

The Effects of Internal Audit Role and Reporting Relationships on Investor Perceptions of Disclosure Credibility

ABSTRACT: This study assesses whether internal audit role and reporting relationships affect investor judgment and decision-making. The experiment involved a 2x2 design with internal audit role (i.e. primarily assurance vs. primarily consulting) and reporting relationship (i.e. reports strategically to the audit committee and administratively to the CEO vs. strategically and administratively to the CFO) randomly manipulated between 84 MBA students serving as proxies for nonprofessional investors. The results indicate that participants perceived disclosure credibility to be significantly higher when the Chief Audit Executive reported strategically to the audit committee and administratively to the CEO (versus both strategically and administratively to the CFO). Mediation testing indicates that this increase in perceived disclosure credibility was attributable to an increase in the level of assurance provided for the disclosed financial information. The results reveal no significant differences in perceived disclosure credibility from the differing internal audit roles.

Keywords: internal audit; investor decision-making; disclosure; nonprofessional investors; reporting relationships; Internal Audit Report

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I. INTRODUCTION

The purpose of this study is to examine the effects of internal audit role and reporting relationships on investor judgment and decision-making. Specifically, the study assesses whether investor perceptions of disclosure credibility of financial statement information are increased by the inclusion of an Internal Audit Report (IAR) that details an internal audit function whose work is primarily assurance-related (vs. consulting-related). The study also evaluates whether internal audit functions that report strategically to the audit committee and administratively to the Chief Executive Officer (vs. strategically and administratively to the Chief Financial Officer) increase investor perceptions of disclosure credibility.¹ Finally, the study tests whether investor perceptions of the level of assurance surrounding the disclosure mediate the effects of internal audit role and internal audit relationship on perceived disclosure credibility.

This study is motivated by uncertainty faced by investors in the form of information asymmetry (e.g., Akerloff 1970; Watts and Zimmerman 1986) and information risk (e.g., Kinney 2000; Easley and O'Hara 2004). This uncertainty is costly to firms because investors demand a premium to bear the risks associated with the uncertainty (Kinney 2000). Firms often attempt to reduce this risk by providing informative disclosures (Elliott and Jacobson 1994). Jennings (1987) notes that the amount of information that investors gain from these disclosures are a function of both the amount of new information contained in the disclosure and the credibility of

¹ Strategic reporting refers the governance activities of the internal audit function while administrative reporting refers to the day-to-day activities of the function (IIA 2002).

the disclosure. He also notes that investors may find the credibility of the disclosure to be as useful as the amount of new information contained in the disclosure.

One factor that affects the perceived credibility of management disclosures is the level of assurance associated with the disclosure (e.g., Kinney 2000; Mercer 2004). Kinney (2000) notes that assurance services are useful to decision makers because they help mitigate the effects of measurement error and bias in financial information. While the extant literature includes studies on the effects of external assurance on perceived disclosure credibility (e.g., Libby 1979; Leftwich 1983; Blackwell et al. 1998; Hodge 2001), one potentially valuable within-firm source of assurance comes from a firm's internal audit function (e.g., Kinney 2000; Mercer 2004).

Despite internal audit's role as a cornerstone of corporate governance (IIA 2007a; Gramling et al. 2004), external stakeholders typically have no information about the composition, responsibilities, or activities of the function (Mercer 2004). This information is important given the heterogeneity that is found across internal audit functions which makes it difficult for stakeholders to make informed decisions related to the role of this key component in a firm's overall governance structure (Gramling et al. 2004).² Mercer (2004, 190) notes that:

Internal auditors often serve as the first line of defense against disclosure errors, ferreting out unintentional errors caused by weaknesses in a company's internal controls and intentional errors due to fraud. Consequently, if investors can assess internal audit quality, then firms with a strong internal audit department may have higher disclosure credibility.

Recent literature (e.g., Lapidés et al. 2007; Archambeault et al. 2008; Holt and DeZoort 2009; Mercer 2004) has begun to investigate the need for greater internal audit transparency. For example, Holt and DeZoort (2009) provide initial evidence that a Internal Audit Report

² Gramling et al. (2004) highlight that perceptions of internal audit function effectiveness depend on the structure of the internal audit function, the types of activities undertaken by the function, and the quality of the work performed by the internal audit function.

describing the composition, activities, and responsibilities of internal audit positively affects investor judgment and decision-making. The current study extends the internal audit disclosure literature by examining the effects of two internal audit function characteristics (i.e., role and reporting relationship) on perceived disclosure credibility.

The first characteristic tested is internal auditor role (i.e., primarily assurance-related vs. primarily consulting-related). With the passage of SOX, many internal audit functions shifted their focus away from traditional assurance services (e.g., compliance and financial audits) towards consulting services (e.g., Krell 2005; Proviti 2007). However, this shift creates a conflict between the collaborative consulting work supplied by internal auditors to management and the need for objectivity in providing assurance work (e.g., Galloway 1995; Pickett 1997; DeZoort et al. 2001; Krell 2005; Reding et al. 2007). Additionally, an internal audit department whose work is primarily consulting-related may be perceived as having less capability to detect errors and fraud than a department whose work is primarily assurance-related given a relative lack of evidence gathering. Therefore, the study predicts that investors will perceive financial information to be more credible from firms whose internal audit function's work is primarily assurance-related than those whose work is primarily consulting-related. Furthermore, the study predicts that the relation between internal audit role and perceived financial reporting credibility is attributable to the mediating effect of the perceived level of assurance offered by internal audit.

The second characteristic tested is internal auditor reporting relationships (i.e., report strategically to the audit committee and administratively to the Chief Executive Officer vs. strategically and administratively to the Chief Financial Officer). Objectivity is an essential component of assurance services (e.g., Mautz and Sharaf 1961; Kinney 2000). Assurance

services are of little value to investors if investors can place little trust in the auditor's willingness to report material departures from measurement criteria. The IIA's Organizational Independence standard states that a company's Chief Audit Executive should report to a level that ensures the function can complete its duties (IIA 2007a). An appropriate reporting relationship is essential to ensuring that internal audit activities are not unduly influenced by management. Kinney (2000) notes that objectivity impairments due to inappropriate reporting relationships may undermine the monitoring benefits that internal auditors provide to stockholders.

The IIA (2007b) and shareholder advocates (Johnson 2006) recommend that the best practice to ensure internal audit independence is a dual reporting relationship where the Chief Audit Executive (CAE) reports strategically to the audit committee and administratively to the Chief Executive Officer (CEO). However, a survey of CAEs by the IIA (IIARF 2003) found that only 55% of respondents report strategically to the audit committee and over half of the respondents reported administratively to the Chief Financial Officer (CFO) or controller. Moody's Investors Services argues that this reporting relationship represents a conflict of interest given the CFO's role in the company's financial reporting process and internal audit's work surrounding the financial reporting process. Therefore, the study predicts that investors will find financial information from firms whose CAEs report administratively to the CEO and strategically to the audit committee to be of a higher quality than those that report administratively and strategically to the CFO. Furthermore, the study predicts that the relation between internal audit reporting relationship and perceived disclosure credibility is attributable to the mediating effect of the perceived level of assurance offered by internal audit.

This study used a 2x2 experimental (ANCOVA) design with internal audit role (primarily assurance vs. primarily consulting) and reporting relationship (strategically and administratively to the CFO vs. strategically to the audit committee and administratively to the CEO) manipulated randomly between subjects. MBA student participants were given summary information from a hypothetical company's annual report and an internal audit report. The participants were then asked to provide their assessments of the level of assurance provided for the disclosed financial information, disclosure credibility and an assessment of the firm's price-earnings multiple.

The results indicate that participants perceived disclosure credibility to be significantly higher when the CAE reported strategically to the audit committee and administratively to the CEO (vs. both strategically and administratively to the CFO). Mediation testing indicates that this increase in perceived disclosure credibility was attributable to an increase in the level of assurance provided for the disclosed financial information. The results reveal no significant differences in perceived disclosure credibility from the differing internal audit roles. Finally, supplemental analysis indicates that the reporting relationship judgments ultimately affected participants' price-earnings multiple decisions.

The remainder of the paper is organized as follows. The next section provides background information and develops the formal hypotheses. The third section describes the study's research design and method. The fourth section describes the results of the study. The final section concludes with discussion of the study's implications and foreseen limitations, as well as potential avenues for future research.

