The influence of non-audit service revenues and client pressure on external auditors’ decisions to rely on internal audit.

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The Influence of Non-audit Service Revenues and Client Pressure on External Auditors’ Decisions to Rely on Internal Audit

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I. INTRODUCTION

Pressures on audit fees, combined with the ever increasing complexity of the audit environment, have made external auditor reliance on the internal audit function a critical component of the independent financial statement audit (Felix, Gramling and Maletta 1998). Accordingly, an important goal of auditing research is to gain an understanding of the factors and circumstances that affect external auditor decisions regarding internal audit reliance. Prior research in this area has primarily focused on investigating the effect of factors prescribed by professional auditing standards, such as internal audit quality (i.e., objectivity, competence and work performance) and risk of material misstatement on external auditor reliance on the internal audit function (Margheim 1986; Edge and Farley 1991; Maletta 1993; Brody, Golen and Reckers1998; Felix, Gramling and Maletta 2001). While these studies have provided significant insight into the role that auditing standards have in auditors’ reliance decisions, the effect of potentially critical factors related to the relationship between the audit firm and the client and the resulting influence that client management may have on such decisions have not been examined. Specifically, Felix et al. (2001) found that clients’ external audit fees are inversely related to the level of internal audit contribution, suggesting that client management has an incentive to induce or pressure auditors into relying on internal auditors. This finding, combined with recent concerns regarding potential compromises in auditor judgment as a result of accounting firm provision of non-audit services to audit clients (POB 2000), suggests that management may not only have the motivation, but the ability, to successfully affect auditors’ decisions to rely on internal audit functions in the performance of the financial statement. Accordingly, this study will examine the effect of client influence factors such as client pressure and external auditor provision of significant non-audit services to the client on auditors’ decisions to use internal audit in the financial statement audit process.

Possible sources of influence on the external auditor’s decisions have been of considerable concern to policy makers for a number of years (e.g., see Levitt, 1998). As indicated, the influence of
non-audit revenues on the auditor’s performance has recently become an important issue (POB 2000; Frankel et al., 2002). This importance likely stems from evidence that audit clients have paid their external audit firms significant amounts for non-audit services. For example, Weil and Tannebaum (2001) report that for a sample of 307 firms, fees paid for non-audit services were nearly three times the amount paid for audit fees. Similarly, Frankel et al. (2002) report that for 3,074 firms filing proxy statements between February 5, 2001, and June 15, 2001, mean non-audit fees, as a percentage of total fees paid to the external audit firm, is 49 percent. The magnitude of non-audit services provided to audit clients introduces the risk that client management may be able to leverage its position with the external auditor and potentially affect the audit process. Prior research in this area indicates that the provision of non-audit services appears to affect auditors’ decisions regarding known reporting issues, such as the level of discretionary accruals (see e.g., Parkash and Venable 1993; Firth 1997; Frankel et al. 2002). Yet, little is known regarding the extent to which the provision of significant non-audit services affects auditors’ decisions regarding other elements of the audit process (e.g., internal audit reliance) and thus, potentially compromises the detection of financial statement errors and intentional misstatements. Arguably, in the case of auditors addressing discretionary accruals with compromised independence at least the auditor knows the nature of what is being accepted or rejected. In the case of potentially compromising the audit evidence gathering and evaluation process, auditors do not know the extent of errors and irregularities that may be undetected.

This study examines the effect of client influence variables (i.e., client pressure, non-audit service revenues) on external auditor reliance decisions using a unique data set comprised of matched survey responses from internal and external auditors affiliated with 74 Fortune 1000 firms. Our sample includes the six largest public accounting firms and 34 client industries. We hypothesize, and find, that when an auditee is not a significant non-audit services client, auditors’ assessments of internal audit quality combined with the level of internal/external audit coordination significantly affect their internal audit reliance decisions. At the same time, the extent to which auditors use internal audit in the performance of the financial statement audit is not affected by client pressures regarding internal audit

\[1\] The term “auditor” herein refers to external auditor. When we refer to an internal auditor, we explicitly include the term “internal.”
involvement. However, when an auditee receives significant non-audit services from the audit firm, pressures by the client regarding internal audit reliance and the level of auditor sensitivity to such pressures, significantly increase the extent of internal audit reliance. Equally important, when the auditor does provide significant non-audit services to the client, internal audit quality and the extent of internal/external coordination do not significantly affect auditors’ reliance decisions. Thus, external auditors appear to be more affected by client pressure and less concerned about internal audit quality and coordination when making internal audit reliance decisions at clients for whom significant non-audit services are also provided. Taken together, our findings indicate that non-audit service revenues have an effect on decisions which are integral to the evidence gathering and evaluation components of the audit process and as result, these revenues potentially affect the likelihood that the audit will identify material errors and intentional misstatements.

