

# **The Effects of Tone at the top on Internal Auditors' Assessments of Financial Misstatements**

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**ABSTRACT:** Given the important role of internal auditors in ensuring quality corporate governance, this study investigates whether internal auditors' fraud risk assessments bias towards management's favour when the tone at the top is poor and whether the existence of coordination with external auditors can mitigate this bias. Results of an experiment involving 64 internal auditors indicate that internal auditors report a higher risk of intentional misstatements when the tone at the top is poor suggesting that internal auditors are more sceptical when the tone at the top is poor, and a poor tone at the top is considered as a red flag to financial misstatements. The results on the coordination between internal and external auditors further suggest that the existence of coordination can be used as an effective mechanism to mitigate any influence of a poor tone on internal auditors' fraud risk assessments.

**Keywords:** *tone at the top; coordination between internal and external auditors, fraud risk assessment.*

**Data Availability:** *Contact the authors for data availability.*

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## I. INTRODUCTION

The internal audit profession expects internal auditors to play an active role in preventing and detecting fraudulent reporting (Institute of Internal Auditors [IIA], 2009c). This role requires internal auditors to be able to identify and appropriately respond to the potential for the occurrence of fraud and how the organization manages fraud risk (IIA, 2009c).<sup>1</sup>

Evidence from recent fraud literature however suggests that top management is the main perpetrator of financial statement fraud (e.g. Dechow, Ge, Larson, and Sloan 2011). If internal auditors are to play an active role in the prevention and detection of financial reporting fraud, attention must be paid to assessing the risks arising from fraud perpetrated by senior management. This creates a conflict for internal auditors. Prior research suggests that senior management has substantial influence over internal auditors through compensation, performance evaluations and job security (Christopher, Sarens, and Leung 2009), as a result, internal auditors may assume the role of advocates for management (Ahlawat and Lowe 2004). That is, if internal auditors are subject to management influence then internal auditors may strategically bias their judgments on the risk of senior-management related fraud, resulting in compromised fraud risk assessments.

Accordingly, the primary objective of this study is to investigate the effect of top management influence on internal auditors' fraud risk assessments. The influence of top management examined in this study is the tone at the top created by the top management. Tone at the top<sup>2</sup> refers to the entity wide attitudes of integrity and control consciousness, as

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<sup>1</sup> Reflecting on the changes and dynamics of the internal audit profession, the IIA updated the definition of internal auditing with an emphasis of assurance services. According to IIA (2009), assurance services involve the internal auditor's objective assessment of evidence to provide an independent opinion or conclusions regarding an entity, operation, function, process, system or other subject matter.

<sup>2</sup> To be consistent with the usage among practitioners (e.g. ACFE, IIA, and the Institute of Chartered Accountants in Australia) and academics, I use the phrase "poor tone at the top" in contrast to "good tone at the top".

exhibited by the most senior executives of an organization (Association of Certified Fraud Examiners [ACFE], 2006). Internal auditors, as employees of the organization, make judgments under the ethical climate within the context of the tone at the top. Currently, the question of how tone at the top influences the judgments of internal auditors is unclear<sup>3</sup>. This study fills the gap in the literature by investigating how management's attitudes toward integrity and cooperate ethics affect the objectivity of internal auditors' judgments in an experimental setting.

The second objective of this study is to investigate whether a closer relationship between internal and external auditor mitigates the potential bias in internal auditors' fraud risk assessments as a result of management influence. IIA (2009d) suggests that having access to the external auditors' techniques, methods and terminology enables the internal auditors to improve their assurance related work. In the situation that internal auditors are susceptible to biased judgments as a result of the influence from top management, this study predicts that the coordination between internal and external auditors will mitigate management's influence on internal auditors' judgments.

Using a 2\*2 between-subject factorial experiment, we find that internal auditors perceive a poor tone at the top as a red-flag to fraudulent financial reporting. Internal auditors report a higher likelihood of intentional misstatements under a poor tone at the top than under a good tone at the top. This finding runs counter to concerns of biased fraud risk assessments of internal auditors under the influence of management. Our results also indicate that internal auditors perceive that coordination with external auditors is associated with fewer financial misstatements. Effective coordination between internal and external auditors is viewed as an

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<sup>3</sup> The only research as we are aware that explicitly examines the tone at the top and internal audit is Hansen, Stephens, and Wood (2009). From a survey, this study finds that internal auditors who work in organizations that assess tone at the top tend to report higher tone than those internal auditors who do not work in organizations that assess tone at the top. Although the findings from this study indicate that the internal audit function could influence and improve the tone at the top by performing the assessment of tone at the top, it is still unclear on how the tone at the top influences internal auditors' judgements.

effective mechanism to mitigate the effect of a poor tone at the top on assessed fraud risks by internal auditors.

This study advances internal auditing research in several ways. First, prior research examining determinants of internal auditor objectivity at the individual level<sup>4</sup> has focused on incentives and motivations (Brody and Lowe 2000; Ahmad and Taylor 2009; Dezoort, Houston, and Perters 2001; Christopher et al. 2009; Schneider 2010) and close long-term relationship with management (Arnold and Ponemon 1991; Ahlawat and Lowe 2004). In the only study that explicitly examines management's ability to bias the objectivity of internal auditors, Harrell, Taylor, and Chewing (1989) find that internal auditors who have knowledge of management's desired outcomes reach internal control evaluations which are more in consonance with management's desired outcomes. We extend Harrell et al. (1989) by examining how management's attitudes toward integrity and corporate ethics affect the objectivity of internal auditors' judgments. Second, we provide initial evidence on the effect of coordination between internal and external auditors on the quality of financial reporting. Prior research on the benefits of coordination mainly focuses on the factors influencing external auditors' reliance decisions (Gramling, Maletta, Schneider, and Church 2004). Third, the finding that internal auditors are more sceptical under high management pressure has implications for the internal audit profession. Internal auditors' increased awareness of management's ethics and integrity in the assessment on the risk of fraudulent financial reporting reveals the benefits of continuous training on risk management undertaken by the internal audit profession. Finally, the results also have implications for external audit. The improved fraud risk assessments of internal auditors under poor tone at the top could increase the external auditors' reliance on internal auditors, leading to fewer external audit hours (Gramling 1999).

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<sup>4</sup> There is extensive literature examining determinants of internal auditor objectivity at the internal audit function level. Since the objectivity of the internal audit function is not the focus of this study, we do not provide a review of this line of research.