II. BACKGROUND AND HYPOTHESIS DEVELOPMENT

Internal Audit's Role in Corporate Governance

The four primary cornerstones of corporate governance include the audit committee, management, external audit, and internal audit (Bailey et al. 2003; Gramling et al. 2004). Over the past several years, the role of the internal audit function as a major component of corporate governance has become increasingly important as a result of corporate scandals and increased legislation (Carcello et al. 2005; Jackson 2007). Deloitte (2006) notes that there would likely have been a significantly higher number of material weaknesses during SOX implementation if not for the work of internal auditors.

Various regulatory bodies have highlighted the importance of internal audit to corporate governance. The Public Company Accounting Oversight Board (2004) stated that the absence of a properly functioning internal audit function might be grounds for a material weakness in internal controls over financial reporting for mature or complex companies. Additionally, SEC officials (e.g., Herdman 2002; Richards 2002; Gadziala 2005) have repeatedly highlighted the critical role that internal audit plays in maintaining an effective control structure within an organization. For example, SEC Associate Director of the Office of Compliance Inspections and Examinations Gadziala (2005) stated that she considers internal audit departments to be critical governance components in the prevention of abuses within a company. Furthermore, the major stock exchanges have begun to recognize the importance of a company's internal audit function. The New York Stock Exchange (SEC 2003a) now requires all member companies to maintain an internal audit function. While the NASDAQ has no such requirement, they do regard maintaining an effective internal audit function as a company best practice (Harrington 2004).

Accounting research also has reflected on the importance of internal audit to corporate governance. Schneider and Wilner (1990) find that companies with an internal audit function are less likely to have financial reporting irregularities. Gordon and Smith (1992) find that the returns for companies with internal audit functions are more likely to outperform the returns from companies without the governance mechanism. Hansen (1997) finds that employees of companies with an internal audit function were less likely to engage in company theft. Beasley et al. (2000) find that companies engaged in fraudulent activities are less likely to maintain internal audit functions than companies not engaging in fraud. Prawitt et al. (2006) find that increased investment in an internal audit function is associated with decreased earnings management. Collectively, the existing accounting literature emphasizes that an effective internal audit function plays a critical role in governance through its effect on corporate risk management and control processes.

Disclosure Credibility

Investors typically lack the information necessary to assess the actual reliability or quality of company disclosures (Jennings 1987). Therefore, investors must assess the credibility or believability of company disclosures in addition to the information content of the disclosure. Jennings (1987) notes that the investor perceptions of credibility may be as important as the information content in determining investor reactions to disclosures. This is particularly relevant in the post-SOX era as a result of corporate failures that impacted investor confidence in financial reporting (Barrett 2002).

Mercer (2004) provides a framework for assessing investor perceptions of disclosure credibility. She notes that one key factor that affects perceptions of disclosure credibility is the degree of external and internal assurance. Kinney (2002, 13) notes that this effect is due both to

an increase in investors' confidence in the "competence and care of the application of stated measurements methods" and "trustworthiness of the display of measurement results." While much of the extant literature (e.g., Libby 1979; Leftwich 1983; Blackwell et al. 1998; Hodge 2001) focuses on assurance added by the external auditor, the internal audit function is a potential source of information that may lend disclosure credibility. Internal auditors often serve as the first-line of defense in preventing errors and detecting fraud (Mercer 2004). An adequately structured internal audit function has the capacity to discover and correct problems before they grow large. However, there is little empirical evidence linking internal audit strength and disclosure credibility due to lack of information available about companies' internal audit functions.

Internal Audit Reports

While there are mandatory corporate disclosures about the audit committee, the external auditor, and management, there are currently no mandated disclosures about a company's internal audit function. The audit committee report may be an indirect source of voluntary disclosures about internal audit. However, Carcello et al. (2002) find that the vast majority of a sample of these disclosures contains no mention of the internal audit function.

Former Securities and Exchange Commission chairman Harvey Pitt noted that it is in a company's best interest to provide governance disclosures beyond those currently mandated (Marshall 2005). Given the critical role of internal audit in corporate governance and benefits of reduced information asymmetry as a result of governance transparency, researchers have begun to explore the benefits of increased internal audit transparency (e.g., Archambeault et al. 2008; Holt and DeZoort 2009; Lapidés et al. 2007). For example, Lapidés et al. (2007) encourages

company consideration of providing an IAR detailing the composition, responsibilities, and activities of the internal audit function to external shareholders.

Holt and DeZoort (2009) provide the first empirical evidence on the potential usefulness of an IAR in investor judgment and decision-making. They manipulated company fraud risk and the presence of a descriptive IAR detailing the composition, responsibilities and activities of an effective internal audit function in an experiment administered to MBA students acting as proxies for nonprofessional investors. They find that IAR disclosure is positively related to investor confidence in company oversight effectiveness and financial reporting reliability. These disclosure effects are greater for companies with high fraud risk. Furthermore, their results indicate that confidence in oversight effectiveness and financial reporting reliability mediates the relation between the disclosure of an IAR and the likelihood of the investor to recommend the purchase of the company's stock. The current study will extend Holt and DeZoort (2009) by assessing the effects of two important internal audit characteristics on investor perceptions of disclosure credibility: (1) what kind of activities does the function perform (i.e., internal audit role), and (2) to whom does the function report (i.e., internal audit reporting relationship).

Internal Audit Role

The role of internal audit has changed over time (Bailey et al. 2003). While the role was traditionally assurance-related in nature, the IIA officially adopted a new definition of internal audit in 1999 in an attempt to focus on a more value-added approach of the function (e.g., Bou-Raad 2000; Krogstad et al. 1999). Under the new definition, the IIA (2007b) describes the internal audit function as “an independent, objective assurance and consulting activity designed to add value and improve an organization's operations.”

Although the work performed by internal audit can encompass a wide variety of activities, those activities can generally be classified as either assurance or consulting services (Bailey et al. 2003). Assurance services provide objective examinations and assessments of risk management, control, or governance processes within a company. Examples of assurance services include financial audits, compliance audits, or system security audits. Consulting services are services that are advisory in nature in which the customer requesting the service agrees upon the scope and nature of the service. Examples of consulting services include training programs, operational advice, or providing counsel (Reding et al. 2007).

After the passage of SOX, many internal audit departments were called upon to shift their role from focusing on traditional assurance services to providing consulting services related to the new compliance regulations (e.g., Krell 2005; Redmond et al. 2008). For example, the internal audit at Chevron refocused its efforts to supply controls documentation and training (Redmond et al. 2008). Six years after the passage of SOX, many internal audit functions are still burdened with the compliance consulting activities related to SOX, and many CAEs are anxious to return to traditional assurance activities (Redmond et al 2008). PricewaterhouseCoopers (Krell 2005, 20) notes:

Simply put, the legislation is diverting internal audit resources from risk-based auditing, creating the potential for dire consequences. That's because a failure to address key strategic and operational risks as well as compliance risk in an internal audit program undermines the effectiveness of internal audit, diminishes its strategic value to key stakeholders, and exposes the enterprise to greater operational and financial risks in the future.

According to assurance theory (e.g., Mautz and Sharaf 1961; Libby 1979; Libby et al. 2004) individuals perceive audited information to be more credible than unaudited information. This increase in perceived credibility results from a perception that more evidence gathering is required in order to provide the assurance. By its very nature, the

shift away from assurance services to consulting services reduces the amount of evidence gathered by internal audit resulting in a lowered level of assurance offered by the function.

Additionally, an internal audit function whose activities are primarily consulting-related may be perceived as lacking objectivity. During consulting projects, internal auditors often work closely with management (Breakspear 1998). These working relationships may lead to perceptions of objectivity impairments for the internal auditor as the internal auditors may be hesitant to report adverse findings (Greenspan et al. 1994). Furthermore, internal auditors are often called upon to test their own work performed during SOX compliance implementation. This situation represents an inherent objectivity impairment (Krell 2005). Source credibility theory (Birnbaum and Stegner 1979) highlights source bias as a critical component in information credibility evaluations. Accordingly, individuals perceive information as more credible to the extent that they believe the source is more objective.

Given the lack of audit evidence and the potential for objectivity impairment resulting from an internal audit function whose activities are primarily consulting-related, investor perceptions of disclosure credibility of financial statement information should be higher for internal audit functions whose work is primarily assurance-related. Stated formally:

H1a: Investor perceptions of disclosure credibility will be greater for internal audit functions whose work is primarily assurance-related than for those whose work is primarily consulting-related.