II. BACKGROUND AND HYPOTHESIS DEVELOPMENT

Internal Audit Role in the Financial Statement Audit

In planning the audit engagement, the external auditor assesses the risk of material misstatement in the client’s financial statements. As part of that assessment the auditor obtains an understanding of the client’s internal control. One potential component of the client’s internal control is its internal audit function. Accordingly, for clients with an internal audit function, the external auditor will obtain an understanding of that function (AU 319 AICPA 2001). Based on this understanding, SAS No. 65 (AU 322 AICPA 2001) indicates that the auditor is to determine whether the internal auditors’ activities are relevant to the financial statement audit. If the auditor determines these activities to be relevant, and deems it efficient to consider the work of the internal auditors, the auditor will assess the quality (i.e., objectivity, competence, work performance) of the internal auditors.

For audit engagements in which the internal audit function is deemed to be of an acceptable level of quality, the auditor will then determine the nature and extent of reliance to place on the work performed by that internal audit function. SAS No. 65 further recognizes that internal auditors can play a role in the financial statement audit via two approaches. One approach is to have the client’s internal auditors work as assistants under the direct supervision of the external auditors. The second alternative is to rely on relevant work that was completed by the internal audit function on its own throughout the audit year.
Auditors may rely on procedures that internal auditors have performed related to testing internal controls, as well as on substantive testing procedures they have performed.\textsuperscript{2}

**Factors Affecting the Internal Audit Reliance Decision: Professional Guidance and Relevant Research**

The decision to rely on work completed by a client’s internal audit function has significant implications for the audit process. Most importantly, reliance on internal audit work results in a reduction in the evidence collected directly by the external auditors (AICPA AU 322). Given the influence of the internal audit reliance decision on the extent and nature of audit evidence gathered directly by the external auditor, it is important to understand the factors that affect external auditors’ reliance decisions.\textsuperscript{3} Both professional auditing literature and academic research provide insights on this issue.

SAS No. 65 indicates that in making judgments about the extent of the effect of the internal auditor’s work on the auditor’s procedures, the auditor is to consider the quality (i.e., objectivity, competence, work performance) of the internal audit function and the risk of material misstatement in the financial statements.\textsuperscript{4} Accordingly, a great deal of research related to external auditors’ reliance decisions experimentally investigates the relation between internal audit quality characteristics (i.e., objectivity, competence, quality of work performed) and the extent of internal audit contribution\textsuperscript{5} to

\textsuperscript{2} In addition to having the internal auditors contribute directly to the completion of the financial statement audit, professional auditing standards (see SAS No. 78 (AICPA [2001])) also recognize that a client’s internal audit function may affect the financial statement audit in an indirect manner. Given that internal audit is a component of a client’s internal control, internal audit could affect the external auditor’s assessment of control risk, and hence the audit procedures performed (see SAS No. 78). Our investigation does not consider this type of contribution, but focuses solely on the direct contribution that internal audit makes through completion of audit procedures that can be used by the external auditors (see SAS No. 65).

\textsuperscript{3} We are aware of no evidence on whether there exists a relation between the level of internal audit reliance and the quality of the financial statement audit. When the external auditor relies on evidence collected by internal audit (i.e., does not directly gather that evidence) the external auditor is ultimately responsible for the evidence. In fact, SAS No. 65 requires the external auditor to review internal audit’s work. However, the POB (2000, page 63) has raised concerns as to whether the external auditors adequately review and retest internal audit’s work, thus raising concerns about audit quality.

\textsuperscript{4} These factors are useful for determining internal audit reliance at the overall financial statement level, which is the level of analysis for the current study. When the reliance decision is being considered at the assertion level, the auditor would also want to consider the materiality of the financial statement amounts (account balances or classes of transactions) and the subjectivity involved in the evaluation of the audit evidence gathered in support of the assertions (see SAS No. 65).

