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Effects of reporting relationship and type of internal control deficiency on internal auditors' internal control evaluations

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Abstract

Purpose – This paper aims to explore whether an internal auditor's evaluation of internal control deficiencies are influenced by the party with primary influence over the internal audit function and by the type of internal control deficiency.

Design/methodology/approach – A behavioral experiment is conducted with internal auditors as participants in a 2×2 between-subjects factorial design.

Findings – Results indicate that internal auditors are less likely to evaluate a pervasive control deficiency related to “tone at the top” as a material weakness than a process-specific control deficiency. Furthermore, internal auditors are somewhat less likely to evaluate a process-specific internal control deficiency as a material weakness when management has primary influence over the internal audit function than when the audit committee has primary influence. It is also found that the best practice of internal audit oversight (i.e., primary oversight of internal auditors by the audit committee) may lead to potential internal under-reporting of instances where the audit committee represents a material weakness in internal control.

Research limitations/implications – Limitations of this research include lack of economic consequences (e.g. future pay and job loss) associated with the internal control decisions made by the participants; less concise information provided to the participants than would generally be available to them; and lack of generalizability of the findings beyond the specific company setting and internal control scenario portrayed in the case materials.

Practical implications – Not evaluating a pervasive control deficiency related to “tone at the top” as a material weakness seems to not fully align with relevant professional guidance and can possibly result in inaccurate internal information about the quality of internal controls. Furthermore, having an internal auditor's evaluation of a process-specific internal control deficiency influenced by the party with primary influence over the internal audit function would not appear to align with relevant professional guidance. Finally, primary oversight by the audit committee of the internal auditors may lead to potential internal under-reporting of instances where the audit committee represents a material weakness in internal controls and, thus, possible communication of inaccurate internal control information.

Originality/value – This study is the first to address whether the party with primary influence over the internal audit function influences an internal auditor's evaluation of internal control deficiencies.

Keywords Internal controls, Audit committee, Internal auditors, Control deficiency

Paper type Research paper



Introduction

Management has responsibility for designing, implementing and maintaining effective internal controls, while the audit committee has oversight responsibility for internal controls

([COSO, 2013](#)). Internal auditors have a responsibility to provide independent assurance about effectiveness of internal controls to the board and top management ([COSO, 2015, 2013](#)) and can also provide advice on internal controls to the board and top management. Internal auditors do not design or implement controls as part of their normal responsibilities and are not responsible for the organization's operations, including its internal controls ([COSO, 2015](#)).

Public company top management (i.e. CFO, CEO) also has a responsibility to publicly report on the effectiveness of internal control over financial reporting (ICFR)[1]. If the company has a material weakness in ICFR, management must conclude that ICFR is not effective[2]. Internal auditors often assist top management by evaluating their organization's ICFR for the purpose of providing management reports in compliance with the requirements of Section 404(a) of SOX ([Protiviti, 2012; Schneider, 2009; SEC, 2007](#)). In this role, internal auditors must provide objective evaluations. As mandated by the [Institute of Internal Auditors \(IIA\) \(2012\)](#), "internal auditors must have an impartial, unbiased attitude and avoid any conflict of interest" ([IIA, 2012, sec. 1120](#)). Lack of objectivity in evaluating internal controls can cause management to provide inappropriate SOX reports.

We recognize that there are unique factors in an internal audit setting that call into question whether internal auditors can be objective when evaluating internal control deficiencies. First, two parties that are elements of a company's internal control system (i.e. audit committee and management) are the two parties that typically have influence and oversight responsibility for the internal audit function (IAF), although the relative influence of these two parties varies across organizations ([Abbott et al., 2010](#)). Thus, ineffective ICFR may reflect poorly on these two parties. Given that internal auditors neither design nor implement controls as part of their normal responsibilities and are not responsible for the organization's operations, including its internal controls, the quality of ICFR may not reflect as directly on the IAF ([COSO, 2015](#)).

Second, some internal control deficiencies are pervasive across the organization. Pervasive deficiencies can give impressions that top management does not consider internal controls very important and that the audit committee does not have proper oversight of internal controls. In contrast, other deficiencies relate only to one specific process. Process-specific control deficiencies, as compared with pervasive control deficiencies, are likely not as reflective of management's internal control responsibilities and the audit committee oversight of internal controls.

We explore whether these two factors that are present in an internal audit setting (party with primary influence over the IAF, type of internal control deficiency) influence an internal auditor's evaluation of control deficiencies. Using a 2×2 factorial design, we manipulate the party with primary influence and oversight of the IAF at two levels (i.e. audit committee, top management) and the type of deficiency being evaluated at two levels (i.e. pervasive deficiency reflective of "tone at the top", process-specific deficiency). Results indicate that internal auditors are less likely to evaluate a pervasive control deficiency related to "tone at the top" as a material weakness than a process-specific control deficiency. Furthermore, we find some support that internal auditors are less likely to evaluate a process-specific internal control deficiency as a material weakness when top management has primary influence over the IAF than when the audit committee has primary influence. Finally, in exploratory analyses, we find that the best practice of primary oversight by the audit committee of the IAF may lead to potential under-reporting within the organization of instances where the audit committee represents a material weakness in ICFR, and thus, possible communication of inaccurate internal control information. In instances where the

external auditor is required to test internal controls, the potential under-reporting may be corrected by this independent testing.

Overall, our results provide important insights into internal auditors' internal control evaluations and suggest issues for consideration by regulators, standard setters, those with primary oversight of an IAF, and researchers. For example, should regulators and standard setters be concerned that a pervasive control related to "tone at the top" is viewed as less severe than a process-specific deficiency, and less likely to be evaluated as a material weakness? While our experimental results find this outcome, we note that archival analysis also indicates that pervasive controls are not commonly found to be material weaknesses (vs process controls related to say revenue recognition, tax provision, estimates, etc.) (CFGI, 2015). More specifically, "tone at the top" internal control material weaknesses are quite unusual (Audit Analytics, 2016a, 2016b). Standards and regulatory guidance (PCAOB, 2007; SEC, 2007) discussing pervasive controls suggest that deficiencies in these controls can have widespread implications throughout a company. If there is under-reporting of these types of possible material weaknesses, is unreliable information about internal controls being shared internal and external to the organization? Should those with oversight of an IAF be concerned that for at least one type of process-specific internal control deficiency, internal auditors' judgments are affected by whether top management or the audit committee has primary influence over the IAF? Further, should regulators and standard setters be concerned that the best practice of primary oversight by the audit committee of the IAF may lead to internal under-reporting of instances where the audit committee represents a material weakness in ICFR? Does independent testing by the external auditor result in higher-quality internal control information in these instances? Our results suggest opportunities for researchers to further assess the extent of internal control misreporting and to evaluate possible mechanisms to overcome any unintended biases suggested by the results of our study.