Mercer's (2004) framework for disclosure credibility notes that perceptions of the level of assurance are directly related to perceived disclosure credibility. Given that consulting-related work (vs. assurance-related) is likely to decrease the level of assurance through a lack of evidence or potential objectivity impairment, the main effects

of an increase in investor perceptions of disclosure credibility are expected to be explained by the mediating effect of investor perceptions of the level of assurance as depicted in the mediation model in Figure 1. Stated formally:

H1b: Investor perceptions of the level of assurance provided by internal audit will mediate the relation between internal audit role and investor perceptions of disclosure credibility.

Internal Audit Reporting Relationships

The IIA's Organizational Independence standard states that a company's CAE should report to a level that ensures the function can complete its duties (IIA 2007a). An appropriate reporting relationship is essential to ensuring that internal audit activities are not unduly influenced by management. However, there has been considerable debate (e.g., SEC 2003c; James 2003; Johnson 2006) about what reporting relationship best achieves the appropriate level of internal audit independence. The SEC (2003b) asked for comments regarding whether the responsibility for personnel decisions and oversight of the internal audit function should be placed directly with or under the supervision of the audit committee. The SEC chose not to act on the matter after receiving mixed comments from a variety of groups.³ The New York State Bar Association's response to the proposal noted that prior to the passage of the rule, the SEC should conduct research to determine potential problems associated with various reporting relationships (SEC 2003c).

Strategic reporting of the internal audit function involves the governance activities of the internal audit function such as charter approval, hiring or terminating the CAE, and receiving periodic results of internal audit activities. Administrative reporting involves the day-to-day activities of the internal audit function including human resource administration, budgeting, and

³ Commenters for the proposal included The IIA and the National Association of Corporate Directors. Commenters against the proposal included Deloitte, the NASDAQ, the New York State Bar Association, and the NYSE.

administration of internal policies and procedures (IIA 2002). The IIA (2007b) and Moody's Investor Services (Johnson 2006) recommend that the best practice to ensure internal audit independence is a dual reporting relationship where the CAE reports strategically to the audit committee and administratively to the CEO. In a survey of 379 CAEs in the IIA Global Audit Information Network (GAIN) database, 55% of internal audit respondents note that they report strategically to the audit committee. Furthermore, for administrative reporting, only 10% report to the CEO while 51% report to either the CFO or Controller (IIARF 2003). Moody's Investors Services notes that a reporting relationship to the CFO represents a conflict of interest attributable to the CFO's role in the company's financial reporting process and a potential for the CAE to be hesitant to report negative findings given the reporting relationship (Swanson 2006).

James (2003) finds that lenders perceive internal auditors that reported both strategically and administratively to the audit committee are more likely to prevent financial statement fraud than internal auditors that report both strategically and administratively to management. This study examines the effect of reporting relationship on investor perceptions of disclosure credibility. The two reporting relationships examined in this study are an internal audit function that reports strategically to the audit committee and administratively to the CEO and an internal audit function that reports both strategically and administratively to the CFO.

Source credibility theory (e.g. Walster et al. 1966; Birnbaum and Stegner 1979; Eagly and Chaiken 1993) provides a basis for predicting that the level of internal audit independence as proxied by reporting relationships will affect investor perceptions of disclosure credibility. According to this theory, individuals should place more reliance on information that they perceive as more credible. As previously mentioned, Birnbaum and Stegner (1979) highlight source bias as a critical component in information credibility evaluation, and individuals

perceive information as more credible to the extent that they believe the source has more objectivity. Gramling et al. (2004) find that in evaluating an internal auditor's objectivity, independence is generally the most important criterion.⁴ Thus, investor perceptions of disclosure credibility should increase as perceptions of the level of internal audit independence increases.

Stated formally:

H2a: Investor perceptions of disclosure credibility will be greater for companies where internal audit reports strategically to the audit committee and administratively to the CEO than for companies where internal audit reports strategically and administratively to the CFO.

Mautz and Sharaf (1961) note that auditor independence is critical in determining the level of assurance associated with an audit. Based upon this finding and the framework for investor perceptions of disclosure credibility provided by Mercer (2004), the direct effects of an increase in investor perceptions of disclosure credibility attributable to reporting relationships are expected to be explained indirectly through the effect of investor perceptions of the level of assurance as depicted in the mediation model in Panel B of Figure 2. Stated formally:

H2b: Investor perceptions of the level of assurance provided by internal audit will mediate the relation between the internal audit reporting relationship and investor perceptions of disclosure credibility.

III. RESEARCH DESIGN AND METHOD

Design and Instrument

This study used a 2x2 ANCOVA design with internal audit role (i.e., primarily assurance-related or consulting-related) and reporting relationship (i.e., CAE reports strategically to the

⁴ The IIA (2007a) refers to *individual* objectivity and *organizational* independence. Individual objectivity is a mental attitude that results from being unbiased and impartial. Organization independence is key to preventing conflicts of interests that may impair individual objectivity.

audit committee and administratively to the CEO, or reports strategically and administratively to the CFO) manipulated randomly between subjects. A computer-based instrument randomly assigned participants to one of four cases (or a control case) that described a scenario where the participants were asked to review a hypothetical company's information before answering questions related to the information (See Appendix).⁵

After reading the consent form and instructions, the participants were first provided with company background information. They were also given summary financial information contained in the company's annual financial report. The instrument stated that management reports that both internal controls over financial reporting and entity-wide controls are operating effectively, and that both the audit opinion on the financial statements and internal controls over financial reporting opinion were unqualified.

All of the participants aside from the control group were also provided with an IAR (See Appendix). The IAR used in the experiment was patterned after the proposed model IAR used in Archambeault et al. (2008). Specifically, the IAR was purely descriptive in nature and stated that the internal audit function was entirely in-house. The report also contained the study's two manipulations.

The first manipulation in the IAR was the internal audit role (*ROLE*). The wording for the manipulations is consistent with DeZoort et al. (2001). Specifically, in the assurance condition, the IAR stated that internal auditors primarily perform compliance and financial audits and evaluate the adequacy and effectiveness of existing controls. The consulting condition stated that internal auditors primarily perform consulting activities with the explicit goal of adding value to

⁵ The Institutional Review Board for the Protection Human Subjects approved all experimental materials prior to the study. In addition, each participant will receive a Consent Form stating that their participation is entirely voluntary and that their responses will remain anonymous.

the company. The report provided examples of consulting services including training programs and offering advice on the effectiveness and efficiency of operational programs.

The second manipulation in the IAR was the nature of the internal audit reporting relationship (*RELATE*). IIA Practice Advisory 1110-2, *Chief Audit Executive (CAE) Reporting Lines*, provides the basis for developing three tasks commonly associated with strategic reporting and three tasks commonly associated with administrative reporting. These tasks, as described in the instrument, are as follows:

- (*Strategic*) Approve the internal audit risk assessment and related audit plan.
- (*Strategic*) Approve all decisions regarding the appointment, removal, and compensation of the CAE.
- (*Strategic*) Receiving communications of the results of internal audit activities.
- (*Administrative*) Budgeting and management accounting.
- (*Administrative*) Human resource administration, including internal audit staff personnel evaluations and compensation.
- (*Administrative*) Administration of the company's internal policies and procedures.

The case with the weakest independence noted that the company's CFO was responsible for all of the strategic and administrative tasks. The case with the strongest independence noted that the audit committee was responsible for the strategic tasks and the CEO was responsible for the administrative tasks.

After reviewing the background information and IAR, participants were asked questions about perceived disclosure credibility of the financial information and level of assurance. Specifically, participants were asked how credible they perceived the information in the financial disclosures to be. The question used a scale anchored at 1 = "Not at all Credible" and 9 = "Extremely Credible". Additionally, they were asked how sure they were that the financial information provided by management was accurate. The question used a scale anchored at 1 = "Not at all sure" and 9 = "Extremely sure".

Prior research (e.g., Jennings 1987; Williams 1996) has shown positive relation between disclosure credibility and security prices. Consistent with Hirst et al. (2007), participants were asked to provide a price-earnings multiple that should be applied to the current year's net income. The P/E multiple assessed investor perceptions of the firm's information risk and growth opportunities. Participants were told that other companies in the industry typically had multiples of between 10 and 30. These responses were used in supplemental analysis to examine whether investor perceptions of disclosure credibility ultimately manifested themselves in their pricing decisions.