\textsuperscript{5} We use the phrases *internal audit contribution* and *internal audit reliance* interchangeably throughout this paper. Our dependent variable, Internal Audit Contribution, measures the percentage of the financial statement audit that was completed by the internal audit function, and represents the extent to which the auditors relied on internal audit work.
the financial statement audit (e.g., Schneider 1985; Margheim 1986; Edge and Farley 1991; Brody et al. 1998). This experimental research, in conjunction with recent archival research by Felix et al. (2001) indicates that, consistent with the guidance provided in SAS No. 65, auditors attend to internal audit quality differences such that there is a positive relation between internal audit quality and the extent to which internal audit contributes to the completion of the financial statement audit.

Other extant research has recognized that, consistent with SAS No. 65, engagement-specific risk factors are also relevant in deciding the level of reliance to place on internal audit work (e.g., Campbell 1993). Studies by Maletta and Kida (1993), Maletta (1993), and Felix et al. (2001) find that inherent risk affects internal audit reliance decisions by interacting with factors related to internal audit. For example, consistent with the effects of inherent risk found by Libby, Artman and Willingham [1985], these studies indicate that as inherent risk increases, certain factors associated with internal audit will increase in importance, while others will decrease in importance.6

Finally, research also indicates that internal audit reliance can affect the cost of the audit examination to the client. Felix et al. (2001) find that audit fees are a function of the extent of internal audit contribution to the financial statement audit, such that increases in internal audit contribution result in significant decreases in external audit fees.

In summary, the extant literature suggests that external auditors respond to factors prescribed in the auditing standards (i.e., internal audit quality, factors affecting risk of material misstatement) when determining the extent to which they plan to rely on work completed by their client’s internal auditors. Further, reliance on internal audit in performing the audit can result in the saving of audit fees by the client.

The Provision of Non-audit Services to Audit Clients

DeAngelo (1981) defines audit quality as a function of the probability that an auditor detects errors and/or intentional misstatements contained in the financial statements and is independent enough to report them. The concerns of regulators and extant research appear to support the basic argument

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6 These findings are consistent with the premise that the nature of an individual’s decision process changes with the criticality of the decision. Specifically, research in psychology has shown that as decisions become more critical, the decision processes become more analytical and complex (see e.g., Petty and Cacioppo [1984];
that an external audit firm’s provision of non-audit services to its audit clients affects the independence of the external auditor. For example, Parkash and Venable (1993) report that U.S. companies behave as if capital markets will view revenues from the provision of non-audit services as compromising auditor independence. As such, they find that companies needing audits of high quality are less likely to procure non-audit services from their external auditors. Similar empirical findings are provided by Firth (1997) regarding companies from the U.K.

With respect to the existence of documented compromises in auditor independence due to nonaudit service revenues, relatively few studies have been conducted to date. Those performed have essentially focused on the relation between the revenues from non-audit services and the independence of the external auditor in terms of evaluating client reporting decisions (e.g., level of reported discretionary accruals) and the results have been mixed. Gore et al. (2001) report a positive association between the provision of non-audit services and earnings management in U.K companies, suggesting that auditors’ reporting standards are affected by whether the auditor also provides non-audit services to the audit client. The findings of Frankel et al (2002, 1) have similar implications as they report that U.S. companies procuring non-audit services from their auditors are likely to manage earnings to a greater extent than those that do not. Conversely, Antle et al. (2002) and Ashbaugh et al (200x) found no association between non-audit services and earnings management using a data set of U.S. companies. Defond et al. (2002) also found no association between going concern opinions and non-audit services using a data set of distressed companies. Finally, Kinney et al. (2003) interpret their data as providing no consistent evidence of an association between non-audit fees and earnings restatements.

While the relation between non-audit service provisions and auditor independence in assessing client reporting decisions is certainly important, an equally critical issue is whether the provision of significant non-audit services influences other elements of the audit process that compromise the detection of financial statement errors and intentional misstatements. More specifically, if the provision of non-audit services affects the evidence gathering and evaluation process of the audit (e.g., auditors’ internal audit reliance decisions) then serious questions arise regarding the ability of the audit to adequately detect financial statement errors and intentional misstatements. This study examines
whether non-audit service revenues, through their interaction with client pressure and internal audit quality and coordination variables, influence auditors’ internal audit reliance decisions.

