previous study (Pflugrath et al., 2007). This amount was therefore utilized as a proxy for the 'correct' (i.e., high quality technical) judgment.

Additional questions were asked to elicit responses as to the realistic nature and relevance of the background information and clarity of the instructions and the questionnaire. They were also asked to indicate what aspect of audit judgment the experiment was trying to evaluate; none of the participants considered the code of conduct, quality controls, or ethical judgment to be the subject of this study, thus

providing evidence that the participants were unlikely to be sensitized to the purpose of the study.

Independent variables

The two independent variables examined in this study are: (a) the strength of ethical environment (i.e., presence only or presence and reinforcement of the code) and (b) auditing experience (audit seniors or audit managers).

The strength of ethical environment was manipulated as follows. A memorandum advising of the firm's revised code, together with a copy of the relevant part of the code, was included in materials provided to all participants; however for those in the 'presence and reinforcement' cells, a 'Declaration' section was also included at the bottom of the memorandum requiring a signature acknowledging that the code has been read and that the auditor agrees to abide by the code. The code used was based upon APES 110[4] *Code of Ethics for Professional Accountants*. The participants' auditing experience is operationalized at first by audit rank (seniors or managers) and is also measured by the length of the auditing experience (years).

Several additional variables were also measured. First, participants' task-specific experience with inventory writedown (i.e., a number of times they have been exposed to an inventory obsolescence task), was measured in order to assess whether differences in the specific technical knowledge pertaining to the task, impacted upon the judgments being made. Accountability pressure was also measured using a series of questions requiring participants' judgments. Previous research has shown that when accountability pressure exists, auditors tend to tailor their message to an audience which is known (Buchman et al., 1996; Cuccia et al., 1995; Hackenbrack and Nelson, 1996). Given the rank of the participants in this study, whereby the audit seniors are generally accountable to auditor managers, it was important to measure the impact of this variable as a potential explanation for the audit seniors' judgments.

Dependent variables

In order to determine the quality of auditors' judgment, three key-dependent variables are used. The first variable measures the quality of participants' technical judgments as a difference between the amount that the participants deemed to be technically appropriate ('appropriate') and the experts' consensus opinion of the technically appropriate writedown of $5 million (*expert difference*). Given the nature of the semi-structured task and absence of 'correct' answers, the experts' consensus is used as a measure of the auditor's decision quality. Thus, the higher quality technical judgments will be closer to $5 million and the difference will be greater as the quality of the technical judgment decreases.

The second variable measures the overall quality of the judgment, which includes both technical and ethical dimensions. It is the likelihood that the participant would bring the inventory writedown issue to the supervisor's (for senior auditors) or client's (for audit managers) attention (*likelihood*, measured on a 7-point Likert scale, ranging from 1 = 'highly unlikely' to 7 = 'highly likely'). Technically competent auditors would realize from the given financial information that the minimal adjustment required ($2.6 million) was beyond the materiality threshold ($2.5 million), has potential material impact on the financial statements, and would therefore bring this issue to the attention of their manager or client.

The third variable (*difference*, ranging from '$0 million' to plus or minus '$15 million') measures the difference between the inventory writedown amount that the participant believes to be technically appropriate ('appropriate') under the Australian Accounting Standard (AASB) 102 *Inventories*, and the amount that the participant would recommend ('recommended') to the manager (for seniors) or client (for managers) in light of the client's preference for nil writedown. According to expert consensus opinion there should be no difference between the technically 'appropriate' and 'recommended' adjustment amounts. Indeed, an indication of reduced audit quality, according to DeAngelo's (1981) definition, would be evident where the 'recommended' adjustment is less than what the participant believed was technically appropriate.

Procedure

This experiment used an 'in-basket' approach similar to that employed by Brief et al. (1996), who

examined the impact that a code has on fraudulent reporting in a managerial context. Each of the two types of participants (audit managers and audit seniors) were randomly assigned to one of the two relevant conditions (presence only or presence and reinforcement of the code) and given a package containing a set of instructions, two envelopes, case material, and a questionnaire with two separate parts. The instructions asked participants to assume the role of an auditor who was about to go on leave, and advised that prior to go on leave, an audit on which they are currently working would be signed off (i.e., Fashionman Pty Ltd). They were instructed to go through their in-tray in the short amount of time they had before their departure.