Participants also provided demographic information related to their age, gender, education, professional certifications/licenses. Additionally, they provided assessments of their investing knowledge (experience) using 9-point scales with 1 = "no investing knowledge" (experience) and 9 = "a great deal of investing knowledge" (experience) to control for differences in the investment backgrounds of the participants.⁶ Next, participants provided assessments of their knowledge about the role of internal audit and how important independence is to maintaining an effective internal audit function. The first question asked participants how much knowledge they had about the role of internal auditing in the overall governance of a firm. The question used a 9-point scale with 1 = "no knowledge of their role" and 9 = "a great deal of knowledge about their role." The second question asked participants how important independence is to maintaining an effective internal audit function. The question used a 9-point scale with 1 = "not very important" and 9 = "very important."

⁶ This study reports the results of two self-reported knowledge questions (i.e., investing knowledge and knowledge of internal audit). The results of these assessments should be interpreted with caution as they do not represent an objective knowledge measure.

Participants

The study's participants were MBA students from three universities in the United States. Numerous studies (e.g., Hirst et al. 1999; Maines and McDaniel 2000; Hodge 2001; Frederickson and Miller 2004; Hodge et al. 2004; Elliott 2007; Hirst et al. 2007) have used MBA students as nonprofessional investors. Nonprofessional investors make up a significant component of United States capital markets. The NYSE (2002) reports that 33.8 million people directly invest in the stock market. Bogle (2005) finds that nonprofessional investors own 34% of outstanding shares.

MBA student e-mail addresses were obtained through university contacts. Each student was then asked via e-mail to volunteer for an investor decision-making study and provided with a hyperlink to access the electronic experiment (See Appendix). Since prior research (e.g., Robertson and Bellenger 1978) suggests that donations to charity may increase participation, the students were told that a \$10 donation would be made to St. Jude Children's Research Hospital for each completed response. A total of 399 students were initially asked to participate in the study. A second request for participation was made two weeks following the initial request. Participant responses totaled 101 (18 randomly assigned to the control group and 83 randomly assigned to the experimental groups), which equates to a response rate of 25%.⁷

IV. RESULTS

Manipulation Checks

Two questions assessed the efficacy of the *ROLE* and *RELATE* manipulations. The participants were asked whether the work of the internal audit function was primarily assurance

⁷ The 25% response rate is comparable to similar to prior internet-based experiments. For example, Beeler et al. (2001); O'Donnell and Schulz (2003); and Holt and DeZoort (2009) reported response rates of 11%, 36%, and 32%, respectively.

or consulting-related as a check for the *ROLE* manipulation. Of the 83 total participants, 72 passed the *ROLE* manipulation check. This equates to a pass rate of 87%.

The *RELATE* manipulation asked to whom did the CAE report for approving the internal audit risk assessment and related audit plan and all decisions regarding the appointment, removal, and compensation of the CAE. Participants were given the choices of the audit committee or CFO for the *RELATE* manipulations check questions. Of the 83 total participants, 73 passed the *RELATE* manipulation check which equates to a pass rate of 88%. Participants failing at least one manipulation check were eliminated for hypothesis testing.⁸ This elimination resulted in a final sample of 66 participants in the experimental groups.

Participant Demographics and Control Variables

Table 1 presents the descriptive statistics for the participant demographics and control variables. The majority of the 66 participants were female (60%). The average age of all participants was 28 years with a standard deviation of 6.01 years. The participants found the case to be both realistic (Mean = 6.55, SD = 1.19 on a 9-point scale with 1 = “very unrealistic” and 9 = “very realistic”) and understandable (Mean = 6.46, SD = 1.15 on a 9-point scale with 1 = “very difficult to understand” and 9 = “very easy to understand”). Additionally, the means for both the realistic and understandable items are significantly greater (p – value < 0.001) than the scale midpoints.

Participants were also asked questions about their investing knowledge and experience. The results suggest that they were knowledgeable investors (Mean = 6.30, SD = 1.44 on a 9-point scale with 1 = “no investing knowledge” and 9 = “a great deal of investing knowledge”). Additionally, the results suggest that the participants had investment experience (Mean = 5.82,

⁸ The inclusion of responses of participants failing at least one manipulation check produced similar results for H1a, H2a, and H1b. However, the results of significant mediation for H2b discussed later in the paper was not found with the inclusion of manipulation check failures.

SD = 1.61 on a 9-point scale with 1 = “no investment experience” and 9 = “a great deal of investment experience”). Furthermore, the means for both investing knowledge and investing experience are significantly greater (p – value < 0.001) than the scale midpoints.

Two additional questions were asked about their knowledge of the role of internal audit and how important independence is to internal audit. The results suggest that they were knowledgeable about the role of internal audit (Mean = 5.29, SD = 1.21 on a 9-point scale with 1 = “no knowledge of their role” and 9 = “a great deal of knowledge about their role”). Additionally, the results suggest that the participants found independence important to maintaining an effective internal audit function (Mean = 6.15, SD = 1.37 on a 9-point scale with 1 = “not very important” and 9 = “very important”). The means for both knowledge of the role of internal audit and internal audit independence importance are significantly greater (p – value < 0.05 and 0.001, respectively) than the scale midpoints.

Table 1 also presents one-way ANOVA results to test for differences in the participant demographics and control variables among groups. The results indicate significant differences (p – value < 0.10) among the groups in the investing experience and internal audit independence importance questions. Pairwise comparisons using Tukey’s test indicate that participants’ investing experience in the AC-CEO/Consulting condition (Mean = 6.40, SD = 1.88) is significantly greater (p – value < 0.05) than the CFO/Assurance condition (Mean 5.06, SD = 1.80). Pairwise comparison testing also indicates that participants’ assessments of internal audit independence importance in the AC-CEO/Assurance condition (Mean = 6.82, SD = 1.19) are significantly greater (p – value < 0.05) than the AC-CEO/Consulting condition (Mean 5.87, SD = 1.55) and the CFO/Consulting condition (Mean = 5.63, SD = 1.31). Given the differences found among the groups, investing experience (*INV_EXP*) and internal audit independence importance

(*IND_IMP*) were included as covariates in the hypothesis test analyses. However, the test results are robust to the removal of these covariates.

Hypothesis Test Results

Main Effect Results

Table 2 presents the ANCOVA and descriptive cell results for perceived disclosure credibility used to test H1a and H2a. The interaction between *ROLE* and *RELATE* is insignificant (p -value = 0.470). The results in Table 2, Panel A, indicate a significant main effect for *RELATE* (p -value = 0.034). However, the *ROLE* main effect is insignificant (p -value = 0.507).

The *INV_EXP* covariate is insignificant (p -value = 0.167). However, the *IND_IMP* covariate is significant (p -value = 0.039). Additional testing reveals a significant correlation between importance of internal audit independence and perceived disclosure credibility ($r = 0.326$, two-tailed p -value = 0.007). This result suggests that the more important that participants believed independence was to maintaining an effective internal audit function, the greater their perceptions of disclosure credibility.

The Table 2, Panel B, *ROLE* results show no difference in the means (p -value = 0.395, one-tailed) between the consulting condition (Mean = 5.65, SD = 1.38) and the assurance condition (Mean = 5.74, SD = 1.58). However, the *RELATE* results support Hypothesis 2a by showing that perceived disclosure credibility is significantly greater (p -value = 0.025, one-tailed) in the AC/CEO condition (Mean = 6.06, SD 1.43) than the CFO condition (Mean = 5.35, SD = 1.45). Overall, the ANCOVA and descriptive statistics results indicate that H1a is not supported and H2a is supported.

Given the manipulation check results, ineffectiveness in the *ROLE* manipulation is unlikely to be the cause of the lack of results found in H1a. In an attempt to try to explain the

lack of results, I analyzed participants' assessments of how valuable they believe internal audit was in ensuring reliable financial reporting. The results indicate that participants perceived internal audit to be significantly more valuable (one-tailed p -value = 0.079) in ensuring reliable financial reporting in the assurance condition than the consulting condition. Therefore, even though participants found *ROLE* to be significant in determining the effectiveness of internal audit in ensuring reliable financial reporting, there was no significant difference in their perception of the credibility of the disclosed financial information. One possible explanation for this finding is that the incremental benefit of increased levels of assurance provided by an internal audit function whose work is primarily assurance-related is diminished when combined with the level of assurance provided by external audit.

Mediation Testing Results

Mediation analysis was used to test H1b and H2b. Mediation testing is useful in that it allows for a better understanding of the extent that an intervening variable (i.e., the mediator) accounts for the relationship between the independent and dependent variable (Baron and Kenny 1986). Perfect mediation occurs when the mediating variable fully explains the relationship between two variables (i.e., a once significant relationship between an independent and dependent variable becomes insignificant after controlling for the mediator).