Background and hypotheses development

Internal auditors commonly provide information about the effectiveness of ICFR to their organizations (Lin *et al.*, 2011). Information about control strengths and weaknesses, including recommendations for improvements, are communicated informally, as well as through formal internal audit reports. Of significance to this study is the recognition that public companies use this information to comply with regulatory requirements for internal control reporting[3]. Any internal control deficiencies deemed to be material weaknesses would result in the company publicly providing an adverse conclusion on ICFR. Adverse conclusions on ICFR have significant consequences for companies, including less favorable lending decisions (Schneider and Church, 2008), adverse stock market reactions (Hammersley *et al.*, 2008), increased costs of equity (Beneish *et al.*, 2008) and increased audit fees (Raghunandan and Rama, 2006).

Pervasive controls and process-specific controls

As part of their internal control evaluation responsibilities, internal auditors evaluate internal control deficiencies that are process-specific, as well as deficiencies that are pervasive throughout the organization (i.e. deficiencies that likely affect multiple processes). In comparing pervasive controls (which are described as entity-wide controls) with process-specific controls, first consider controls over management override, which are pervasive (i.e. entity-wide) controls. If these controls were not working effectively, a CFO could record erroneous transactions in multiple processes affecting multiple accounts. Thus, controls over management override have a pervasive, entity-wide effect. In contrast, process-specific

controls, such as control activities, typically affect only certain processes, transactions, accounts and assertions, and would not have a pervasive effect throughout the organization. For example, an organization might require that a supervisor approve an employee expense report after reviewing it for reasonableness and compliance with policy. If this control is not effective, employee expenses could be misstated. However, other types of transactions and accounts throughout the entity would not be affected by this deficiency.

An important pervasive internal control is the tone set by top management regarding the importance of internal controls (Hansen *et al.*, 2009). Top management's tone regarding the importance of internal controls can have significant effects throughout an organization and across multiple processes. However, previous research suggests that internal auditors may be less than candid and forthright in their reporting of evaluations of top management's tone (Hansen *et al.*, 2009)[4]. This tendency would appear to be supported by psychological research in the area of motivated reasoning (Kunda, 1990; Bazerman *et al.*, 1997; Bazerman *et al.*, 2002; Loewenstein *et al.*, 1993). Motivated reasoning theory states that preferences influence individuals' judgments and decisions. Even when individuals are trying to be objective and impartial, they are often unconsciously influenced by their preferences, in a self-serving manner, especially when there is uncertainty inherent in the decision. As an example, Ahlawat and Lowe (2004) provide evidence of both in-house and outsourced internal auditors making self-serving decisions that advocate employer/client positions rather than objective ones.

When internal auditors perceive that there is a deficiency reflective of the quality of top management's tone, they likely recognize that board committees, such as the audit committee, have responsibility for the tone set by top management (Hansen *et al.*, 2009; COSO, 2013). Thus, as supported by motivated reasoning theory, internal auditors would not want to displease either top management or the audit committee (both of whom have some oversight of and responsibility for the IAF and for the internal controls) by evaluating a pervasive internal control deficiency reflective of top management tone as a material weakness. That is, internal auditors are motivated to evaluate the pervasive internal control as effective (i.e. not a material weakness). In contrast, internal auditors evaluating whether a process-specific control deficiency is a material weakness may not perceive that the deficiency is as directly reflective of the activities of top management or the audit committee, as the control is more directly related to management directly responsible for the affected process. Given that internal auditors do not typically report to process-specific managers, they may be more forthright in their evaluations of process-specific controls than pervasive controls.

As an additional point of comparison, pervasive controls are likely perceived to be less connected to the process level, which is the level where a material misstatement would occur. Thus, it is likely easier for the auditor to see a cause and effect between control deficiencies and material misstatements for process controls than for pervasive controls. Stated differently, a control deficiency related to a process control might be more easily seen as likely resulting in a material misstatement, than a control deficiency related to a pervasive control, which is not as directly linked to a specific potential material misstatement.

We note that archival analysis indicates that pervasive controls (vs process controls related to say revenue recognition, tax provision, estimates, etc.) are not commonly identified as material weaknesses (CFG, 2015). More specifically, tone at the top material weaknesses are quite unusual (Audit Analytics, 2016a, 2016b). This archival evidence, coupled with the reporting relationships faced by internal auditors, suggests that internal auditors will be less likely to indicate that a pervasive internal control deficiency related to tone at the top, as compared with a deficiency in a process-specific control, is a material weakness. Our discussion suggests *H1*:

- H1. Internal auditors are less likely to evaluate a pervasive internal control deficiency reflective of top management tone as a material weakness than a process-specific internal control deficiency.

Parties with influence over the internal audit function

Internal auditors carry out their responsibilities while reporting to top management and the audit committee. Oversight of the IAF can range from complete oversight by top management to complete oversight by the audit committee, with any number of variations in between (Abbott *et al.*, 2010). The degree of oversight provided by either top management or the audit committee has been shown to influence the allocation of IAF resources (Abbott *et al.*, 2010), internal auditors' fraud risk and control risk assessments (Boyle *et al.*, 2015), and internal auditors' perceived personal threats when they report high levels of fraud risk (Norman *et al.*, 2010). This study responds to the recognition by Lenz and Hahn (2015) that the relationship between internal auditors and these two parties (top management and the board/audit committee) continues to be an important research field. We extend previous research by examining whether the party with primary oversight and influence over the IAF (top management or the audit committee) affects the internal auditor's evaluation of an identified control deficiency. Further, we examine whether there is an interaction effect contingent on the type of internal control deficiency being evaluated.