The in-tray consisted of several documents: the 'Fashionman Pty Ltd' audit scenario; a brief one page memorandum advising of the firm's revised Code of Conduct with a copy of the relevant part of the revised code, and a filler item (an expenses reimbursement form), which was used to create a sense of realism and to disguise the experimental manipulations (Connelly et al., 2004; Ueker et al., 1981). There was no specific requirement to deal with any item except for the 'Fashionman Pty Ltd' audit issue, to which a number of specific judgments were related. Participants therefore had the choice of whether to address the other items in the in-tray, thus aiming to heighten the realism of the study.

In practice, auditors are often faced with time deadline pressure (Kelley et al., 1999; Solomon and Brown, 1992); therefore to mimic this pressure and enhance realism, all participants were informed that the tasks should take no more than 15–20 min of their time. This was to create a realistic urgency for the completion of the tasks, with subjects required to balance the need for competent completion of tasks and the upcoming leave. The majority of the participants did complete the task in the allocated time.

The research instrument was administered under controlled conditions in the presence of the researchers during the firm's training and comprised two parts. Part 1 contained the 'Fashionman Pty Ltd' audit scenario, the memorandum with the revised code and the filler item, and a series of questions eliciting participants' judgments for the dependent variables. Following the completion of this part, the materials were sealed in an envelope which was strictly enforced by the researchers. Participants then proceeded to Part 2, which elicited demographic information, including their general and task-specific auditing experiences, and a manipulation check. Also, to capture potential accountability pressure impact, questions were asked to elicit participants' views about how they perceived that their colleagues (superiors, peers, and subordinates as appropriate) would behave when dealing with a situation similar to this inventory writedown issue.

Results

The five hypotheses (H1–H5) are discussed in terms of the applicable dependent variable(s). That is, for tests of overall judgment quality (taking into account both technical and ethical dimensions), the absolute value of the *difference* is examined for H1 and H3. Using the absolute value of the *difference* is consistent with prior research in this area (Pflugrath et al., 2007) and the use of the materiality concept in guiding auditors' determination of potential adjustments. The likelihood of raising the inventory writedown with either the manager (or client) (*likelihood*) is also examined for H1. The *expert difference* is utilized for the analysis of the technical dimension of the judgments as per H2 and H3. For H4 and H5, analysis requires examination of the differences between actual judgments made by the participants and their expectations of others. Furthermore, the analysis is undertaken by utilizing two measures of audit experience, namely: auditor rank (manager and senior); and the number of years of general auditing experience (higher and lower levels, divided into two groups at the mean). The following examines the results for each hypothesis separately.

H1: Strength of the ethical environment and the quality of auditors' judgments

Results of ANOVA show no significant main effect for the strength of the ethical environment for either rank ($F = 0.139$, $p = 0.710$) or general auditing experience ($F = 0.262$, $p = 0.610$), in respect to whether auditors are likely to raise the inventory writedown issue (*likelihood*), with either their managers (for seniors) or the client (for managers). Although, H1 is not supported, it is encouraging

that all participants indicated that they were highly likely to refer the matter for further discussion (overall mean = 6.67; on a 7-point scale where '1 = highly unlikely' and '7 = highly likely'; Table II).

ANOVA analysis of the second measure of the quality of the overall auditor judgment, the *difference*, which according to expert consensus should be zero, shows no significant main effect for the presence and reinforcement of a code ($F = 2.510$, $p = 0.117$), vis-à-vis the presence only of the code. Furthermore, participants in the presence and reinforcement of the code (mean = 1.05) reported a larger *difference* than those participants in the presence of a code only (mean = 0.31). This result is driven largely by one cell (managers in the presence and reinforcement of the code), and is discussed later (refer discussion of H3). The difference between the 'higher' general experience, and 'lower' general experience for the *difference* is close to being marginally significant ($F = 2.761$, $p = 0.101$). Thus, overall no support is provided for H1 (Table III).

H2: Audit experience and the quality of auditors' technical judgments

The dependent variable *expert difference*, focuses solely on the technical aspect of the auditor judgment. Clearly, the smaller the difference between the participants' judgments and the expert consensus of $5 million (i.e., the smaller the *expert difference*), the higher the quality of the technical judgment.