The following section reviews prior literature and develops the hypotheses. This is followed by a description of the research methods and presentation of the results. The paper concludes with a summary of the findings, limitations, and opportunities for future research.

## **II. PRIOR RESEARCH AND HYPOTHESES**

### **Internal auditors' objectivity with respect to assessment of financial misstatements**

Internal auditors perform multiple assurance and consulting tasks directed towards improving and adding value to organizations (Beasley, Clune, and Hermanson 2005; Gramling et al. 2004; Gramling and Myers 2006). This study focuses on the internal auditors' role in assuring the quality of financial statements, specifically, objectivity of the internal auditors' judgment within the context of fraud risk assessment. Financial misstatements can be classified into intentional misstatements (i.e. fraudulent financial reporting) or unintentional misstatements (i.e. errors). Due to the increasing responsibilities of internal auditors in evaluating fraudulent financial reporting (IIA, 2009a), this study focuses on the objectivity of internal auditors' assessments on the risk of intentional misstatements.

Several studies investigate the objectivity of internal auditors' judgment in the context of the fraud risk assessment task. Carpenter, Reimers, and Fretwell (2011) look into internal auditors' fraud judgments by examining the effect of group brainstorming. The concept of objectivity used is internal auditors' perception on qualitative and quantitative risk factors. The authors find that internal auditors' fraud risk assessments are biased towards the quantitative risk factors, but group brainstorming can help reduce this bias. That is, internal auditors who brainstorm in groups provide higher fraud risk assessment and identify more quality fraud risks than individual internal auditors who brainstorm alone. Norman, Rose, and Rose (2010) examine the objectivity of internal auditors' judgments by investigating whether internal auditors are susceptible to biased fraud risk assessment in the face of conflicting

incentives. The results suggest that internal auditors perceive more personal threats when they report high levels of risk directly to the audit committee. The results also reveal concerns on potential conflicts of interest and threats to independence.

Within the context of internal auditors' fraud risk assessment, this study examines internal auditor objectivity using an advocacy perspective. Prior research has taken this approach when investigating the objectivity of internal auditors' assessment of fraud risk (Asare, Davidson, and Gramling 2008). The concept of objectivity used is the internal auditors' advocacy attitude towards their employer or client when assessing fraud. Following Asare et al. (2008) and Norman et al. (2010), this study specifically assesses internal auditor objectivity within the context of internal auditors' assessment of intentional misstatements in the financial statements.

This study also examines the objectivity of internal auditors' assessment on the risk of management overriding internal controls as a subset of internal auditors' fraud risk assessments. Overriding internal controls is one of the ways to perpetrate financial statement fraud by senior management. The internal audit activity must assist the organization in maintaining effective controls by evaluating their effectiveness and efficiency and by promoting continuous improvement (IIA, 2009e). In evaluating and assessing the effectiveness of controls, internal auditors should be alert to significant control issues. Overriding internal controls is considered as a significant control issue (American Institution of Certified Public Accountants [AICPA], 2003), and therefore, internal auditors should be sensitive to the risk that is posed by management to override controls.<sup>5</sup>

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<sup>5</sup> Prior research has not explicitly provided evidence on internal auditors' ability to assess the risk of management override of internal controls. Prior reviews of internal audit research (e.g. Cohen, Krishnamoorthy, and Wright 2004; Gramling et al. 2004; Stewart and Subramaniam 2010) summarize the literature relating to internal auditors' governance role and internal audit quality (including objectivity and independence), without specifically considering internal auditors' ability to assess the risk of management override of controls.

## **The effect of tone at the top on internal auditors' fraud risk assessments**

To derive predictions on how internal auditors will assess the likelihood of senior-management-related misstatements, we rely on social power theory from the psychology literature (e.g. Lasswell and Kaplan 1950; French and Raven 1959). Social power theory suggests that a manager has the ability to influence, persuade and motivate followers' decision making from the power the manager is perceived to possess (Mast, Hall, and Schmid 2010). In organizational settings, the set of values and motives imposed by an organization's leadership is typically referred to as the tone at the top (ACFE, 2006).

The tone set by top management, the corporate environment or culture within which financial reporting occurs, is the most important factor contributing to the integrity of the financial reporting process (Committee of Sponsoring Organizations of the Treadway Commission [COSO], 1987). Since employees pay close attention to the behaviour of top management, their judgments and decisions are influenced by the tone at the top created in the workplace by top management (Schwartz, Dunfee, and Kline 2005). Tone at the top influences the overall control environment. Internal auditors, as employees of the organization, make judgments under the ethical climate in the context of working environment and the tone at the top.

Prior studies on internal auditors' attitudes toward management or client suggest that maintaining a true objective view may not be possible for internal auditors because internal auditors tended to advocate with management (Brody and Lowe 2000; Ahlawat and Lowe 2004). Evidence from prior literature suggests that social pressure from management (Harrell et al. 1989; Brody and Lowe 2000; Ahmad and Taylor 2009), economic interests resulting from incentive payments (Dezoort et al. 2001; Christopher et al. 2009; Schneider 2010), and close long-term relationship with management (Arnold and Ponemon 1991; Ahlawat and Lowe 2004) are some of the factors that cause internal auditors to advocate with management.

The current study extends prior literature by examining how management's attitudes toward integrity and cooperate ethics affect the objectivity of internal auditors' judgments.

Following social power theory, internal auditors are expected to make judgments and decisions under the influence of the tone at the top. Under a good tone at the top, internal auditors are more likely to be influenced by the positive value imposed by top management, more likely to make judgments and decisions in line with the professional ethics and integrity, and therefore their judgements and decisions are more likely to be objective. Under a poor tone at the top, internal auditors are more likely to be influenced by the values set by top management, and therefore their judgments and decisions are more likely to be insufficiently sceptical. If advocacy is of concern then we predict that internal auditors would be less sceptical on potential financial problems, either intentionally or unintentionally, under a poor tone at the top. This leads to the first hypothesis:

***H1a:** The internal auditor's assessment on fraud risk is lower when the tone at the top is poor, compared to when the tone at the top is good.*

Despite their roles in the organization as employees, internal auditors are also part of the auditing profession which adheres to its professional and ethical responsibilities to the rest of society (Gaa 1992). According to Mowday, Steers, and Porter (1979), professional commitment refers to the strength of an individual's identification with a profession. In the context of internal auditing, the commitment with the internal audit profession should orient internal auditors toward behaviour that is in the public interest and away from behaviour that has the potential to damage the profession. As suggested by Lord and Dezoort (2001), this professional commitment should transcend the organisational commitment. In the context of internal auditors' fraud risk assessments, internal auditors are expected to comply with the professional standards requiring internal auditors to exercise due professional care by considering the probability of significant errors, fraud, or noncompliance (IIA, 2009b).