Similar to our earlier discussion of the effect of control type, our discussion of the effect of the party with influence over the IAF is supported by psychological research in the area of motivated reasoning (Kunda, 1990; Bazerman *et al.*, 1997; Bazerman *et al.*, 2002; Loewenstein *et al.*, 1993). While management has responsibility for designing, implementing and maintaining effective ICFR, the audit committee has oversight responsibility for ICFR (COSO, 2013). Given that motivated reasoning theory states that preferences influence individuals' judgments and decisions, we posit that when the party with primary influence over the IAF is top management (audit committee), the IAF will have a preference to please top management (audit committee) and make evaluations that suggest management (audit committee) is effectively performing its job. A pervasive internal control reflective of top management tone regarding the importance of internal controls reflects on both the quality of management and the audit committee. When a pervasive internal control such as this one is identified as a control deficiency, we posit that there will not be an effect on internal control assessments regardless of which party has primary influence. To accommodate the preferences of either party, the internal auditors would want to conclude that this pervasive internal control deficiency is not a material weakness (i.e. conclude that ICFR is effective).

In contrast, when the control deficiency relates to a process-specific control, internal auditors likely see top management and the audit committee as having a less direct level of responsibility for the quality of the process-specific control than for a pervasive control. That is, lower-level management responsible for the specific process is likely perceived as being closer to the control and having significantly more responsibility for the design, operation and maintenance of the control than either the audit committee or top management.

The audit committee interacts with top management and has some understanding of top management's tone about the importance of internal controls. However, the audit committee, as compared to top management, is likely not as immersed in the details of process-specific controls that do not have a pervasive effect across the organization. Thus, for a process-specific control (for which top management likely has more responsibility than the audit committee), the internal auditor will want to arrive at a conclusion that reflects more positively on top management. In this setting, the internal auditor is not as concerned that an internal control

evaluation might reflect on the effectiveness of the audit committee, as the audit committee is not as directly related to the process-specific control as top management. Accordingly, based on motivated reasoning theory, we predict that when evaluating a process-specific control deficiency, the party that has primary influence over the IAF is predicted to have an effect on the internal auditor's control evaluation. More specifically, motivated reasoning theory suggests that when the internal auditor is evaluating a process-specific control, the internal auditor will be less likely to evaluate that control as a material weakness when top management has primary influence over the IAF than when the audit committee has primary influence over the IAF. This discussion suggests *H2a* and *H2b*:

H2a. Internal auditors' evaluation of a pervasive internal control deficiency reflective of top management tone will not be affected by which party has primary influence over the IAF.

H2b. Internal auditors are less likely to assess a process-specific internal control deficiency as a material weakness when top management has primary influence over the IAF than when the audit committee has primary influence over the IAF.

Methodology

Participants

Names of internal auditors and contact information were obtained from various IIA chapter websites throughout the USA. We contacted the internal auditors, requesting them to distribute research questionnaires to colleagues in their organization. We sent 378 questionnaires to 65 different organizations and received 155 completed questionnaires from 33 different organizations. Because we do not know the number of questionnaires that were actually distributed, an actual response rate cannot be determined. However, if all questionnaires were distributed, in a worst-case scenario, the response rate is 41 per cent (155/378). Demographic information about the participants is reported in [Table I](#)[5].

As shown in [Table I](#), Panel A, the participants' positions range from audit staff to chief internal auditor, while Panel B indicates that the vast majority of participants, 86 per cent, work for public companies. Panel C provides experience measures indicating that participants average 8.1 years of internal audit experience; 44.2 per cent have some external audit experience; and 68.9 per cent have some type of accounting, audit or fraud certification. Prior to completing the experiment, 62.9 per cent of participants had participated in issuing an internal control opinion, 91.7 per cent had assisted management in complying with required management ICFR reporting requirements, 29.9 per cent had reported a material weakness in an internal control report, and 52.9 per cent had identified problems that were deemed significant deficiencies. During the 12 months prior to completing the experiment, participants spent an average of 24.4 per cent of their time assessing internal controls. Finally, Panel D indicates that the participants' average age is 37.0; 38.6 per cent are female; and 42.3 per cent have master's degrees. Our participants generally have experience appropriate for the internal control evaluations in this study.

Task

We provided participants with background information about a hypothetical public company that had been complying with SOX internal control reporting requirements[6]. All participants were told that the IAF has a formal reporting relationship with the audit committee, and they were assigned to one of two conditions regarding who had primary influence over the IAF: audit committee; or management. These manipulations are fully

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	<i>N</i>	(%)
<i>Panel A: current position</i>		
Chief Internal Auditor	9	6.8
VP Internal Auditor	5	3.8
Audit Senior Manager or Audit Manager	44	33.3
Audit Senior	42	31.8
Audit Staff	13	9.8
Other	19	14.4
Total	132	99.9
<i>Panel B: current organization type</i>		
Government	4	3.0
For Profit – Public	113	85.6
Nonprofit (Non-government)	6	4.5
For Profit – Private	8	6.1
Other	1	0.8
Total	132	100.0
<i>Panel C: experience</i>		
Obtained accounting, audit or fraud certification		68.9
Have some external audit experience		44.2
Have issued an internal control opinion		62.9
Have assisted management in complying with Section 404		91.7
Have reported a material weakness on an internal control report		29.9
Have identified problems that were deemed significant deficiencies		52.9
	Mean	Median
Years of internal audit experience	8.1	6.0
Years of external audit experience	2.6	2.0
Per cent of time spent assessing internal controls during last 12 months	24.4	20.0
<i>Panel D: other demographics</i>		
Participant Mean age	37	
Participant demographic information Percentage of female	38.6	
Participant demographic information Percentage of those having master's degree	42.3	

Table I.
Participant
demographic
information

shown in Panel A of the [Appendix](#). We chose this manipulation approach based on professional standards and guidance (IIA, 2012) highlighting the need for the IAF to formally report to the audit committee, while extant research notes that there is variation across organizations as to whether management or the audit committee has actual primary IAF oversight responsibility and influence (Abbott *et al.*, 2010).