Results of ANOVA show that there is a significant main effect for auditor rank ($F = 4.838$, $p = 0.031$). Managers' responses indicate a significantly higher quality of judgment, in terms of providing much smaller differences (mean = 5.40), than seniors (mean = 7.09). This provides support for H2 (Table IV).

TABLE II

'*Likelihood*' of discussing the issue; (What is the likelihood of the auditor discussing this issue with the supervisor before going on leave?; *highly unlikely = 0; highly likely = 7*)

Ethical environment	Level of auditing position [Mean (SD; *n*)]		
	Audit managers	Audit seniors	Total
Panel A: Descriptive statistics			
Presence of code	6.71 (0.451; 19)	6.59 (0.718; 23)	6.64 (0.608; 42)
Presence and reinforcement of code	6.72 (0.422; 23)	6.67 (0.483; 21)	6.69 (0.447; 44)
Total	6.71 (0.430; 42)	6.63 (0.611; 44)	6.67 (0.529; 86)

Source of variation	Sum of squares	df	*F*	*p-value*
Panel B: ANOVA results				
CODE	0.040	1	0.139	0.710
RANK	0.162	1	0.565	0.455
RANK*CODE	0.028	1	0.099	0.754
CODE	0.076	1	0.262	0.610
GEN_EXP	0.338	1	1.164	0.284
GEN_EXP*CODE	0.588	1	2.027	0.159

RANK = subjects' auditing rank, either an audit manager or audit senior; GEN_EXP = subjects' length of general auditing experience ('higher' and 'lower'); CODE = the presence vis-à-vis presence and reinforcement of a code of conduct.

$R^2 = 0.010$.

TABLE III

Absolute value of the *difference* between inventory writedown believed to be technically appropriate (appropriate) and amount of writedown recommended (recommended); (recommended inventory writedown *less* technically appropriate inventory writedown; *no difference = 0; maximum possible absolute difference in suggested amount = 15*)

Ethical environment	Level of auditing position [Mean (SD; *n*)]		
	Audit managers	Audit seniors	Total
Panel A: Descriptive statistics			
Presence of code	0.34 (1.001; 19)	0.28 (1.070; 23)	0.31 (1.027; 42)
Presence and reinforcement of code	1.91 (3.682; 23)	0.11 (0.441; 21)	1.05 (2.803; 44)
Total	1.20 (2.888; 42)	0.20 (0.826; 44)	0.69 (2.150; 86)

Source of variation	Sum of squares	df	*F*	*p-value*
Panel B: ANOVA results				
CODE	10.574	1	2.510	0.117
RANK	18.532	1	4.399	0.039★
RANK★CODE	16.078	1	3.817	0.054★★
CODE	12.727	1	2.761	0.101
GEN_EXP	18.694	1	4.056	0.048★
GEN_EXP★CODE	30.054	1	6.520	0.013★

	Value of contrast	df	*t*	*p-value*
Panel C: Contrast analysis – Contrast of 'Managers in Presence and Reinforcement of Code' with other three cells				
Assume equal variance	−5.00	82	−3.334	0.001★

RANK = subjects' auditing rank, either an audit manager or audit senior; GEN_EXP = subjects' length of general auditing experience ('higher' and 'lower'); CODE = the presence vis-à-vis presence and reinforcement of a code of conduct.
★Significant at the 5% level.
★★Significant at the 10% level.
R^2 = 0.121.

When the sample is split into 'higher' and 'lower' levels of 'task-specific experience,' those with greater task-specific experience (mean = 5.18) provide significantly higher quality technical judgments than those with lower levels of task-specific experience (mean = 7.24) (F = 7.102, p = 0.009). This is consistent with prior research (Bonner and Lewis, 1990; Libby and Tan, 1994; O'Reilly et al., 2004; Pincus, 1991; Wright, 2001) and provides further support for H2.

It is worth noting that in terms of the quality of the overall judgment, the *difference* is significantly greater for audit managers, than audit seniors (F = 4.399, p = 0.039; refer Table III). These results are driven by one cell; being managers in the presence and reinforcement of the code. This interaction is discussed in the following section.