Empirical research in internal auditing examining the perceived effectiveness of the red flags as outlined in SAS No.99 suggests that internal auditors are aware of the red flags regarding management characteristics (Apostolou, Hassell, Webber, and Sumner 2001; Church, McMillan, and Schneider 2001). As opposed to H1a which suggests internal auditors will bias their fraud risk assessment in favour of management due to management influence, evidence from the red flag literature suggests that internal auditors will be more sceptical when the tone at the top is poor. That is, internal auditors are more likely to assess the risk of having financial misstatements to be even higher when they consider the poor tone at the top as a signal to potential fraud. The above arguments lead to a competing hypothesis as to H1a:

*H1b: The internal auditor's assessment on fraud risk is higher when the tone at the top is poor, compared to when the tone at the top is good.*

### **The effect of coordination with external auditors on internal auditors' fraud risk assessments**

Both internal and external auditing standards encourage internal and external auditors to coordinate efforts on audit matters (e.g. AU Section 322; IIA, 2009d). Internal auditing standards encourage internal–external auditor coordination. Prior literature that examines internal–external auditor coordination is mainly from the external auditors' perspective. The coordination between internal auditors and external auditors on audit matters can efficiently reduce budgeted external audit hours, external audit efforts and external audit fees (e.g. Gramling 1999; Felix et al. 2001). The coordination on the evaluation of internal controls can enhance the overall effectiveness of the external auditors' internal control evaluation, leading to greater detection and disclosure of material control weaknesses (Lin et al. 2011).

This study extends prior research by investigating the benefits of coordination to internal auditors. This study predicts that the influence of management power on internal

auditor objectivity is mitigated by having the internal audit function coordinate with external auditors on audit matters. The coordination allows internal auditors to access the external auditors' techniques, methods and terminology within the scope of internal auditing. Thus, the coordination is expected to help internal auditors improve their assurance-related work.

This study relies on the theory of informational social influence to derive predictions on how the coordination with external auditors can mitigate management influence on internal auditors' judgments. According to Deutsch and Gerard (1955), informational social influence is a psychological need to be right when an individual makes a judgment to conform the expectation to others. Following this theory, individuals will often look to others for cues concerning the correct judgments and behaviour when they are in a situation where they are unsure of the correct way to behave (Aronson, Wilson, and Akert 2005). In the current context, it is expected that the external auditors have informational social influence over the internal auditors when the internal auditors coordinate with external auditors on audit matters. When the results from the internal audit are unfavourable to the management, the internal auditors' confidence in reporting such results is expected to be bolstered by coordinating assurance-related work with the external auditors on a regular basis. Therefore, it is expected that the internal–external auditor coordination mitigates management's influence on internal auditors' judgments when the internal auditors are vulnerable to biased judgments in the face of conflicting interests as a result of perceived power from the top management. The objectivity of internal auditors' judgments is expected to be enhanced by this coordination. With focus on internal auditors' assessments of potential material misstatements, this study predicts that the existence of coordination between internal and external auditors will reduce the likelihood of having financial misstatements. This leads to the second hypothesis:

*H2: The internal auditor's assessment on fraud risk is lower when the internal audit function coordinates with external auditors, compared to when the internal audit function does not coordinate with external auditors.*

The internal auditing standards on coordination suggest that having access to the external auditors' techniques, methods and terminology enables the internal auditors to improve their assurance related work (IIA, 2009d). In the situation that internal auditors are susceptible to biased judgments in the face of conflicting incentives as a result of the influence from top management, the coordination between internal and external auditors is predicted to mitigate management's influence on internal auditors' judgments. Specifically, we expect that having internal auditors to coordinate with external auditors will mitigate the effect of a poor tone at the top on internal auditors' fraud risk assessments because the coordination is expected to improve internal auditors' confidence in reporting the irregularities when they are under the negative influence of top management. However, we expect that internal auditors' fraud risk assessments will not differ significantly by having coordination with external auditors under a good tone at the top in which the negative influence of top management on internal auditors is lower. Consequently, we predict that the existence of coordination between internal and external auditors mitigate the effect of a poor tone at the top on internal auditors' fraud risk assessment more than the effect of a good tone at the top. This leads to the third hypothesis:

*H3: The existence of coordination between internal and external auditors has a larger effect on the internal auditor's fraud risk assessment when the tone at the top is poor, compared to when the tone at the top is good.*

### **III. RESEARCH METHOD**

This study employed a 2\*2 between-subject factorial experimental design with independent variables (1) Tone at the top (good versus poor), and (2) Coordination between internal and external auditors (exist versus not exist).

### **Participants and administration**

Participants were internal auditors from various organizations in Australia. The experiment was administered in two ways with the help of a contact person from each organization. The experiment was run as a paper-based mail survey and an online survey. With the paper-based mail survey, through the contact person, participants were randomly assigned and mailed the different versions of the instruments corresponding to the four experimental conditions of the 2\*2 design. With the online survey, through the contact person, participants were mailed a web link that directed them to the online survey. The online system automatically allocated participants randomly into different groups to show them one of the four versions of the instruments. Both mail and online instruments have exactly the same materials and questions. For both methods, participants were sent an email accompanied by an invitation requesting participations in the study and assuring participants of the confidentiality of their responses. Financial incentives were not provided in this experiment.

We obtained responses from 72 out of 113 internal auditors contacted via email, yielding a response rate of 64 percent. With these 72 responses, 16 were from the mail-based survey and 56 were from the online survey<sup>6</sup>. Eight responses are eliminated from the sample based on a failed manipulation check. All data and statistics reported are based on the remaining 64 participants<sup>7</sup>.

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<sup>6</sup> The response rate for the mail-based survey is 39 percent (16 responses out of 41 mail-based surveys). The response rate for the online survey is 78 percent (56 responses out of 72 online surveys completed).