We informed participants that, as part of the company's ICFR reporting requirements, they were assisting management by evaluating ICFR, and that there was one remaining internal control deficiency detected by the IAF. Participants received one of two conditions regarding this remaining internal control deficiency:

- (1) a pervasive deficiency reflective of top management's tone about the importance of internal controls; and
- (2) a process-specific deficiency.

These manipulations are fully shown in Panel B of the [Appendix](#). These manipulations were intended to be highly suggestive of a material weakness (i.e. both internal control

deficiencies are similar to material weaknesses described in reports filed with the SEC). Our manipulations of the two independent variables result in four treatment groups.

Our dependent variable captures internal auditors' evaluations of the identified internal control deficiency. Consistent with prior research (Earley *et al.*, 2008), we first ask participants how likely it is that they would conclude that the identified deficiency is a material weakness (i.e. likelihood of concluding MW assessment) on a scale from 0 = *definitely not a material weakness* to 100 = *definitely a material weakness*. Again, consistent with prior research (Earley *et al.*, 2008), we also ask participants whether they would classify the deficiency as a material weakness, yes or no (i.e. MW classification assessment). We then asked questions for the purpose of manipulation checks (fully presented in Panels C and D of the Appendix), and finally, we obtained demographic and other background information[7].

Results

Manipulation checks and descriptive statistics

The manipulation checks involve recall of the two independent variable levels assigned to the participants. For the party that has the greatest influence and oversight of the IAF, 150 participants (96.8 per cent) recalled the appropriate party, while 143 participants (92.3 per cent) correctly recalled the type of identified internal control deficiency they were asked to evaluate. We conduct our data analyses after deleting the 17 participants who failed one or both of the manipulation checks, as well as six others who did not provide responses to the dependent variables[8]. The resulting sample size is 132. Within each of the four treatment groups, the sample sizes ranged from 28 to 40 participants.

Descriptive statistics for the two forms of dependent variable are presented in Panel A of Table II and Panel A of Table III. Table II, Panel A indicates that overall 40.9 per cent of the participants classified the deficiency as a material weakness. The percentages for the four

Type of deficiency	Management	Primary influence over IAF		Total
		Audit committee		
<i>Panel A: classification of the deficiency as a material weakness – proportion (per cent) [sample size]</i>				
Process-specific	19/30 (63.3) [30]	23/28 (82.1) [28]		42/58 (72.4) [58]
Pervasive	4/34 (11.8) [34]	8/40 (20.0) [40]		12/74 (16.2) [74]
Total	23/64 (35.9) [64]	31/68 (45.6) [68]		54/132 (40.9) [132]
Factor	df	Mean square	F	p-value
<i>Panel B: analyses of variance on classification of the deficiency as a material weakness</i>				
Primary influence over IAF	1	0.592	3.611	0.060
Type of deficiency (H1)	1	10.473	63.828	<0.001 ^a
Interaction	1	0.091	0.552	0.459
Error	128	0.164		

Notes: ^aOne-tailed *p*-value for directional test; *dependent variable is based on participants' response to whether they would classify the identified deficiency as a material weakness (*yes* or *no*)

Table II.
Material weakness classification assessments*

Type of deficiency	Management	Primary influence over IAF		Total
		Audit committee		
<i>Panel A: likelihood of concluding the deficiency as a material weakness – Mean (Standard deviation) [Sample size]</i>				
Process-specific	0.56 (0.30) [30]	0.67 (0.25) [28]		0.62 (0.28) [58]
Pervasive	0.37 (0.31) [34]	0.30 (0.28) [40]		0.33 (0.30) [74]
Total	0.46 (0.32) [64]	0.45 (0.33) [68]		0.46 (0.32) [132]
Factor	df	Mean square	F	p-value
<i>Panel B: analyses of variance on likelihood of concluding the deficiency as a material weakness</i>				
Primary influence over IAF	1	0.010	0.125	0.724
Type of deficiency (H1)	1	2.625	31.343	<0.001 ^a
Interaction	1	0.284	3.387	0.068
Error	128	0.084		
<i>Panel C: simple effects</i>				
Pervasive: effect of primary influence (H2a)		df	t	p-value
		72	-1.091	0.558
Process-specific: effect of primary influence (H2b)		56	1.519	0.067 ^a

Table III.
Likelihood of
concluding a material
weakness
assessments ^

Notes: ^aOne-tailed *p*-value for directional test; ^ dependent variable is based on participants' response as to how likely, on a scale from 0 = *definitely not a material weakness* to 100 = *definitely a material weakness*, it is that they would conclude that the deficiency is a material weakness

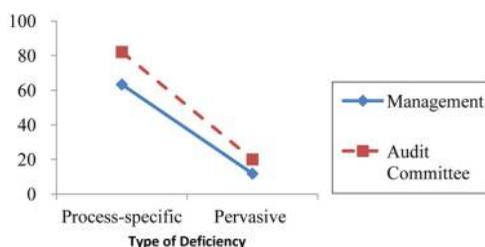
treatment groups range from 11.8 to 82.1 per cent. Table III, Panel A indicates that the overall mean likelihood of concluding a material weakness is 0.46. The mean likelihoods for the four treatment groups range from 0.30 to 0.67.

Hypotheses testing

H1 posits that internal auditors are less likely to evaluate a pervasive control deficiency related to tone at the top as a material weakness than a process-specific control deficiency. Consistent with prior research, we test H1 in two ways. First, we use the percentages of internal auditors who classified the deficiency as a material weakness, which are shown in Panel A of Table II. Panel A of Table II shows that 72.4 per cent of participants concluded a material weakness for the process-specific control deficiency, while 16.2 per cent did so for the pervasive control deficiency. This finding is consistent with H1. Figure 1 also confirms that the classifications as a material weakness are higher for both of the process-specific control deficiency conditions than for the two pervasive control deficiency conditions. Table II, Panel B provides the ANOVA results of this analysis, indicating that the main effect of deficiency type is significant at $p < 0.001$ [9]. Additionally, we test H1 using a binary dependent variable, i.e. whether participants classified the deficiency as a material weakness (yes or no). A logistic regression analysis corroborates the significance of this main effect (Wald chi-square = 14.52; $p < 0.001$).