H3: The effect of the interaction between the strength of the ethical environment and audit experience on the quality of auditors' judgments

The ANOVA results for the interaction between auditor rank and the strength of the ethical environment are significant. However, descriptive statistics highlight that, on average, the absolute value of the *difference* for managers in the presence and reinforcement of a code appears to be much greater, with both the technically 'appropriate' and 'recommended' amounts for the writedown being higher (i.e., more conservative), than in the other three cells. As discussed in Buckless and Ravenscroft (1990), contrast analysis is a more appropriate form of analysis than ANOVA, when the results (and

TABLE IV

Absolute value of the *expert difference* between inventory writedown believed to be technically appropriate ('appropriate'), and expert consensus amount of writedown (i.e., $5 million); (Recommended inventory writedown *less* technically appropriate inventory writedown; *no difference* = 0; *maximum difference in suggested amount* = 15)

Ethical Environment	Level of auditing position [Mean (SD; *n*)]		
	Audit managers	Audit seniors	Total
Panel A: Descriptive statistics			
Presence of code	4.76 (3.949; 19)	7.48 (3.285; 23)	6.25 (3.809; 42)
Presence and reinforcement of code	5.93 (3.837; 23)	6.67 (3.438; 21)	6.28 (3.629; 44)
Total	5.40 (3.885; 42)	7.09 (3.345; 44)	6.27 (3.696; 86)

Source of variation	Sum of squares	df	*F*	*p-value*
Panel B: ANOVA results				
CODE	0.676	1	0.051	0.821
RANK	63.629	1	4.838	0.031*
RANK*CODE	20.918	1	1.590	0.211
CODE	1.967	1	0.137	0.712
GEN_EXP	0.007	1	0.000	0.983
GEN_EXP*CODE	0.066	1	0.005	0.946

RANK = subjects' auditing rank, either an audit manager or audit senior; GEN_EXP = subjects' length of general auditing experience ('higher' and 'lower'); CODE = the presence vis-à-vis presence and reinforcement of a code of conduct.

*Significant at the 5% level.

R^2 = 0.071.

hence expected interactions) are in the form shown in this study. Contrast analysis shows that these *differences* (mean = 1.91) are significantly larger than the *differences* reported for the other three cells ($t = -3.334$, $p = 0.001$; refer Table III). Similar results are reported between different levels ('higher' and 'lower') of general auditing experience.

This result provides support for H3, and suggests that the impact of the stronger ethical environment is greater for audit managers, than audit seniors. Results show that the absolute value of the *difference* variable is significantly greater than zero for managers in the stronger ethical environment, suggesting a less ethical decision. However, although the absolute *difference* is greater, both the 'appropriate' and 'recommended' actual writedown amounts, on average, are higher (9.42 and 8.68, respectively) than for audit managers in the presence only condition (7.92 and 7.58, respectively). This result suggests that reinforcement of the code impacts managers in terms of increasing their conservatism (not necessarily being more ethical). The less experienced audit seniors do not demonstrate similar conservatism in the reinforcement condition (Figure 1).

When two different dependent variables are used to assess the main effects (for H1 – *difference* and H2 – *expert difference*), it is usual that analysis of the interaction also utilizes the two variables. Although the interaction we are examining in this study is focused on the quality of the overall judgment, (*difference*), the interaction involving the technical judgment (*expert difference*) is also analyzed. Table IV shows that there is no significant interaction reported, when this measure is used.

H4 and H5: Actual judgments and expectations of judgments

The purpose of H4 was to test whether the accountability pressure (i.e., expectations of their superiors) is a potential determinant of the audit seniors' judgments, rather than their experience (rank) and/or the strength of the ethical environment.