For H1b (H2b), the mediator is the perceived level of assurance, the dependent variable is perceived disclosure credibility, and the independent variable is internal audit role (reporting relationship). The study follows Baron and Kenny's (1986) three-step regression approach to test for this mediation. This test requires the estimation of three regression models:

$$\text{MEDIATOR}_i = \alpha_0 + \alpha_1 \text{IV}_i + e_i \quad (1)$$

$$\text{DV}_i = \beta_0 + \beta_1 \text{IV}_i + e_i \quad (2)$$

$$\text{DV}_i = \delta_0 + \delta_1 \text{IV}_i + \delta_2 \text{MEDIATOR}_i + e_i \quad (3)$$

For mediation to exist, the independent variable (IV) must first significantly affect the mediator variable in equation (1). Second, the independent variable must significantly affect the dependent variable (DV) in equation (2). Third, the mediator must then significantly affect the dependent variable in equation (3). In addition, the effect of the independent variable on the dependent variable must be less in equation (3) than in equation (2). Given the requirements in equation (2) that the independent variable must affect the dependent variable, H1b is not supported because a significant main effect is not found in H1a. Therefore, mediation results are only presented for H2b.

The results in Table 3 (as depicted in Figure 3) provide support for the H2b prediction that perceived level of assurance will mediate the relation between internal audit reporting relationship and perceived disclosure credibility. The equation (1) results indicate that internal audit reporting relationship is positively related to investor perceptions of the level of assurance (p -value = 0.03, one-tailed). In equation (2), internal audit reporting relationship is positively related to perceived disclosure credibility (p -value = 0.03, one-tailed). Finally, the equation (3) results show that perceived level of assurance is positively related to perceived disclosure credibility, even in the presence of the internal audit reporting relationship (p -value < 0.001, one-tailed). In addition, the effect of the internal audit reporting relationship on perceived disclosure credibility is less in equation (3) ($\delta_1 = 0.19$) than in equation (2) ($\beta_1 = 0.71$). Furthermore, a significant internal audit reporting relationship in equation (2) becomes insignificant in equation (3) (p -value = 0.20, one-tailed). The Sobel test statistic (Baron and Kinney 1986) provides evidence of mediation (p -value = 0.07, two-tailed). These results indicate that investor perceptions of the level of assurance over the disclosures explain the relationship between internal audit reporting relationship and perceived disclosure credibility.

Supplemental Analysis

Control Group Analysis

In order to assess the potential that investor perceptions are not dependent on the disclosure of an IAR, an additional condition was added to the instrument. Specifically, the added control group condition did not include an IAR. Univariate analysis of the descriptive statistics for the experimental and controls groups is presented in Table 4. Analyses using *t*-tests indicate that participants in the experimental group perceived higher disclosure credibility (*CREDIBLE*, one-tailed *p*-value < 0.01), higher levels of assurance (*SURE*, one-tailed *p*-value < 0.01), and higher price-earnings multiples (*PE*, one-tailed *p*-value < 0.01) than participants in the control group.

Structural Equation Analysis

In addition to the hypothesis and mediation testing, structural equation analysis was used to test the fit of an overall model as depicted in Figure 4. Structural equation analysis is beneficial in that it allows for testing an overall model from a macro-level perspective which may provide a more complete understanding of the data than can be inferred from micro-level statistical testing of individual items. However, micro-level statistical testing techniques are sometimes more appropriate since structural equation analysis requires large sample sizes (Kline 1998). For purposes of this study, structural equation analysis was used to examine whether the investor judgment results found in the primary analysis ultimately affected investor pricing decisions.

The primary hypothesis testing, as explained in the prior subsections, tested the effects of internal audit role and reporting relationship on perceived disclosure credibility through the mediating effect of investor perceptions of the level of assurance. The link between disclosure

credibility and price-earnings multiple is expected to be positive because prior research has already shown a positive relation between credibility and security prices (e.g., Jennings 1987; Williams 1996; Hirst et al. 2007). This analysis tested the relationships between the primary independent variables, mediating variables, the dependent variable, and the price-earnings multiple decision.

The structural equation results are presented in Table 5 and depicted in Figure 5. The overall fit statistics (NFI = 0.94, TLI = 1.02, CFI = 1.00) indicate that the model has an adequate fit (Bentler and Bonnet 1980). The standardized parameter estimates for the model were examined by using the significance of individual path coefficients. Consistent with expectations, the standardized parameter estimates indicate that internal audit reporting relationship is significantly associated with perceived level of assurance (path coefficient = 0.23, two-tailed p -value = 0.06), perceived level of assurance is significantly associated with perceived disclosure credibility (path coefficient = 0.79, two-tailed p -value < 0.001), and perceived disclosure credibility is significantly associated with the price-earnings multiple (path coefficient = 0.39, two-tailed p -value < 0.001). Similar to prior analysis, internal audit role is not significantly associated with perceived level of assurance (path coefficient = 0.11, two-tailed p -value = 0.35). Tests of the square multiple correlations (R^2) indicate that model explains 6.4% of the variance in the perceived level of assurance, 62.7% of the variance in perceived disclosure credibility, and 15.5% of the variance in the price-earnings multiple.

V. DISCUSSION AND CONCLUSION

This study examined the effects of internal audit role and reporting relationship on investor perceptions of disclosure credibility. This section discusses the study's findings and

implications from research, policy, and practical perspectives. The section concludes with a discussion of limitations and suggestions for future research.

Overview of Results

The first internal audit characteristic examined in this study was internal audit role. The study predicted that participants would find higher perceived disclosure credibility when internal audit's role was primarily assurance-related than consulting-related. It was also predicted that perceived level of assurance would explain the relationship between internal audit role and perceived disclosure credibility. The results indicate that internal audit role did not significantly affect perceived disclosure credibility.

The second internal audit characteristic examined in the study was internal audit reporting relationship. The study predicted that participants would find higher perceived disclosure credibility when the CAE reported strategically to the audit committee and administratively to the CEO than when the CAE reported both strategically and administratively to the CFO. It was also predicted that perceived level of assurance would explain the relationship between internal audit reporting relationship and perceived disclosure credibility. The results indicate that participants perceived disclosure credibility to be higher when the CAE reported to the audit committee/CEO versus the CFO. Furthermore, the results indicate that this increase in perceived disclosure credibility was explained by investor perceptions of the level of assurance associated with the disclosure. Supplemental analyses using structural equation modeling indicates that these effects ultimately led to higher price-earnings multiple assessments.

Implications

From a research perspective, the study contributes to existing internal audit transparency literature (e.g. Archambeault et al. 2008; Holt and DeZoort 2009) by assessing the effects

associated with varying the types of information contained in an IAR. The findings also contribute to the internal audit and corporate governance literatures (e.g., Bailey et al. 2003; Gramling et al. 2004; Carcello et al. 2005) by providing further evidence of the importance of internal audit as a primary governance mechanism in investor judgment and decision-making. Additionally, the results contribute to the literature on user perceptions of various internal audit characteristics (e.g., Swanger and Chewning 2001; James 2003) by examining the effects that internal audit role and reporting relationship have on investor judgment and decision-making. The findings also contribute to the investor judgment and decision-making literatures (e.g., Mercer 2004; Field et al. 2005) by providing evidence on the mediating effects of assurance on perceptions of disclosure credibility. Finally, the study extends research (e.g., Kinney 2000) on the benefits of auditor independence and assurance for investors.

The research has implications for policymakers. First, the study contributes to the understanding of the implications of various reporting relationship for internal audit, which is an issue that remains unresolved with the SEC (2003b). Second, the findings of the study are potentially helpful to policymakers considering the need for increased corporate governance disclosures (e.g., Marshall 2005). Finally, while the NYSE has adopted rules mandating that companies maintain an internal audit functions, the NASDAQ and American Stock Exchange do not require members to have an internal audit function. This research is potentially helpful to rulemaking bodies as they consider additional rules over appropriate governance structures for member companies.

This research has potential practical implications. The study contributes to calls in the contemporaneous governance literatures (e.g., Lapidés et al. 2007; Archambeault et al. 2008) for companies to provide increased transparency of internal audit to external stakeholders.