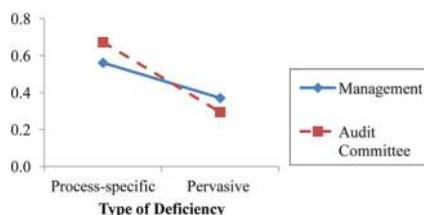
We also test *H1* using the likelihood of concluding a material weakness as the dependent variable. As Panel A of Table III shows, the mean likelihood of concluding a material weakness is 0.62 for the process-specific control deficiency and 0.33 for the pervasive control deficiency. This finding is consistent with *H1*. Figure 2, also confirms that the mean likelihoods of concluding a material weakness are higher for both of the process-specific control deficiency conditions than for the two pervasive control deficiency conditions. Table III, Panel B provides the ANOVA results of this analysis, which indicate that this main effect is significant at $p < 0.001$ [10]. In summary, for both dependent variables, *H1* is supported.

Turning to *H2a* and *H2b*, we expect that internal auditors' evaluations of a pervasive internal control deficiency reflective of top management tone will not be affected by which party has primary influence over the IAF. However, we expect that internal auditors will be less likely to evaluate a process-specific internal control deficiency as a material weakness when top management has primary influence over the IAF than when the audit committee has primary influence. Table II provides results for *H2a* and *H2b* using the percentages of internal auditors who classified the deficiency as a material weakness as the dependent variable. For the classification assessment variable, Panel B of Table II reveals that the



Note: ^aDependent variable is based on participants' response to whether they would classify the identified deficiency as a material weakness (*yes* or *no*)

Figure 1. Summary of results: classification of the deficiency as a material weakness (%)^a



Note: ^aDependent variable is based on participants' response as to how likely, on a scale from 0 = *definitely not a material weakness* to 100 = *definitely a material weakness*, it is that they would conclude that the deficiency is a material weakness

Figure 2. Summary of results: likelihood of concluding the deficiency as a material weakness^a

interaction is not significant ($p = 0.459$); this result is confirmed by the lack of interaction appearing in [Figure 1](#). Additionally, we test $H2a$ and $H2b$ using a binary dependent variable, i.e. whether participants classified the deficiency as a material weakness (yes or no). A logistic regression analysis corroborates the lack of significance for this interaction (Wald chi-square = 0.142; $p = 0.706$).

[Table III](#) provides results for $H2a$ and $H2b$ when we use the likelihood of concluding a material weakness as the dependent variable. Panel B of [Table III](#) indicates that the interaction is marginally significant ($p = 0.068$); this result is confirmed by the interaction shown in [Figure 2](#). The results in Panel C of [Table III](#) indicate, consistent with $H2a$, that when evaluating a pervasive control deficiency related to tone at the top, there is no effect of type of party influence on the control deficiency evaluation. However, consistent with $H2b$, there is an effect of type of party influence on the control deficiency evaluation when the internal auditors evaluate a process-specific control. The results from [Tables II](#) and [III](#) taken together provide consistent support for $H2a$, with limited support for $H2b$ [\[11\]](#).

Additional analysis: the audit committee as an internal control

An important internal control for companies is an audit committee ([COSO, 2013](#); [Deloitte, 2013](#)). Furthermore, professional internal auditing standards ([IIA, 2012](#)) indicate that a best practice is for the audit committee to have primary influence over, and responsibility for, the IAF. In the context of our study, we consider whether this best practice may have an unintended effect on internal control evaluation. In our scenario, the presence of an internal control deficiency (either a process-specific deficiency or a pervasive deficiency) might be suggestive of a weak audit committee that is not fulfilling its required oversight role. It is an open question as to whether the audit committee in such a setting would be evaluated as a material weakness by internal auditors, especially in settings where the audit committee has primary influence over, and responsibility for, the IAF.

Given the best practice for IAF oversight, we obtain evidence on whether internal auditors are less likely to evaluate an audit committee as a material weakness when the audit committee has primary influence over the IAF (a best practice) as compared to when top management has primary influence over the IAF. For purposes of evaluating this issue, participants indicated how likely, on a scale from 0 = *definitely not a material weakness* to 100 = *definitely a material weakness*, it is that they would conclude that there was an audit committee material weakness.

[Table IV](#), Panel A indicates that the mean likelihood of concluding a material weakness related to the audit committee is 0.21 for the condition where the audit committee has primary influence of the IAF and 0.59 for the condition where top management has primary influence. The ANOVA in [Table IV](#), Panel B shows that this difference is significant at $p < 0.001$. [Figure 3](#) confirms this result[\[12\]](#). These results suggest that the best practice of internal audit oversight (i.e. primary oversight by the audit committee) may lead to internal under-reporting of instances where the audit committee represents a material weakness in internal control[\[13\]](#). Furthermore, if internal under-reporting does occur, how likely is it that the reporting will differ when external auditors are required to do their own independent testing?

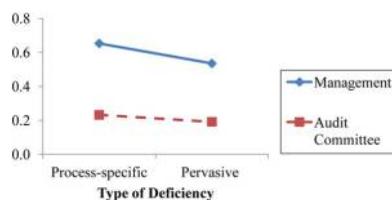
Recent evidence indicates that audit committee quality continues to be a challenge at many public companies ([Boyle et al., 2015](#)). This continuing challenge highlights the importance of internal auditors objectively evaluating audit committee quality and providing quality information about this important aspect of ICFR.