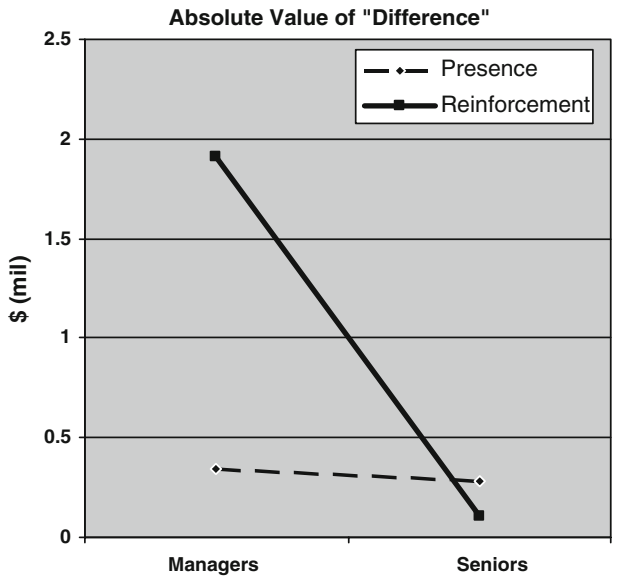

Figure 1. Absolute value of the *difference* between inventory writedown believed to be technically appropriate ('appropriate') and amount of writedown recommended ('recommended').

Therefore, H4 examines whether the judgments made by seniors conform to the expected judgments of their superiors, the managers. H4 is tested undertaking pairwise ANOVA tests between seniors' judgments and their expectations of the judgments made by the managers. This analysis shows significant differences ($t = 2.601$, $p = 0.013$) between the seniors' 'recommended' amount (mean = 9.27 on a scale ranging from \$0 to \$15 m) and the managers expected 'recommended' amount (mean = 8.38). The audit seniors' writedown amounts are significantly different from their expectations of managers' writedowns. Furthermore, in response to questions about the likelihood of agreeing to the clients' proposed 'nil' writedown, the likelihood of seniors agreeing to a 'nil' writedown (Mean = 2.02, where 1 = highly unlikely and 7 = highly likely) was significantly different ($t = 3.858$, $p = 0.000$) from the expected likelihood that audit managers would agree to such a writedown (mean = 2.44). These results do not support H4 that seniors will conform to the expected judgments of the audit managers and suggest important differences in judgments between the two audit ranks.

H5 examines whether the judgments made by managers will align with the seniors' expectations about those managers' judgments. ANOVA analysis reported no significant differences between the judgments and expectations for either the 'recommended' amount, or the likelihood of accepting the clients' proposed 'nil' writedown. Consequently, H5 cannot be rejected.

Overall, these results suggest that despite audit seniors having accurate expectations of managers' actual judgments, they do not appear to align their own judgments with these expectations. Therefore, audit seniors' decisions do not seem to be impacted by accountability pressure.

Additional analysis

The research instrument also asked all participants to indicate how they dealt with the code. There was no significant correlation (one-tailed Pearson) between the use of the code (on a scale of '0 = ignore' to '3 = read in detail and respond') and the '*difference*' variable for either managers, or seniors. This suggests the manner, in which auditors indicated that they would deal with the code did not contribute to the judgment made.

Discussion and conclusion

The aim of this study was to examine whether the strength of the ethical environment (proxied by the presence only versus the presence and reinforcement of a code) has an impact on audit quality. This was motivated by the recent introduction of the ISQC1, which requires all accounting firms to implement policies and processes to ensure employees' technical and ethical competence. Audit seniors and managers (as proxies for auditing experience) were asked to make a number of judgments in relation to an inventory writedown task, with aggressive client preference already indicated. All participants were highly likely to discuss the writedown issue under all conditions. This indicates that all participants were aware of the significance of the audit issue (i.e., the inventory writedown) addressed in the study, and thus enhances the validity of the results obtained.

Audit managers were sensitive to the presence and reinforcement (vis-à-vis the presence only) of a code, whereby the *difference* was significantly greater in the

stronger ethical environment. In contrast, seniors appear to be generally unaffected by the differences in the strength of the ethical environment. These results provide support for previous research (Noreen, 1988; Pflugrath et al., 2007; Wotruba et al., 2001), which suggests that the impact of a difference in the strength of the ethical environment will be greater for more experienced auditors who have bilaterally internalized the significance of a code. This can be explained by the combined effect of the commitment that comes with having internalized the significance of the code, and the differences in the accountability pressures experienced by managers, vis-à-vis seniors. Commitment is defined as the ''totality of internalized normative pressures to act in a way that meets organizational interests'' (Wiener, 1982, p. 48). Therefore, given that commitment can be influenced by organizational intervention (Wiener, 1982) and that the degree of commitment is heightened by the number of acts performed by the subject (Kiesler, 1971), it is expected that requiring subjects to sign a declaration in respect of having read the code and agreeing to abide by the code (relative to those who merely receive a copy of the code) will heighten commitment. It also follows from prior research that audit managers will be more committed to the organizational outcomes under the 'reinforcement of the code' condition, given their greater experience (and hence greater internalization of the significance of the code).