Additionally, the study provides evidence on the effects of maintaining an internal audit function that is free from conflicts of interests arising from organizational reporting relationships. This research is important given concerns by groups such as Moody's Investor Services (Johnson 2006) over the appropriateness of the internal audit reporting relationships currently found in practice. The findings also provide information that is potentially helpful to audit committees/boards of directors in assessing the costs and benefits associated with the activities undertaken by the internal audit function and the need for additional disclosures beyond those that are currently mandated.

Limitations and Future Research

Several limitations and opportunities for future research should be considered when evaluating the study's implications. Bryant et al. (2004) note that internet-based experiments present an inherent lack of control over the administration of the experiment. While experimental instructions urged participants to not seek outside help, the possibility remains that participant responses may have been influenced by outside parties. Second, the planned experimental participants are MBA students serving as nonprofessional investors. To the extent that these participants are not appropriate proxies, the results of the study may not be generalizable to nonprofessional investors. Furthermore, additional research is needed to determine the generalizability to other stakeholders (e.g., lenders, professional investors). Third, the information contained in the experiment represents a condensed version of the information that would be available in an actual company setting. Fourth, the mediation model used in the study test only for the mediation affects of internal audit reporting relationship. It may be the case that the mediation relationship is the result of other unknown factors. Additional research is needed

to determine the effects of varying additional types of information in the IAR and of continuing IAR disclosures on investor judgment and decision-making.

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APPENDIX

Research Instrument

Background:

Trexler Manufacturing, Inc. (Trexler) is a seven year old diversified company that is headquartered in the United States. Trexler develops, manufactures, and markets various consumer products. Trexler's products are marketed and sold in several countries through wholly-owned subsidiaries and independent distributors. The financial statement audits of Trexler are performed by an international public accounting firm. Trexler has always received unqualified (i.e., "clean") opinions from its auditors on its financial statements and internal controls over financial reporting.

Trexler released their annual statements for the year ended December 31, 2007 today. Based upon your initial review of the financial information you noted that management stated that internal controls over financial reporting were operating effectively as of December 31, 2007. Additionally, Trexler's external auditors provided an unqualified opinion on both the financial statements and the internal controls over financial reporting.

Financial Information:

The following condensed balance sheets for the past two years and income statements for the past three years were also included in the annual report (presented in thousands of dollars).

	2007	2006
Total Assets (\$)	1,818,430	1,724,111
Total Liabilities (\$)	917,012	875,618
Total Stockholders' Equity (\$)	901,418	848,493

	2007	2006	2005
Total Revenues (\$)	1,227,168	1,154,821	\$1,087,923
Total Expenses (\$)	(1,096,561)	(1,036,065)	(971,305)
Net Income (\$)	130,607	118,756	116,618

In addition to the standard External Auditor Report, Management Discussion and Analysis, Management Report on Internal Controls, and Audit Committee Report, the following disclosure was also included in the annual report:

AC/CEO and Assurance Manipulations:

Internal Audit Report

Composition:

Trexler Manufacturing, Inc. maintains an in-house Internal Audit Department. The department includes a Chief Audit Executive that supervises the work of other internal auditors in the department.

Responsibility:

The Internal Audit Department of Trexler Manufacturing, Inc. acts under a written charter. This department is responsible, for, among other things, the reliability and integrity of financial and operational information; the safeguarding of assets; and the compliance with laws, regulations, and contracts.

Accountability:

The independence of the Internal Audit Department is established by the Company's organizational and reporting structure. This charter specifies a dual reporting relationship where the Company's Chief Audit Executive reports to the [Audit Committee](#) for:

- Approving the internal audit risk assessment and related audit plan.
- Approving all decisions regarding the appointment, removal, and compensation of the Chief Audit Executive.
- Communications of the results of internal audit activities.

The charter further specifies that the Chief Audit Executive reports to the [Chief Executive Officer \(CEO\)](#) for:

- Budgeting and management accounting related to the Internal Audit Function.
- Human resource administration, including internal audit staff personnel evaluations and compensation.
- Administration of the company's internal policies and procedures.

Activities

The activities of the Internal Audit Department are [primarily assurance-related](#). The internal audit staff routinely performs compliance and financial audits which include evaluating the adequacy and effectiveness of existing controls.

CFO and Consulting Manipulations:

Internal Audit Report

Composition:

Trexler Manufacturing, Inc. maintains an in-house Internal Audit Department. The department includes a Chief Audit Executive that supervises the work of other internal auditors in the department.

Responsibility:

The Internal Audit Department of Trexler Manufacturing, Inc. acts under a written charter. This department is responsible, for, among other things, the reliability and integrity of financial and operational information; the safeguarding of assets; and the compliance with laws, regulations, and contracts.

Accountability:

The independence of the Internal Audit Department is established by the Company's organizational and reporting structure. This charter specifies a reporting relationship where the Company's Chief Audit Executive reports to the [Chief Financial Officer](#) (CFO) for:

- Approving the internal audit risk assessment and related audit plan.
- Approving all decisions regarding the appointment, removal, and compensation of the Chief Audit Executive.
- Communications of the results of internal audit activities.
- Budgeting and management accounting related to the Internal Audit Function.
- Human resource administration, including internal audit staff personnel evaluations and compensation.
- Administration of the company's internal policies and procedures.

Activities

The activities of the Internal Audit Department are [primarily consulting-related](#). The internal audit staff routinely performs services with the explicit goal of adding value to the company. Examples of these services include providing training programs and offering advice of the effectiveness and efficiency of operational programs.

Table 1
Participant Demographics

	Consulting		Assurance		Study	<i>F</i> -Value (<i>p</i> -value)
	CFO	AC/CEO	CFO	AC/CEO	Total	
Group Size	16	15	18	17	66	
Gender:						
Female	56%	53%	72%	53%	60%	0.86
Male	44%	47%	28%	47%	40%	(0.465)
Total	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	
Age:						
Mean	27 years	29 years	29 years	28 years	28 years	0.31
Std. dev.	5.19	5.35	8.55	4.33	6.01	(0.817)
Understandable:						
Mean	6.31	6.40	6.33	6.77	6.46	0.56
Std. dev.	1.20	1.30	1.09	1.09	1.15	(0.645)
Realistic:						
Mean	6.38	6.13	6.72	6.88	6.55	1.31
Std. dev.	1.20	1.25	1.18	1.11	1.19	(0.279)
Investing Knowledge:						
Mean	6.13	7.00	5.83	6.35	6.30	2.00
Std. dev.	1.03	1.36	1.62	1.50	1.44	(0.124)
Investing Experience:						
Mean	6.06	6.40	5.06	5.88	5.82	2.26
Std. dev.	0.93	1.88	1.80	1.45	1.61	(0.090)
Internal Audit Role Knowledge:						
Mean	4.94	5.53	5.11	5.59	5.29	1.13
Std. dev.	1.34	1.25	1.08	1.18	1.21	(0.343)
Internal Audit Independence Importance:						
Mean	5.63	5.87	6.22	6.82	6.15	2.54
Std. dev.	1.31	1.55	1.26	1.19	1.37	(0.064)

This table presents the participant demographics for each of the four experimental groups. Significant *p*-values are in bold. Between-sample tests of differences in means are based on one-way ANOVA tests.

Table 2
Perceived Disclosure Credibility Results – H1a and H2a

Panel A: ANCOVA Results for Perceived Disclosure Credibility

Source	ANCOVA		
	Pred. Sign	F-value	p-value
Test Variables			
<i>ROLE</i>	+ (H1a)	0.44	0.507
<i>RELATE</i>	+ (H2a)	3.47	0.034
<i>ROLE</i> x <i>RELATE</i>	?	0.53	0.470
Covariates			
<i>INV_EXP</i>	?	1.95	0.167
<i>IND_IMP</i>	?	4.47	0.039

Panel B: Descriptive Statistics for Perceived Disclosure Credibility

		CFO	AC/CEO	Total
Consulting	Mean	5.43	5.87	5.65
	SD	1.67	0.99	1.38
	<i>N</i>	16	15	31
Assurance	Mean	5.27	6.24	5.74
	SD	1.27	1.75	1.58
	<i>N</i>	18	17	35
Total	Mean	5.35	6.06	
	SD	1.45	1.43	
	<i>N</i>	34	32	

This table presents the ANCOVA results and descriptive statistics for perceived disclosure credibility. Participants provided an assessment of their perceived credibility of the financial information using a 9-point scale with endpoints labeled “not at all credible” and “extremely credible.” *ROLE* is a variable coded as 0 for consulting or 1 for assurance. *RELATE* is a variable coded as 0 if internal audit reports strategically and administratively to the CFO or 1 if internal audit reports strategically to the AC and administratively to the CEO. *INV_EXP* is the participant’s assessment of their investing experience using a 9-point scale with endpoints labeled “no investment experience” and “a great deal of investment experience.” *IND_IMP* is the participant’s assessment of the importance of independence to maintaining an effective internal audit function using a 9-point scale with endpoints labeled as “not very important” and “very important.” Between-sample tests of differences in means are based on two-sample t-tests. Total consulting means are not significantly different than total assurance means (one-tailed *p*-value = 0.395). However, the total AC/CEO means are significantly different than the total CFO means (one-tailed *p*-value = 0.025).