<sup>7</sup> Another three participants did not complete the demographic questions. Their responses to the case questions are determined by the researcher as useable, and are included in the data analyses.

In total, 28 percent indicated they were employed by a non-accounting firm that provides out-sourced internal audit service, 22 percent by a Big 4 accounting firm, 23 percent by a governmental organization, and the remaining by other organizations<sup>8</sup>. Among the 64 participants, 23 participants indicated they had external audit experience with a mean of 5.31 years. All participants had an average of 5.35 years of internal audit experience.

### **Task**

The experimental instrument employs and modifies the experimental case from Zimbelman (1997) and Asare et al. (2008), where participants need to make judgments on the risk of fraudulent financial reporting. According to Hermanson et al. (2008), a large percent of companies that were alleged to have senior-management-related weaknesses are manufacturing companies for the period of 2005 – 2008. The use of the client description on a hypothetical manufacturing company in Zimbelman (1997) and Asare et al. (2008) as a basis for the case description in the current experiment reflects the current context of internal auditors' assessment on the likelihood of senior-management-related financial misstatements. The client description was further modified with red-flag cues that related to senior-management-related accounting fraud<sup>9</sup>.

The experiment consisted of three parts. Part 1 presented a description of a hypothetical manufacturing company, including the company background, a description of key personnel, potential risks in credit sales and controls in the hypothetical company, and a brief description of the external audit history. Participants were instructed to assume the role of internal auditor in the company. Participants were told that the internal audit team's focus was on the reliability and integrity of the financial information and the internal audit team

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<sup>8</sup> There were 13 percent of the participants employed by for-profit publicly held companies, 5 percent by a non-Big 4 accounting firm, and 9 percent by non-for-profit companies.

<sup>9</sup> The instrument was modified based on the feedback received from eight internal auditors who have different levels of experience from a participating organization. The experimental instrument was pilot-tested with 16 academics with a mean experience of three years and a range of one to eight years of experience in accounting research and education.

was planning the audit engagement of the area of accountants receivables and related accountants.

Part 2 of the experiment consisted of information including a description of the ethical culture and the coordination between the internal audit function and external auditors. The order of the ethical culture and the coordination was pilot-tested to ensure that order of the manipulations did not influence the results of the experiment. Subsequent to this information, participants were asked to make assessment on the likelihood of intentional misstatements existing in the net accounts receivable balance and the likelihood of management overriding internal controls to manipulate the net accounts receivable balance.

Upon providing the above judgments relating to the fraud risk assessment, the participants responded to manipulation checks and other debriefing questions in Part 3. These questions were used to assess the understandability of the case material and the effectiveness of the manipulations. In the end of the experiment, participants were asked a number of demographic questions, including participants' work affiliation, working experience, education background, professional certifications, and current position in the employed organization.

### **Dependent variable**

The dependent variable is the objectivity of internal auditors' judgments within the specific context of assessing financial misstatements. Two measurements are used to test whether internal auditors' judgments on financial misstatements are influenced by the tone at the top and the coordination between internal and external auditors. The objectivity of the internal auditors' judgments is primarily measured by the assessed likelihood of intentional misstatements. Given the current context of the assessment of the likelihood of senior-management-related accounting fraud, a higher assessed likelihood of intentional misstatements would suggest the participants are more skeptical about the risks of senior-

management-related accounting fraud. That is, the participants are more likely to make fraud risk assessments that are free from the influence of the senior management.

The secondary measurement of the objectivity of internal auditors' judgments is internal auditors' assessments on the likelihood of management overriding internal controls to manipulate the account balances. As discussed above, overriding internal controls is one of the ways to perpetrate financial statement fraud by top management. The objectivity of internal auditors' judgments is measured by the assessed likelihood of management overriding controls.

Consistent with prior research (Asare et al. 2008; Carpenter et al. 2011; Schafer and Schafer 2009), the participants were asked to indicate their assessment on two separate 100-point fraud judgment scales (0 = minimum likelihood, 50 = moderate likelihood, 100 = maximum likelihood).

### **Independent variables**

The first independent variable manipulates the quality of the tone at the top in the case company. The manipulated tone at the top condition specifically focuses on the behavior of top managers in the workplace. The behavior of top managers in the workplace is designed to differentiate a good tone from a poor tone. According to the Ethics Resource Center's (2005) National Business Ethics Survey, employees are much less likely to commit misconducts when they feel that top management acts ethically in four important ways. In designing the good tone conditions, the experiment combines four ways of top management's ethical action reported in the National Business Ethics Survey (2005): management talks about importance of ethics, informs employees, keeps promises, and models ethical behavior. Specifically, participants in the good tone condition were told:

*“The company has policy statements and code of conduct which explicitly tell employees how they should behave in the company. The code of conduct applies to all employees, including*

*top management. The importance of ethical behaviour is frequently highlighted by management through regular staff meetings. Employees are encouraged to communicate to their supervisors both “good news” and “poor news”. Good job performance is well recognised. Top management always rewards appropriate behaviour and addresses inappropriate behaviour.”*

In contrast, in the poor tone condition, the four ways of top management’s ethical action are designed to be exactly the opposite of the good tone condition. Specifically, participants in the poor tone condition were told:

*“The company has policy statements and code of conduct which include general guidance of business ethics. The code of conduct applies to all employees, though top management seems not to be bound by the code of conduct. Employees read the code of conduct on the first day of their employment and seldom review it afterwards. The management team is autocratic. Employees are always afraid of delivering “poor news” to their supervisors. Good job performance is not always well recognised. Top management does not seem to care about or reward appropriate behaviour and address misbehaviour.”*

The second independent variable manipulates the existence of the coordination between internal and external auditors. The internal-external auditor coordination conditions specifically focus on the existence of coordination of internal and external audit work. The coordination is designed to encourage internal auditors to recognize and disclose any material misstatement in the financial statements. Methods of the coordination are sourced from IIA (2009d) and Lin et al. (2011), including conducting joint risk or planning sessions, perform audits of specific processes or accounts, and loaning internal audit staff to the external auditors. Specifically, participants in the condition where the coordination between internal and external auditors exist were told:

*“For years, the internal audit department has coordinated audit work with the external auditors. The internal audit department shares the information about internal controls, operations, and financial reporting process with the external auditors. The external auditors have access to the internal auditors’ programs and working papers. Joint risk and planning sessions have been scheduled during the audit process to ensure coordination of audit work and efficient and timely completion of audit services, and to determine whether observations and recommendations from work performed to date require that the scope of planned work be adjusted. The external auditors rely heavily on the work of the internal auditors.”*

In contrast, participants in the condition where the coordination between internal and external auditors does not exist were told:

*“For years, the internal audit department has not coordinated audit work with the external auditors. The external auditors have access to the internal auditors’ programs and working papers, yet they put little reliance on the work of the internal audit activity in performing their work.”*

## **IV. RESULTS**

### **Manipulation and other checks**

Manipulation checks are conducted to ensure that participants understand the tone at the top and the coordination between internal and external auditors’ conditions as intended. For the tone at the top condition, the participants were asked to indicate the level of the tone at the top in the case company on an 11-point Likert scale (0 = not at all good; 10 = very good). Most participants correctly identified the level of the tone at the top for their respective condition except for one participant<sup>10</sup> in the poor tone condition who rated the tone at the top above the mid-point of the tone at the top scale. As expected, the average rating of

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<sup>10</sup> Participants who failed the manipulation checks are not included in the data analyses.

those participants in the good tone condition is significantly higher than those in the poor tone condition (means = 7.37 and 2.53, respectively;  $p < 0.001$ <sup>11</sup>). To check the manipulation on the coordination between internal and external auditors, the participants were asked to indicate the level of the coordination between internal and external auditors in the task company on an 11-point scale (0 = not at all good; 10 = very good). Seven participants failed this manipulation check<sup>12</sup>. The average rating of those participants in the condition which the coordination exist between internal and external auditors is significantly higher than those in the condition which the coordination does not exist (means = 7.15 and 1.94, respectively;  $p = 0.004$ ).

Subsequent to the manipulation check questions, the participants answered additional questions related to the task on 11-point scales. These questions assess whether the participants correctly interpret the experimental task. The responses to these questions show that the internal auditors believed that management will have more opportunities to override internal controls when the tone at the top is poor, and that the internal audit function is more likely to effectively oversight the financial reporting process when the tone at the top is good. The participants in different tone conditions, however, did not rate the difficult of remaining objective differently.

### **Test of hypotheses**

The dependent variable used in the hypothesis tests is the primary measurement of internal auditors' fraud risk assessment – the likelihood of intentional misstatements. The dependent variable is the internal auditors' assessments of the likelihood of intentional misstatements. The tone at the top (good tone v. poor tone) and the coordination between internal and external auditors (exist v. not exist) are two between-subject factors. Descriptive

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<sup>11</sup> Results on manipulation and other checks are not tabulated.

<sup>12</sup> Two participants who were in the condition which the coordination exists rated the level of coordination below the mid-point of the scale, while the five participants who were in the condition which the coordination does not exist rated the level of coordination above the mid-point of the scale.

analyses of the internal auditors' assessment on the likelihood of intentional misstatements are shown in Table 1 Panel A, which provides means, standard deviations, and sample sizes for all treatment groups.

**<Insert Table 1 here>**

On average, the internal auditors assessed the likelihood of having intentional misstatements in the task company is 43.59 percent across all experimental conditions. The pattern of means in Panel A indicates potential main effects of the tone at the top and the coordination between internal and external auditors. Specifically, the participants in the poor tone condition assessed the risk of intentional misstatements higher (mean = 57.50) than the participants in the good tone condition (mean = 29.69). The results on the t-tests of the mean differences between treatment groups (Table 1 Panel B) show that the internal auditors' assessments on the risk of intentional misstatements are significantly higher when the tone at the top is poor, compared to when the tone at the top is good ( $t = -6.74, p < 0.001$ ). The internal auditors in the coordination not existing condition assessed the likelihood of intentional misstatements higher (mean = 52.81) than the internal auditors in the coordination existing condition (mean = 34.38). The mean difference on assessed likelihood of intentional misstatements is also highly significant between the two conditions ( $t = -3.76, p < 0.001$ ), indicating that internal auditors' assessment on the fraud risk is significantly higher when there is no coordination between internal and external auditors' work.

Panel C presents results on a two-way ANOVA. The significant main effect of the tone at the top in Panel C ( $f = 68.96, p = 0.000$ ) and the associated means in Panel A indicate that the tone at the top has a statistically significant effect on the internal auditors' assessed likelihood of intentional misstatements. This finding supports Hypothesis 1b, that is, internal auditors are more sceptical about the integrity of financial statements when the tone at the top is poor, compared to when the tone at the top is good. Instead of being influenced by the poor

tone from the top, internal auditors are able to remain objective in their fraud risk assessment by considering the poor tone at the top as a signal to potential fraud. The significant main effect of the coordination between internal and external auditors in Panel C ( $f = 30.30$ ,  $p = 0.000$ ) and the associated means in Panel A suggest that the coordination has a significant impact on the internal auditors' assessment on the risk of intentional misstatements. Consistent with Hypothesis 2, the finding indicates that internal auditors' suspicion about the existence of intentional misstatements is higher when there is no coordination between internal and external auditors, compared to when there is such coordination. In other words, having the internal audit function to coordinate assurance related activities with external auditors is perceived to be associated with fewer financial misstatements.

The main effects of the tone at the top and coordination must be considered in light of the significant interaction between the tone and coordination ( $f = 3.84$ ,  $p = 0.045$ , Table 1 Panel C). The interaction is displayed in Figure 1. As plotted in Figure 1, the difference in the mean assessments on the likelihood of intentional misstatements across the coordination conditions is larger when the tone is poor, compared to when the tone is good.

**<Insert Figure 1 here>**

Based upon the statistical significant interaction and the pattern of means in Figure 1, the existence of coordination between internal and external auditors has a larger downward effect on the internal auditor's fraud risk assessment when the tone at the top is poor than when the tone at the top is good. This finding supports Hypothesis 3. That is, the existence of coordination between internal and external auditors moderates the effect of a poor tone at the top on internal auditors' fraud risk assessment. Effective coordination between internal and external auditors is viewed as an effective mechanism to mitigate the effect of poor tone at the top on assessed risk of material misstatements by internal auditors.

Given the significant interaction effect<sup>13</sup>, multiple pairwise comparisons of the simple main effects are calculated. Following Choo and Trotman (1991), a *posteriori* Tukey's Honestly Significant Difference (HSD) test is used to identify the sources of differences. Table 2 presents the results of the multiple comparisons based on the Tukey's HSD test.