Type of deficiency	Management	Primary influence over IAF Audit committee	Total
<i>Panel A: likelihood of concluding a material weakness related to the audit committee – Mean (Standard deviation) [Sample size]</i>			
Process-specific	0.65 (0.36) [30]	0.23 (0.33) [28]	0.45 (0.40) [58]
Pervasive	0.54 (0.34) [34]	0.19 (0.27) [40]	0.35 (0.35) [74]
Total	0.59 (0.35) [64]	0.21 (0.29) [68]	0.39 (0.37) [132]

Factor	df	Mean square	F	p-value
<i>Panel B: analyses of variance on likelihood of concluding a material weakness related to the audit committee</i>				
Primary influence over IAF	1	4.743	46.019	<0.001 ^a
Type of deficiency	1	0.205	1.985	0.162
Interaction	1	0.048	0.468	0.495
Error	128	0.103		

Notes: ^a One-tailed *p*-value for directional test; [#] dependent variable is based on participants' response as to how likely, on a scale from 0 = *definitely not a material weakness* to 100 = *definitely a material weakness*, it is that they would conclude that there was an audit committee material weakness

Table IV.
Likelihood of
concluding a material
weakness related to
the audit
committee #



Note: ^aDependent variable is based on participants' response as to how likely, on a scale from 0 = *definitely not a material weakness* to 100 = *definitely a material weakness*, it is that they would conclude that there was an audit committee material weakness

Figure 3.
Summary of results:
likelihood of
concluding a material
weakness related to
the audit committee^a

Summary and Conclusion

The results that we discuss below are, of course, subject to limitations common with most experimental behavioral studies[14]. Notwithstanding these typical limitations, our results strongly show that internal auditors will be less likely to evaluate a pervasive control deficiency related to tone at the top as a material weakness than a process-specific control deficiency. Our pervasive control deficiency – reflective of tone by top management – can have significant implications on ICFR throughout the company. Not evaluating this

deficiency as a material weakness may result in providing inaccurate internal information about internal control quality. In reviewing the results related to the pervasive internal control deficiency, it is important to recall that we selected one specific pervasive internal control deficiency – management tone at the top related to the importance of internal controls. The results may be driven by our choice of the pervasive internal control deficiency. Potentially, internal auditors may perceive internal controls related to tone at top as less important than other pervasive controls (e.g. management override controls, an effective whistleblower program, hiring practices related to hiring competent financial reporting employees). Thus, if we had selected an alternative pervasive control, our results may have differed. We recognize that this is an empirical question and therefore suggest future research related to this issue.

Our results, coupled with archival analysis, cause us to question whether pervasive material weaknesses related to tone at the top are being under-reported. Analyses provided by [Audit Analytics \(2016a, 2016b\)](#) note that it is rare for pervasive tone at the top deficiencies to be reported as material weaknesses. Is this finding due to the fact that such material weaknesses are rare or that there is a bias against reporting such material weaknesses? Do standard setters and regulators not expect an inappropriate tone about the importance of controls to be classified as a material weakness?

Our results provide some support that internal auditors are less likely to evaluate a process-specific internal control deficiency as a material weakness when top management has primary influence over the IAF than when the audit committee has primary influence. This result should be concerning, as it suggests that for at least one process-specific control, internal auditors may lack objectivity in their evaluation based on which party has primary influence over the IAF. Given this finding, what guidance can the IIA provide to internal auditors or to those with primary IAF oversight to help overcome this bias?

Finally, we find an unintended consequence of having the audit committee have primary influence over the IAF. That is, internal auditors provide lower likelihoods of concluding a material weakness related to the audit committee when the audit committee has primary influence over the IAF than when top management has greater primary influence over the IAF. Our findings cause us to question whether the best practice of IAF oversight by the audit committee leads to internal under-reporting of instances where the audit committee represents a material weakness in ICFR. If internal or external misreporting is occurring, can researchers and practitioners identify mechanisms that might mitigate this unintended consequence?

Our results provide greater insights into internal control evaluations made by internal auditors. Given the important role of internal auditors in internal control evaluation, this understanding is important and provides opportunities for further consideration by regulators, standard setters, those with primary oversight of an IAF and researchers. Our hypotheses were driven by an underlying argument that the perceived level of responsibility for internal control effectiveness (by the audit committee and by top management) is an important factor in the internal auditors' evaluations. We did not obtain direct measures of the participants' perceived level of responsibility for effective internal controls of relevant parties (audit committee, top management). Furthermore, participants may have perceived that internal auditors have responsibility for effective internal controls. We did not measure this perception, as internal auditors do not design or implement controls as part of their normal responsibilities and are not responsible for the organization's operations, including its internal controls ([COSO, 2015](#)). Typically, internal auditors' responsibilities in this area are to provide independent assurance about effectiveness of internal controls to the board and top management ([COSO, 2015, 2013](#)), and advice on internal controls to the board and

top management. Accordingly, the effectiveness of internal control should not be seen as directly reflecting the quality of the internal auditors, for either pervasive or process-specific internal controls. However, we recognize that this is an empirical question and therefore suggest future research related to this issue.

Overall, our findings suggest the likely presence of bias in internal auditors' evaluations of internal control deficiencies. We do note that for larger public companies, external auditors are also required to report on ICFR effectiveness, and thus have a role in reporting on ICFR. While external auditors may be able to serve as an additional set of eyes related to internal control reporting, we question whether external auditors might also be biased, for example, against evaluating a pervasive top management tone deficiency as a material weakness, given the relationships of the external auditors with top management and the audit committee. We encourage future research to examine the usefulness of the role of the external auditor, and other parties charged with corporate governance, in mitigating any bias suggested by our study.