Table 3
Mediation Test Results – H2b

Equation	Dependent variable	Coefficients			F-value	Adj. R^2
		Intercept	<i>RELATE</i>	<i>SURE</i>		
(1)	<i>SURE</i>	4.65	0.64		3.44	3.6%
	Std. error	0.54	0.35			
	p-value	(< 0.001)	0.03			
(2)	<i>CREDIBLE</i>	4.64	0.71		3.97	4.4%
	Std. error	0.56	0.36			
	p-value	(< 0.001)	0.03			
(3)	<i>CREDIBLE</i>	0.92	0.19	0.80	53.95	62.0%
	Std. error	0.52	0.23	0.08		
	p-value	0.04	0.20	(< 0.001)		

This table presents the mediation test results for H2b. Participants provided an assessment of their perceived credibility of the financial information (*CREDIBLE*) using a 9-point scale with endpoints labeled “not at all credible” and “extremely credible.” *SURE* is an assessment of how sure participants were that the financial information was accurate using a 9-point scale with endpoints labeled “not at all sure” and “extremely sure.” *RELATE* is a variable coded as 0 if internal audit reports strategically and administratively to the CFO or 1 if internal audit reports strategically to the AC and administratively to the CEO. Reported *p*-values signify one-tailed significance levels, unless otherwise noted. Significant *p*-values are in bold. Sobel test statistics for mediation: $z = 1.90$, p -value = 0.07 (two-tailed).

Table 4
Control Group Analysis—Descriptive Statistics

Variable	Sample	Pred.	Min.	Mean	Med.	SD	Max.	<i>t</i> -stat (<i>p</i> -value)
<i>CREDIBLE</i>	Experimental	+	3.00	5.70	5.00	1.48	9.00	2.52
	Control		1.00	4.56	5.00	1.76	8.00	(<0.01)
<i>SURE</i>	Experimental	+	1.00	5.61	5.00	1.44	9.00	3.64
	Control		1.00	4.00	4.00	1.72	7.00	(<0.01)
<i>P/E</i>	Experimental	+	8.00	19.38	20.00	3.58	25.00	3.86
	Control		10.00	15.72	15.50	3.56	20.00	(<0.01)

This table reports descriptive statistics for variables used in the analysis. The experimental (control) sample is comprised of 66 (18) participants. Between-sample tests of differences in means are based on two-sample t-tests. Reported *p*-values signify one-tailed significance levels. Significant *p*-values are in bold.

Table 5
Structural Equation Model Results

Links	Standardized path coefficient	<i>p</i>-value
<i>RELATE</i> – <i>SURE</i>	0.226	0.060
<i>ROLE</i> - <i>SURE</i>	(0.112)	0.353
<i>SURE</i> – <i>CREDIBLE</i>	0.792	<0.001
<i>CREDIBLE</i> – <i>PE</i>	0.394	<0.001

This table presents results for the predicted structural equation model in *Figure 3*. Participants provided an assessment of their perceived credibility of the financial information (*CREDIBLE*) using a 9-point scale with endpoints labeled “not at all credible” and “extremely credible.” *SURE* is an assessment of how sure participants were that the financial information was accurate using a 9-point scale with endpoints labeled “not at all sure” and “extremely sure.” *RELATE* is a variable coded as 0 if internal audit reports strategically and administratively to the CFO or 1 if internal audit reports strategically to the AC and administratively to the CEO. *ROLE* is a variable coded as 0 for consulting or 1 for assurance. *PE* is an assessment of the multiple that should be applied to Trexler’s net income in calculating the share price for Trexler. Reported *p*-values signify two-tailed significance levels. Significant *p*-values are in bold. The overall fit indices of the model are as follows: NFI = 0.94, TLI = 1.02, and CFI = 1.00. The explained variances are as follows: *SURE* = 0.064, *CREDIBLE* = 0.627, and *PE* = 0.155.

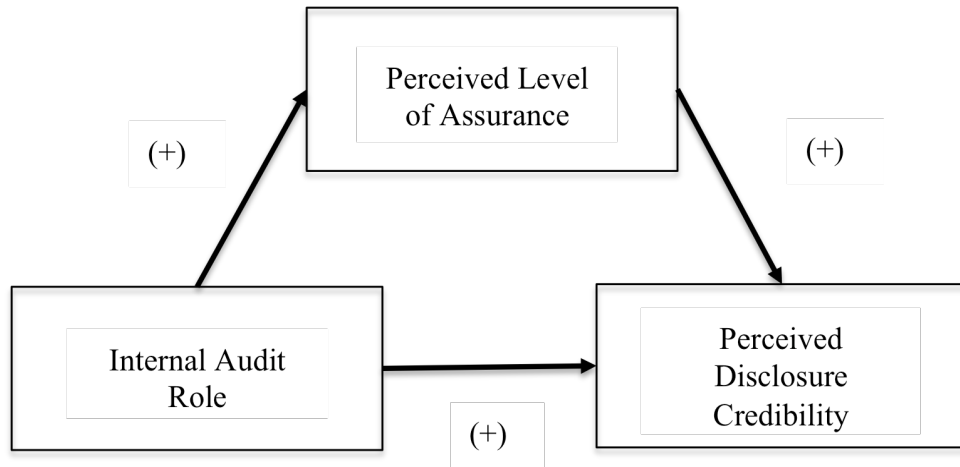


Figure 1. Predicted Mediation Model for H1b

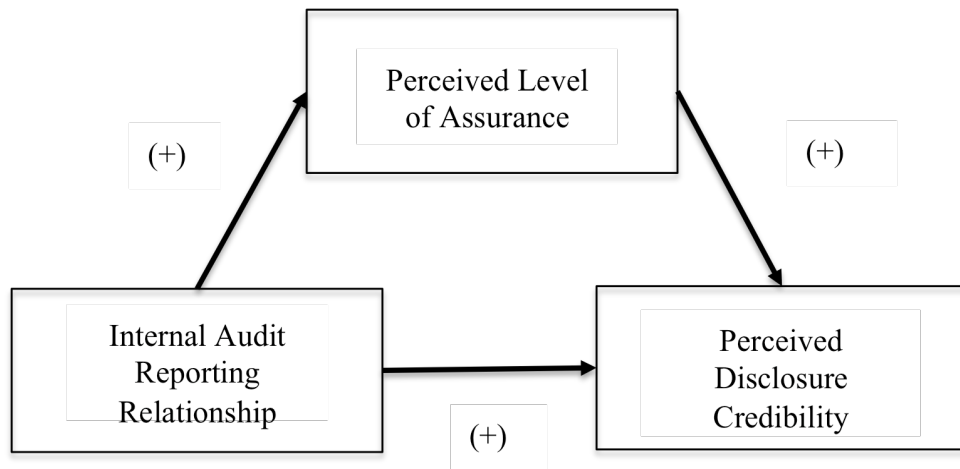


Figure 2. Predicted Mediation Model for H2b

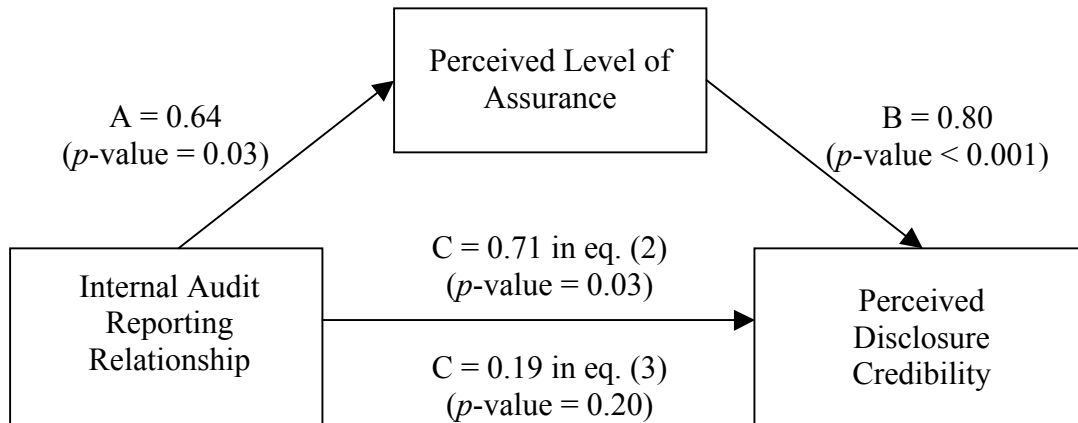


Figure 3. Observed Mediation Model for H2b

Participants provided an assessment of their perceived credibility of the financial information using a 9-point scale with endpoints labeled “not at all credible” and “extremely credible.” Perceived level of assurance is an assessment of how sure participants were that the financial information was accurate using a 9-point scale with endpoints labeled “not at all sure” and “extremely sure.” Internal audit reporting relationship is a variable coded as 0 if internal audit reports strategically and administratively to the CFO or 1 if internal audit reports strategically to the AC and administratively to the CEO. Reported p -values are one-tailed.