**<Insert Table 2 here>**

The main results are that the internal auditors' in the poor tone condition assessed the risk of having intentional misstatements higher when the coordination between internal and external auditors does not exist than when such coordination exists ( $t = -5.278$ ,  $p < 0.000$ ). The mean difference in the assessed risk of intentional misstatements between the coordination not existing and existing is not statistically significant in the good tone condition ( $t = -2.507$ ,  $p > 0.05$ ). This finding supports Hypothesis 2, which predicts a main effect of the existence of coordination on internal auditors' fraud risk assessment. This finding also supports Hypothesis 3 on the moderating effect of the existence of coordination. Specifically, this finding suggests that the existence of the coordination between internal and external auditors has a larger downward effect on internal auditors' assessment on the likelihood of intentional misstatements when the tone at the top is poor than when the tone at the top is good. That is, the existence of the coordination can reduce the impact of a poor tone at the top more on internal auditors' fraud risk assessment. For both coordination conditions, the assessed likelihood of intentional misstatements is significantly higher for participants when the tone at the top is poor than when the tone at the top is good ( $t = -4.486$  and  $-7.257$  respectively,  $p < 0.000$ ). This finding confirms the results in the two-way ANOVA that the tone at the top has a main effect on internal auditors' assessment on the risk of intentional misstatements.

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<sup>13</sup> We conducted a set of planned contrast tests to detect the presence of an ordinal interaction between the tone at the top and coordination as predicted in Hypothesis 3. Planned contrast test results support Hypothesis 3, in that the results show the existence of the coordination has a larger effect on internal auditors' fraud risk assessments when the tone at the top is poor than when the tone at the top is good.

## **Additional analyses**

### ***Effects on tone at the top and coordination on internal auditors' assessment on the likelihood of management overriding controls***

The secondary measurement of the dependent variable is the internal auditors' assessment on the likelihood of management overriding controls. Consistent with the results on the primary measurement, results on the descriptive statistics<sup>14</sup> show that internal auditors assess the risk of management overriding controls significantly higher when the tone at the top is poor, and when the coordination with external auditors does not exist. The effects of the tone at the top and the coordination between internal and external auditor on internal auditors' assessment on the risk of management overriding controls are tested by a 2\*2 ANOVA.

**<Insert Table 3 here>**

As shown in Panel A, both tone at the top and coordination have significant main effects on the assessed likelihood of management overriding controls. The results are consistent with the primary measurement, supporting Hypotheses 1b and 2. That is a poor tone at the top is considered as an important signal to the risk of management overriding by internal auditors because a poor tone at the top may provide more opportunities for the management to override internal controls. Internal auditors are more sceptical about the risk of management overriding when there is no coordination between internal and external auditors.

The interaction effect of the tone at the top and coordination is not statistically significant. However, the results on the multiple comparisons on the simple main effects reveal some evidence on the interaction effect (Panel B). Specifically, the internal auditors' in

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<sup>14</sup> The results from the descriptive statistics and t-tests on the mean differences show that the participants in the poor tone condition assessed the likelihood of management overriding higher than the participants in the good tone condition ( $t = -6.85$ ,  $p < 0.001$ ). The internal auditors in the coordination not existing condition assessed the risk of management overriding higher than the internal auditors in the coordination existing condition ( $t = -3.49$ ,  $p < 0.001$ ).

the poor tone condition assessed the risk of management overriding controls higher when the coordination between internal and external auditors does not exist than when such coordination exists ( $t = -4.659, p < 0.000$ ). In the good tone condition, however, the mean difference in the assessed risk of management overriding between the coordination not existing and existing is statistically insignificant ( $t = -2.452, p > 0.05$ ). This finding confirms the moderating effect of the coordination predicted in Hypothesis 3. That is, the existence of coordination between internal and external auditors mitigates the negative influence of a poor tone at the top more, compared to a good tone at the top, on internal auditors' assessment on the risk of management overriding.

### *Other analyses*

Recall that two measurements are used to test whether internal auditors' judgments on material misstatements are influenced by the tone at the top and the coordination between internal and external auditors, an overall MANOVA analysis is conducted with internal auditors' assessment on the risk of intentional misstatements and the risk of management override controls as the dependent variables. The tone at the top (good tone versus poor tone) and the coordination between internal and external auditors (exist versus not exist) are used as independent variables. The results confirm Hypotheses 1b and 2. The interaction effect is not statistically significant.

We conduct an ANCOVA analysis to determine whether participants' accounting and auditing experience would influence the hypothesis tests. The dependent variable is internal auditors' fraud risk assessments. The independent variables represent the manipulations of the tone at the top and the coordination between internal and external auditors. Covariates are included for the participants' working experience in external auditing, internal auditing, public companies and manufacturing companies. None of these experience factors are significant in this analysis.

Participants' education level, professional licenses and current position in the organization are also individually included in three one-way ANOVAs as the independent variable. The statistical tests show no significant differences in education levels and the current positions the participants were holding across the two measurements of internal auditors' fraud risk assessments. Participants' professional license is found to have a significant effect on their assessed likelihood of management overriding controls. The results from the multiple comparisons on simple main effects indicate that the participants who were holding Certificate in Control Self-Assessment (CCSA)<sup>15</sup> assessed a higher likelihood of management overriding controls than participants holding other accounting and auditing certifications<sup>16</sup>. Consistent with Bedard and Graham (2011) which posit that outside consultants have greater expertise in control assessments that improves the detection and disclosure of control problems, our finding suggests that internal auditors who have specific knowledge about the risks and controls that generally apply to business processes are more sensitive to the risk of management overriding controls.

## V. CONCLUSION

If top management has significant influence over internal auditors, then internal auditors may compromise their judgments to appease management (Harrell et al. 1989). This study investigates whether top management's attitudes toward ethics and integrity influences the objectivity of internal auditors' judgments. We examine this issue within the context of internal auditors' fraud risk assessments. We specifically examine whether internal auditors' assessments on the likelihood of senior-management related financial misstatements are

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<sup>15</sup> Certificate in Control Self-Assessment (CCSA) is a specialty certification for practitioners of control self-assessment (CSA) by the Institute of Internal Auditors. CCAS candidates must obtain one year of control-related business experience, such as CSA, auditing, quality assurance, risk management, or environmental auditing.