Furthermore, given audit managers' direct relationship with the clients, managers will encounter greater accountability pressure than seniors, who are generally only directly accountable to managers. While Peecher (1996) found evidence that auditors became more skeptical when they were held accountable to superiors, DeZoort et al. (2006) demonstrated that different levels of accountability pressures lead to differences in auditors judgments. They showed that auditors faced with higher levels of accountability pressures (e.g., justification) produced more conservative judgments than auditors under lower levels of pressure (e.g., review). These two different levels of accountability pressure equate with the pressures being faced by managers and seniors, respectively. While seniors are subject to 'review' pressure from their managers (who 'review' their decisions), managers are subject to the higher level 'justification' pressure as they are required to explain to, and negotiate with, the client. Consequently, the managers, in the presence and reinforcement of the code, will encounter both higher levels of accountability and have a heightened commitment to the organizational interests, than subjects in the other three cells. Consistent with the result of this study, it implies that managers, in the presence and reinforcement of the code of ethics, will be more skeptical and make more conservative judgments. On average, the results of this study suggest that audit managers make judgments that are more conservative in the stronger ethical environment for each of the key decisions: (i) the technically correct amount and (ii) the recommended amount; while the opposite is true for seniors.

Additionally, contrary to previous research (Buchman et al., 1996; Cuccia et al., 1995; Hackenbrack and Nelson, 1996) that suggests that seniors' judgments would align with the expectations of managers; this study showed that seniors made judgments that were significantly different from the judgments that they expected their audience (i.e., managers) to make. Seniors were able to 'correctly' identify what judgments the managers would make.

Overall, the results of the study provide little support for the need of reinforcing written codes of conduct as part of accounting firms' process of quality control, as all auditors, on average, made technically and ethically appropriate, and skeptical, judgments under all conditions. There was however, a significant impact on the judgments of audit managers in the 'reinforcement of the code' condition, in which heightened conservatism in decision-making was evident. However, it is worth noting that increased conservatism in an auditing context does not necessarily imply an increased quality of judgment.

In addition, the fact that seniors, unlike the managers, were not affected by the presence and reinforcement (vis-à-vis the presence only) of a code suggests that the impact of codes and their reinforcement depends upon users' familiarity with codes and the extent to which they have internalized their meaning. Therefore, accounting firms interested in improving audit quality should consider ways in which the familiarity with the code, for all employees, could be enhanced. Furthermore, it seems that the mere signing of a declaration to say that they have read and understood the code is not sufficient. The need to formally expose all employees to codes through formal training, as well as audit aids, such as the inclusion of checklists and/or audit program steps on all engagements should be considered.

The findings of this study must be considered in the light of the following limitations. First, the use of an experimental design reduces the external validity of the study as not all information normally considered by auditors was presented in the audit scenario. However, the internal validity of the study is strengthened by the experimental method and by use of an existing research instrument developed by Cohen and Trompeter (1997), adapted to, and tested in, the Australian auditing context by Martinov (2004) and Pflugrath et al. (2007). Second, the experiment was conducted within one 'Big 4' accounting firm, and therefore it is uncertain whether the results are driven by the unique characteristics of that firm, or whether they can be extended across all accounting firms more generally.

This appears to be the first study to date to examine the effect of the presence and reinforcement of a code on the quality of auditors' judgments, and extends the only other study to examine the impact of codes upon auditor judgments (Pflugrath et al., 2007). Given the findings of this study, future research into other factors of the ethical environment suggested by ISQC1 and APES 320 (e.g., leadership and management influence, monitoring, and so on) could be explored.

Notes

[1] Codes of ethics are generally referred to as codes of conduct at the organizational/accounting firm level.

[2] Independent Commission Against Corruption (1998) of New South Wales, Australia.

[3] Mission and values, leadership and management influence, peer group influence, procedures, rules and codes of ethics, ethics training, and rewards and sanctions. The other two factors were organizational or industry factors not directly related to the ethical environment.

[4] A similar code entitled *Code of Ethics for Professional Accountants* exists at the international level.

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