Notes

1. Specifically, Section 404(a) of Sarbanes–Oxley Act of 2002 (SOX) requires public company management to assess the effectiveness of internal control over financial reporting and to include this assessment in the company's annual report.
2. PCAOB (2007, para. A7) defines a material weakness as “a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis”. SEC (2007) provides similar guidance to public company management.
3. For many companies, shortly after the passage of SOX, internal auditors were spending half or more of their time on SOX compliance related to internal controls (Kaplan and Schultz, 2006; Pricewaterhouse Coopers, 2005; PricewaterhouseCoopers, 2007). More recently, information from the IIA (2014) shows that while 69 per cent of Fortune 500 companies' internal audit groups surveyed have some level of direct involvement in the SOX compliance process, the involvement ranges from a fairly minor role to ownership of the entire SOX process. With less focus on SOX compliance today, internal audit groups are taking a more active role in emerging areas such as cloud computing, cyber security and social media (IIA 2014).
4. Tangentially, we note that Stefaniak, Houston and Cornell (2012) find that internal auditors who highly identify with their employers may be harsher in their internal control evaluations.
5. Table I reports the results for 132 participants. As discussed later, 23 participants were excluded from the analysis of our hypotheses.
6. The questionnaire also provided information about another hypothetical company and participants made different judgments based on that company; that case, and the related judgments are not relevant to this study. The sequence of the cases was not randomized. We do not know whether there may have been anchoring, recency or fatigue effects. While we did not capture actual completion times, we provided an estimate in the cover letter to participants, based on pre-testing, of 15-20 min to complete both cases. No participant commented that this time estimate was misstated.
7. We pre-tested the case materials with several accounting faculty members and PhD students; based on the results of the pilot versions, we made minor clarifying wording changes before administering the materials to practicing internal auditors.
8. The deletion of these 23 participants is not uniform across the four treatment groups, as they range between 1 and 11. We do not know whether this could have affected the results.

9. We also conducted an ANCOVA, using as covariates demographic data including the internal auditors' age, years of internal audit experience and average percentage of time spent assessing internal control effectiveness. The results of the ANCOVA analysis are essentially unchanged from the results of our ANOVA analysis.
10. When the demographic covariates are added to the analysis, the results are essentially unchanged.
11. In reviewing the results related to the pervasive internal control deficiency, it is important to recall that we selected one specific pervasive internal control deficiency – management tone at the top related to the importance of internal controls. The results may be driven by our choice of the pervasive internal control deficiency. Potentially, internal auditors may perceive internal controls related to tone at top as less important than other pervasive controls (e.g. management override controls, an effective whistleblower program, hiring practices related to hiring competent financial reporting employees). Thus, if we had selected an alternative pervasive control, our results may have differed. We further discuss this issue in the final section of the paper.
12. The ANOVA was repeated with inclusion of covariates and the results are essentially unchanged.
13. This implication assumes that we know the correct assessment of the audit committee deficiency that our internal auditor participants should have provided. We acknowledge that we do not have a correct answer against which we can benchmark.
14. Typical limitations of experimental behavioral studies include the following: there are no economic consequences (e.g. future pay, job loss) associated with the internal control decisions made by the participants; information provided to the participants was more concise than would generally be available to them; and the findings are not generalizable beyond the specific company setting and internal control scenario portrayed in the case materials.

References

- Abbott, L.J., Parker, S. and Peters, G.F. (2010), "Serving two masters: the association between audit committee internal audit oversight and internal audit activities", *Accounting Horizons*, Vol. 24 No. 1, pp. 1-24.
- Ahluwat, S.S. and Lowe, D.J. (2004), "An examination of internal auditor objectivity: in-house versus outsourcing", *Auditing: A Journal of Practice & Theory*, Vol. 23 No. 2, pp. 147-158.
- Audit Analytics (2016a), "Raising the tone: lessons from the past", available at: www.auditanalytics.com/blog/raising-the-tone-lessons-from-the-past/
- Audit Analytics (2016b), "What Valeant's 'Tone at the top' language might mean", available at: <https://seekingalpha.com/article/3961470-valeants-tone-top-language-might-mean>
- Bazerman, M.H., Loewenstein, G. and Moore, D.A. (2002), "Why good accountants do bad audits", *Harvard Business Review*, Vol. 80 No. 11, pp. 96-106.
- Bazerman, M.H., Morgan, K.P. and Loewenstein, G. (1997), "The impossibility of auditor independence", *Sloan Management Review*, Vol. 38 No. 4, pp. 89-94.
- Beneish, M.D., Billings, M.B. and Hodder, L.D. (2008), "Internal control weaknesses and information uncertainty", *The Accounting Review*, Vol. 83 No. 3, pp. 665-703.
- Boyle, D.M., DeZoort, F.T. and Hermanson, D.R. (2015), "The effects of internal audit report type and reporting relationship on internal auditors' risk judgments", *Accounting Horizons*, Vol. 29 No. 3, pp. 695-718.
- Boyle, J.F., Gramling, A.A., Hermanson, D.R. and Hermanson, H.M. (2015), "Audit committee material weaknesses in smaller reporting companies: still struggling", *Journal of Forensic & Investigative Accounting*, Vol. 7 No. 1, pp. 110-121.