<sup>16</sup> These certifications include Certified Practicing Accountant (CPA), Chartered Accountant (CA), and Certified Internal Auditor (CIA).

biased toward the favour of the management under a poor tone at the top in which the top management does not uphold ethics and integrity and communicate a negative value to their employees.

We find that internal auditors' assessed fraud risk is higher when the tone at the top is poor, relative to when the tone at the top is good. This finding runs counter to any anticipated bias in internal auditors' judgments under the management's influence. Our results reveal that internal auditors are able to remain objectivity in their judgments under management's influence. Specifically, internal auditors are more sceptical about the integrity of the financial statements under a poor tone at the top, suggesting that they perceive a poor tone at the top as an important signal to potential financial misstatements.

We also investigated the benefit of having internal auditors coordinate assurance related activities with external auditors on internal auditors' fraud risk assessments. We find that internal auditors' assessed fraud risk is lower when there is coordination with external auditors, compared to when such coordination does not exist. The finding suggests that internal auditors perceive the coordination with external auditors as a means to reduce potential financial problems and to enhance the quality of financial statements. Our finding of a significant ordinal interaction between the tone at the top and the coordination with external auditors reveals that effective coordination with external auditors can be considered as an effective mechanism to mitigate the influence of a poor tone at the top on the assessed risk of intentional misstatements by internal auditors.

This study is subject to three limitations. First, a small percentage of participants in this experiment are from employees of public companies. Prior studies on the source of the internal audit service suggest that an outsourced internal audit function is perceived to be more independent and competent (Norris 2000; Dezoort et al. 2001; Carey, Subramaniam, and Ching 2006; Glover, Prawitt, and Wood 2008; Desai, Gerard, and Tripathy 2011; Prawitt,

Sharp, and Wood 2012), because an in-housed internal audit function is perceived to have higher probability to be exposed to social pressure from management and limited availability of specialized knowledge (Del Vecchio and Clinton 2003). Although the results from the sensitivity analyses suggest no significant differences in the source of the internal audit service, future research could examine whether in-house or outsourced internal auditors have different perceptions. Secondly, the manipulation of tone at the top is designed to be relatively strong. While having such a strong manipulation helps maintain the high level of internal validity, the design of this manipulation in the current experiment is not likely to capture all the characteristics of tone at the top in a real-organizational setting. Future research is needed to test the generalizability of the results from this study to situations with less extreme changes in the tone at the top. Finally, while we follow previous research methodology the concept of management influence over internal auditors is difficult to operationalize and in light of recent frauds internal auditors may be more wary of advocating for management when making judgments in an experimental setting.

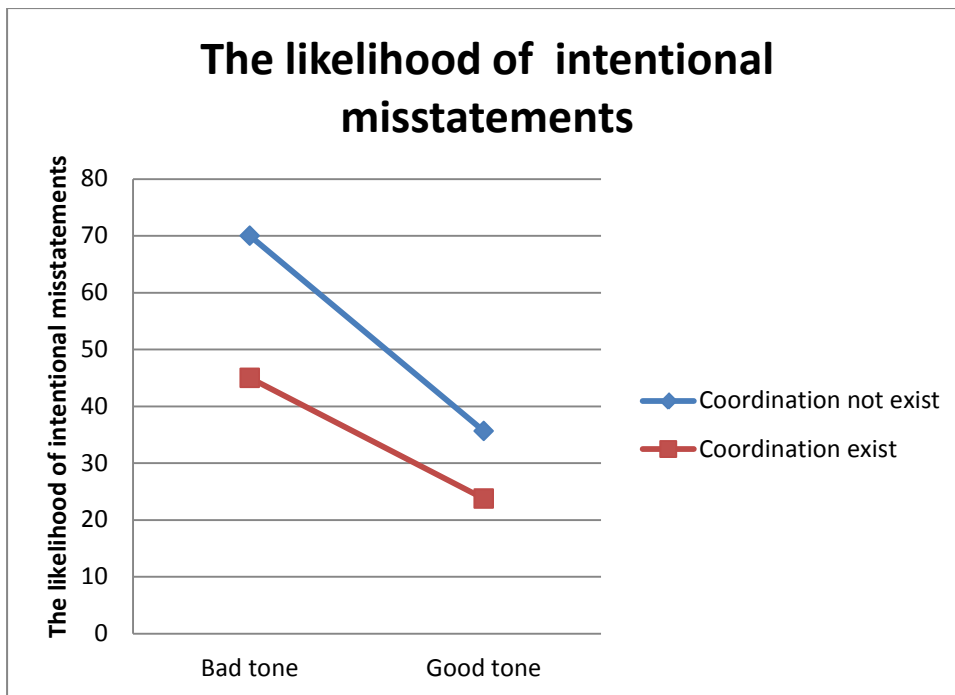
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**Figure 1: Interaction plot on the assessed likelihood of intentional misstatements**



**Table 1**  
**Internal auditors' assessments on the likelihood of intentional misstatements**

*Panel A: Mean of assessments on the likelihood of intentional misstatements (standard deviations) by treatment conditions*

|                                    | <i>Good tone</i>         | <i>Poor tone</i>         | <i>Overall</i>           |
|------------------------------------|--------------------------|--------------------------|--------------------------|
| <i>Coordination exists</i>         | 23.75<br>(11.47)<br>N=16 | 45.00<br>(16.73)<br>N=16 | 34.38<br>(17.77)<br>N=32 |
| <i>Coordination does not exist</i> | 35.63<br>(15.04)<br>N=16 | 70.00<br>(8.94)<br>N=16  | 52.81<br>(21.29)<br>N=32 |
| <i>Overall</i>                     | 29.69<br>(14.48)<br>N=32 | 57.50<br>(18.32)<br>N=32 | 43.59<br>(21.56)<br>N=64 |

*Panel B: Differences in mean of assessment on the likelihood of intentional misstatement by treatment conditions*

|  | <i>Tone at the top</i> |                  | <i>IA-EA coordination</i> |                  |
|--|------------------------|------------------|---------------------------|------------------|
|  | <i>Good</i>            | <i>Poor</i>      | <i>Yes</i>                | <i>No</i>        |
| Mean of assessment on the risk of intentional misstatements (standard deviation) | 29.69<br>(14.48)       | 57.50<br>(18.32) | 34.38<br>(17.77)          | 52.81<br>(21.29) |
| Differences (standard error)   | -27.81 (16.51)         |                  | -18.43 (19.61)            |                  |
| T-statistic (p-value) <sup>#</sup>   | -6.74 (<0.001)***      |                  | -3.76 (<0.001)***         |                  |