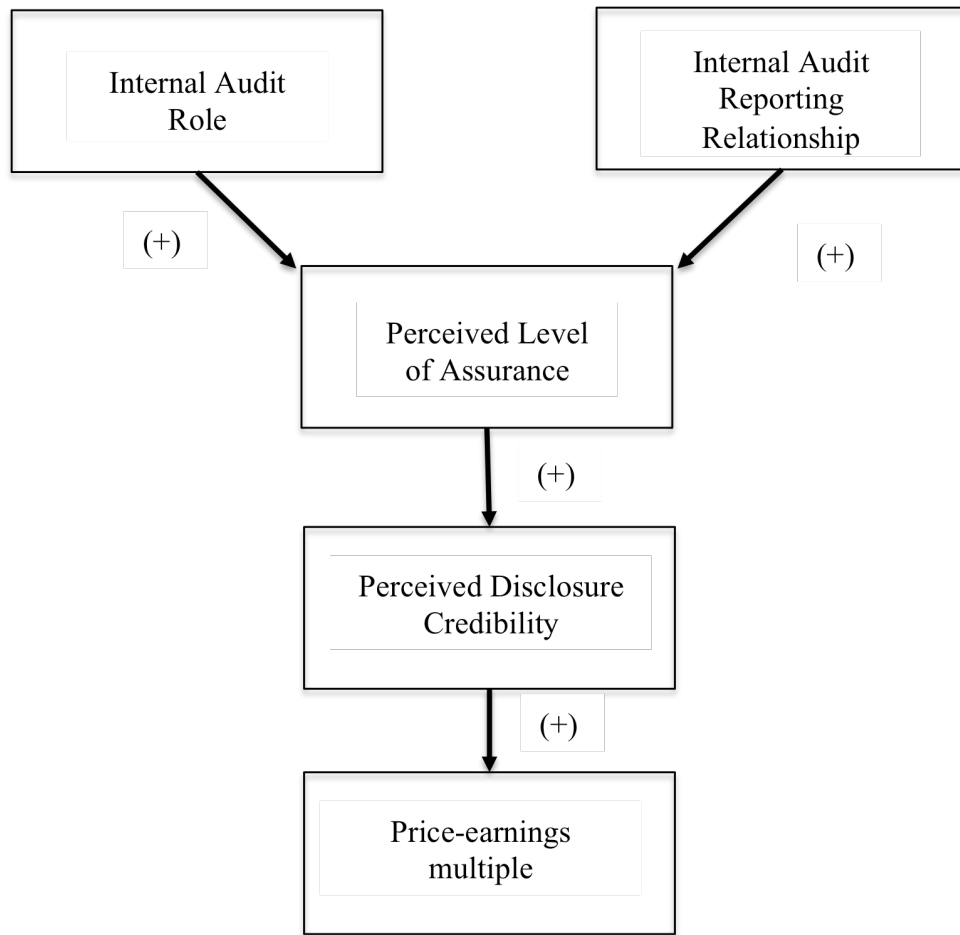


Figure 4. Predicted Structural Equation Model

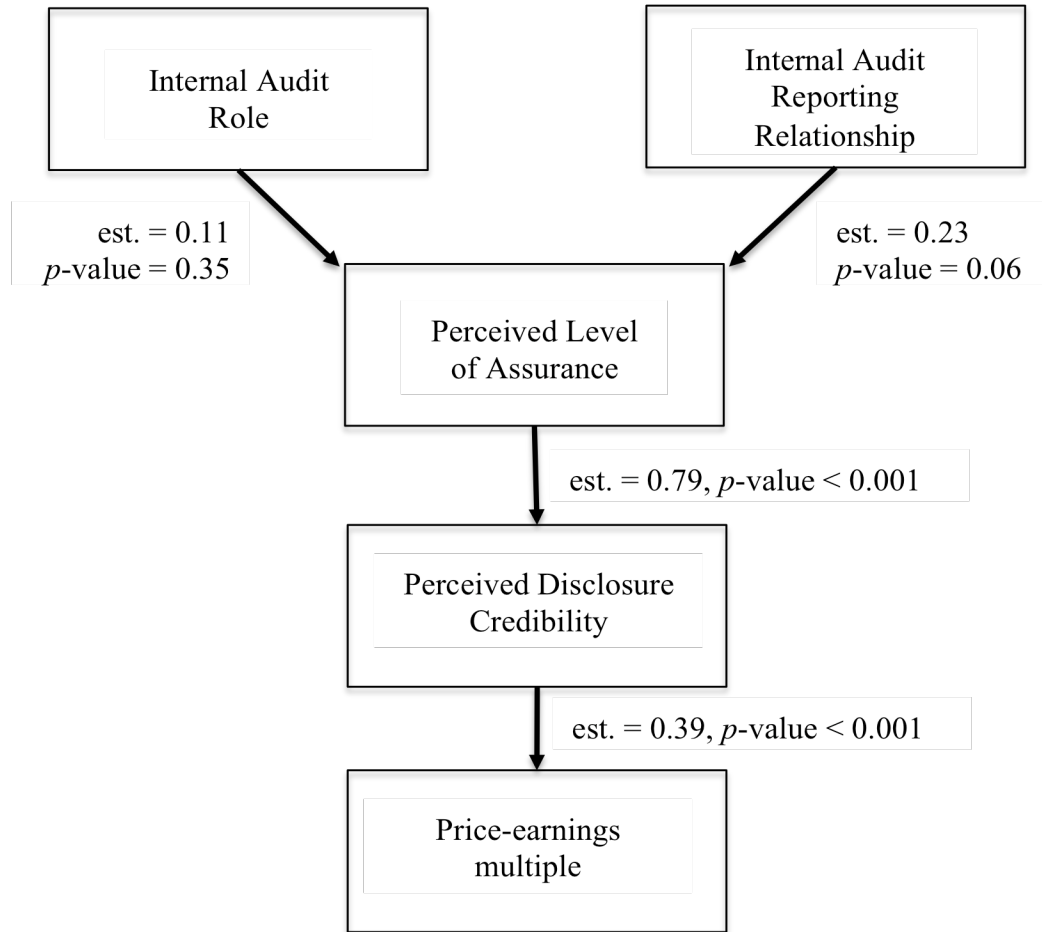


Figure 5. Observed Structural Equation Model

Participants provided an assessment of their perceived credibility of the financial information (*CREDIBLE*) using a 9-point scale with endpoints labeled “not at all credible” and “extremely credible.” *SURE* is an assessment of how sure participants were that the financial information was accurate using a 9-point scale with endpoints labeled “not at all sure” and “extremely sure.” *RELATE* is a variable coded as 0 if internal audit reports strategically and administratively to the CFO or 1 if internal audit reports strategically to the AC and administratively to the CEO. *ROLE* is a variable coded as 0 for consulting or 1 for assurance. *PE* is an assessment of the multiple that should be applied to Trexler’s net income in calculating the share price for Trexler. Reported *p*-values signify two-tailed significance levels. Significant *p*-values are in bold. The overall fit indices of the model are as follows: NFI = 0.94, TLI = 1.02, and CFI = 1.00. The explained variances are as follows: *SURE* = 0.064, *CREDIBLE* = 0.627, and *PE* = 0.155.