- CFGI (2015), "Trends in material weaknesses: January, 2015", available at: www.cfgi.com/insight/trends-in-material-weakness-january-2015/
- Committee of Sponsoring Organizations (COSO) (2013), *Internal Control – Integrated Framework: Framework and Appendices*, COSO, Vietnam.
- Committee of Sponsoring Organizations (COSO) (2015), *Leveraging COSO across the Three Lines of Defense*, COSO, Vietnam.
- Deloitte (2013), "Guarding against fraud and corruption: the audit committee's role", available at: <http://deloitte.wsj.com/cfo/2013/09/04/guarding-against-fraud-and-corruption-the-audit-committees-role/>
- Earley, C.E., Hoffman, V.B. and Joe, J.R. (2008), "Reducing management's influence on auditors' judgments: an experimental investigation of SOX 404 assessments", *Accounting Review*, Vol. 83 No. 6, pp. 1461-1485.
- Hammersley, J.S., Myers, L.A. and Shakespeare, C. (2008), "Market reactions to the disclosure of internal control weakness and to the characteristics of those weaknesses under section 302 of the sarbanes-oxley act of 2002", *Review of Accounting Studies*, Vol. 13 No. 1, pp. 141-165.
- Hansen, J., Stephens, N.M. and Wood, D.A. (2009), "Entity-level controls: the internal auditor's assessment of management tone at the top", *Current Issues in Auditing*, Vol. 3 No. 1, pp. A1-A13.
- Institute of Internal Auditors (IIA) (2012), "International standards for the professional practice of internal auditing", available at: www.theiia.org/guidance/standards-and-guidance/ippf/standards/full-standards/
- Kaplan, S.E. and Schultz, J.J. (2006), "The role of internal audit in sensitive communications", available at: www.theiia.org/research/research-reports/chronological-listing-research-reports/downloadable-research-reports/?i=238
- Kunda, Z. (1990), "The case for motivated reasoning", *Psychological Bulletin*, Vol. 108 No. 3, pp. 480-498.
- Lenz, R. and Hahn, U. (2015), "A synthesis of empirical internal audit effectiveness literature pointing to new research opportunities", *Managerial Auditing Journal*, Vol. 30 No. 1, pp. 5-33.
- Lin, S., Pizzini, M., Vargus, M. and Bardhan, I.R. (2011), "The role of the internal audit function in the disclosure of material weaknesses", *The Accounting Review*, Vol. 86 No. 1, pp. 287-323.
- Loewenstein, G., Issacharoff, S., Camerer, C. and Babcock, L. (1993), "Self-serving assessments of fairness and pre-trial bargaining", *Journal of Legal Studies*, Vol. 22 No. 1, pp. 135-159.
- Norman, C.S., Rose, A.M. and Rose, J.M. (2010), "Internal audit reporting lines, fraud risk decomposition, and assessments of fraud risk", *Accounting, Organizations and Society*, Vol. 35 No. 5, pp. 546-557.
- PricewaterhouseCoopers (2005), "How to rebalance internal audit priorities in the Sarbanes-Oxley Era", available at: www.cfodirect.pwc.com/CFODirectWeb/Controller.jsp?ContentCode=MSRA-6CR3V S&SecNavCode=ASPP-4NJ6KJ&ContentType=Content&ContentType=Content
- PricewaterhouseCoopers (2007), "2007 State of the internal audit profession study: pressures build for continual focus on risk", available at: www.cfodirect.pwc.com/CFODirectWeb/Controller.jsp?ContentCode=MSRA-73AVH7&SecNavCode=ASPP-4NJ6KJ&ContentType=Content
- Protiviti (2012), "2012 Sarbanes-Oxley compliance survey", available at: www.protiviti.com/en-US/Documents/Surveys/2012-SOX-Compliance-Survey-Protiviti.pdf
- Public Company Accounting Oversight Board (PCAOB) (2007), *Auditing Standard No. 5: An Audit of Internal Control over Financial Reporting That Is Integrated with an Audit of Financial Statements*, PCAOB, Washington, DC.
- Raghunandan, K. and Rama, D. (2006), "SOX section 404 material weakness disclosures and audit fees", *Auditing: A Journal of Practice & Theory*, Vol. 25 No. 1, pp. 99-114.
- Schneider, A. (2009), "The roles of internal audit in complying with the Sarbanes-Oxley Act", *International Journal of Disclosure and Governance*, Vol. 6 No. 1, pp. 69-79.

Schneider, A. and Church, B.K. (2008), "The effect of auditors' internal control opinions on loan decisions", *Journal of Accounting and Public Policy*, Vol. 27 No. 1, pp. 1-18.

Securities and Exchange Commission (SEC) (2007), "Commission guidance regarding management's report on internal control over financial reporting under section 13(a) or 15(d) of the Securities Exchange Act of 1934", Release No. 33-8810, available at: www.sec.gov/rules/interp/2007/33-8810.pdf

Stefaniak, C.M., Houston, R.W. and Cornell, R.M. (2012), "The effects of employer and client identification on internal and external auditors' evaluations of internal control deficiencies", *Auditing: A Journal of Practice & Theory*, Vol. 31 No. 1, pp. 39-56.

Further reading

Institute of Internal Auditors (2014), "2013 GAIN® Annual Benchmarking Study".

Protiviti Inc (2005), "Internal auditing around the world: profiles of internal audit functions at leading international companies", available at: www.protiviti.com.

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Note that the participants were told that they were being asked to assist management in its SOX Section 404 internal control reporting responsibilities. Only the text in non-bold font was provided to the participants.

Panel A: Manipulations relating to primary influence over the IAF

Audit Committee has primary influence and oversight of IAF

The internal audit function at Ken-Tech has a formal reporting relationship with the Audit Committee. Throughout the year, the Audit Committee has provided primary oversight of the internal audit function at Ken-Tech. For example, the Audit Committee influences the internal audit plan, has primary responsibility with respect to hiring, firing and compensating the internal audit director, and has primary responsibility for approving the internal audit budget. Consistent with the formal reporting relationship, management has only limited influence in these areas.

Management has primary influence and oversight of IAF

While the internal audit function at Ken-Tech has a formal reporting relationship with the Audit Committee, top management (CEO and CFO) has been the one during the current year that has been calling the shots regarding the internal audit function. For example, top management is able to influence the internal audit plan, has a great deal of say with respect to hiring, firing and compensating the internal audit director, and has primary responsibility for approving the internal audit budget. In contrast with the formal reporting relationship, the Audit Committee actually has only limited influence in these areas.

Panel B: Manipulations relating to internal control deficiency

Pervasive deficiency directly reflective of management's tone regarding the importance of internal controls

Ken-Tech's management was not diligent in systematically communicating company-wide policies and procedures and consistently emphasizing the importance of controls. Based on testing, the internal audit team felt that management did not promote the most appropriate tone regarding control awareness.

Process-specific deficiency

Ken-Tech did not have sufficient controls in place to ensure that all foreign exchange gains and losses and/or cumulative translation adjustments (the total of which could be material to Ken-Tech's financial statements) were appropriately calculated and recorded in the respective accounts.

Panel C: Manipulation check relating to internal audit reporting relationship

The case you read describes the oversight of the internal audit function at Ken-Tech. Who has the greatest influence and oversight of Ken-Tech's internal audit function?

- (1) Audit committee has greatest influence and oversight
- (2) Management has greatest influence and oversight

Panel D: Manipulation check relating to internal control deficiency

The case describes an identified internal control deficiency. Which of the following descriptions indicates the nature of this deficiency?

- (1) A pervasive deficiency related to management's tone, competency or reliability
- (2) A process specific deficiency related to foreign currency transactions