*Panel C: A 2\*2 ANOVA on the assessed likelihood of intentional misstatements*

| <b>Source</b>                        | <b>Type III sum of squares</b> | <b>df</b> | <b>Mean square</b> | <b>F-value</b> | <b>p-value</b> |     |
|--------------------------------------|--------------------------------|-----------|--------------------|----------------|----------------|-----|
| Corrected Model                      | 18504.687                      | 3         | 6168.229           | 34.367         | 0.000          |     |
| Intercept                            | 121626.563                     | 1         | 121626.563         | 677.664        | 0.000          |     |
| Tone at the top                      | 12376.563                      | 1         | 12376.563          | 68.958         | 0.000          | *** |
| IA-EA coordination                   | 5439.063                       | 1         | 5439.063           | 30.305         | 0.000          | *** |
| Tone at the top * IA-EA coordination | 689.063                        | 1         | 689.063            | 3.839          | 0.045          | **  |
| Error                                | 10768.750                      | 60        |                    |                |                |     |
| Total                                | 150900.000                     | 64        |                    |                |                |     |
| Corrected total                      | 29273.437                      | 63        |                    |                |                |     |

R Squared = 0.632 (Adjusted R Squared = 0.614)

*Notes:*

*Dependent variable*

Assessed likelihood of intentional misstatement subsequent to viewing manipulations.

*Independent variables*

Tone at the top: the tone at the top in the company, manipulated at two levels: good tone versus poor tone.

IA-EA Coordination: the coordination between internal and external auditors, manipulated at two levels: coordination exist versus coordination not exist.

\*, \*\*, \*\*\* indicate significance (one tailed test) at the 10, 5, and 1 percent levels, respectively.

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**Table 2****Multiple comparisons of simple main effects on internal auditors' assessment on the likelihood intentional misstatements**

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**Tukey's HSD Test**

Alpha = 0.05

Error Degree of Freedom = 60

Error Mean Square = 179.479

Critical Value of Studentized Range = 2.829

| <b>Comparisons of mean assessment on the likelihood of intentional misstatements</b>          | <b>Computed t-value</b> | <b>p- value</b> |     |
|---|-------------------------|-----------------|-----|
| Coordination exists vs. coordination does not exist on the poor tone condition                | -5.278                  | < 0.000         | *** |
| Coordination exists vs. coordination does not exist on the good tone condition                | -2.507                  | 0.069           |     |
| Good tone vs. poor tone on the coordination exists condition                                  | -4.486                  | <0.000          | *** |
| Good tone vs. poor tone on the coordination does not exist condition                          | -7.257                  | <0.000          | *** |
| Good tone and coordination exist condition vs. Poor tone and coordination not exist condition | -9.764                  | <0.000          | *** |
| Good tone and coordination not exist condition vs. Poor tone and coordination exist condition | -1.979                  | 0.207           |     |

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*Notes:**Dependent variable*

Assessed likelihood of intentional misstatement subsequent to viewing manipulations.

*Independent variables*

Tone at the top: the tone at the top in the company, manipulated at two levels: good tone versus poor tone.

IA-EA Coordination: the coordination between internal and external auditors, manipulated at two levels: coordination exist versus coordination not exist.

\*, \*\*, \*\*\* indicate significance (one tailed test) at the 10, 5, and 1 percent levels, respectively.

**Table 3**  
**Internal auditors' assessments on the likelihood of management overriding controls**

***Panel A: A 2\*2 ANOVA on the assessed likelihood of management overriding controls***

| Source                               | Type III sum of squares | df | Mean square | F-value | p-value |     |
|--------------------------------------|-------------------------|----|-------------|---------|---------|-----|
| Corrected Model                      | 19568.750               | 3  | 6522.917    | 31.373  | 0.000   |     |
| Intercept                            | 150156.250              | 1  | 150156.250  | 722.194 | 0.000   |     |
| Tone at the top                      | 13806.250               | 1  | 13806.250   | 66.403  | 0.000   | *** |
| IA-EA coordination                   | 5256.250                | 1  | 5256.250    | 25.281  | 0.000   | *** |
| Tone at the top * IA-EA coordination | 506.250                 | 1  | 506.250     | 2.435   | 0.124   |     |
| Error                                | 12475.000               | 60 | 207.917     |         |         |     |
| Total                                | 182200.000              | 64 |             |         |         |     |
| Corrected total                      | 32043.750               | 63 |             |         |         |     |

R Squared = 0.611 (Adjusted R Square = 0.591)

***Panel B: Multiple comparisons of simple main effects on the assessed likelihood of management overriding controls***

**Tukey's HSD Test**

Alpha = 0.05

Error Degree of Freedom = 60

Error Mean Square = 207.917

Critical Value of Studentized Range = 2.829

| Comparisons of mean assessment on the likelihood of management overriding controls            | Computed t-value | p-value |     |
|---|------------------|---------|-----|
| Coordination exist vs. coordination not exist on the poor tone condition                      | -4.659           | < 0.000 | *** |
| Coordination exist vs. coordination not exist on the good tone condition                      | -2.452           | 0.078   |     |
| Good tone vs. poor tone on the coordination exist condition                                   | -4.659           | <0.000  | *** |
| Good tone vs. poor tone on the coordination not exist condition                               | -6.865           | <0.000  | *** |
| Good tone and coordination exist condition vs. Poor tone and coordination not exist condition | -9.317           | <0.000  | *** |
| Good tone and coordination not exist condition vs. Poor tone and coordination exist condition | -2.207           | 0.133   |     |

*Notes:*

*Dependent variable*

Assessed likelihood of management overriding controls subsequent to viewing manipulations.

*Independent variables*

Tone at the top: the tone at the top in the company, manipulated at two levels: good tone versus poor tone.

IA-EA Coordination: the coordination between internal and external auditors, manipulated at two levels: coordination exist versus coordination not exist.

\*, \*\*, \*\*\* indicate significance (one tailed test) at the 10, 5, and 1 percent levels, respectively.