**Client Pressure**

Client pressure is defined by DeZoort and Lord (1997, 47) as “the pressure to yield, or the anticipation of the pressure to yield, to a client’s wishes or influence whether appropriate or not.” In the accounting literature, much of the prior research in the area of client pressure has focused on financial statement users’ perceptions of auditor behavior, due to the difficulty in creating realistic pressure treatments in experimental settings (see e.g., Rhode 1978; Knapp 1985, 1987; Lindsay 1990). The results of these studies generally indicate that auditors are perceived to be more accepting of a client’s wishes (e.g., aggressive accounting/reporting methods) when subject to pressure from the client (see e.g., Farmer et al. 1987; Lord 1992; Hackenbrack and Nelson 1996).

Studies that have addressed the effect of client pressure on auditor judgments have primarily focused on interactions between client pressure and individual auditor characteristics. These studies provide evidence that client pressure affects auditors’ decisions as a function of individual factors related to auditor sensitivity to client pressure (e.g., level of ethical reasoning, perceived locus of control and level of auditor pragmatism (Windsor and Ashksanasy 1995; Tsui and Gul 1996)). These findings are consistent with general models of pressure effects which include individual characteristics as important elements of the process by which overt pressures affect ultimate behaviors (see e.g., Lazarus 1995; Summers et al. 1995; DeZoort and Lord 1997). For example, Lazarus’s Transactional Process Theory (1995) essentially suggests that the effects of pressure on ultimate behaviors should be examined by investigating interactions between overt pressures and individual appraisals of such pressures.

With respect to auditors’ internal audit reliance decisions, the client pressure literature suggests that stimulus pressure (e.g., pressure from a client’s management) should combine with individual characteristics of the decision maker (e.g., auditor sensitivity to overt client pressure) to affect individual behavior (e.g., auditor reliance on internal audit). More specifically, the more sensitive an auditor is to overt displays of client pressure or encouragement, the greater the effect a given level of

Murnighan and Leung [1976]; and Heslin et al. [1972]).
such pressure by a client should have on an auditor’s decisions. Thus, the first hypothesis that will be investigated relates to the following two-way interaction between client pressure and individual auditor sensitivity to overt client pressure:

H1: The greater the sensitivity to overt client pressure possessed by the auditor, the greater the effect client pressure will have on the auditor’s internal audit reliance decisions.

Client Pressures and Significant Non-audit Service Provisions

The extent to which client pressure variables (i.e., overt client pressure, sensitivity to client pressure) affect auditors’ planning decisions may be a function of whether significant non-audit service revenues are also being generated from the client. Support for this notion is provided by Frankel et al. (2002, 1) who state that the provision of non-audit services may affect auditor independence by increasing the auditor’s “incentive to acquiesce to client pressure.” Further, prior research indicates that financial statement users perceive auditors to be susceptible to client pressure, and that auditor susceptibility is thought to be a function of factors such as the presence of adequate professional guidance (see e.g., Rhode 1978) and significant audit competition (Lindsay 1990). Particularly relevant to our study, Gul (1991) found that audit firm provision of MAS services to audit clients affected bank loan officers’ perceptions of auditor responsiveness to management requests.

These studies suggest that the interaction between client pressure and auditor sensitivity to overt client pressure will have a significantly greater effect on the extent of internal audit’s contribution to the financial statement audit when the external audit firm provides significant non-audit services, as compared to when it does not. Stated differently, a three-way interaction should result such that auditors will rely more on internal auditors as a result of client pressure and their related sensitivity to such pressure, when the client is also receiving significant non-audit services from the respective audit firm. Thus, the second hypothesis that will be investigated is stated as follows:

H2: The effect of client pressure and individual auditor sensitivity to overt client pressure will result in greater internal audit reliance when the auditor’s firm also provides significant non-audit services to the client, versus when it does not.

Internal Audit Quality and Internal/External Auditor Coordination

SAS No. 65 indicates that the internal audit function must be of a sufficient level of quality before external auditors can consider internal audit's work to be competent evidential matter for
purposes of completing the financial statement audit (AICPA 1997). Prior experimental and archival research generally support a positive relation between internal audit quality and the contribution made by internal audit to the financial statement audit (Abdel-khalik et al. 1983; Schneider 1985; Maletta and Kida 1993; Maletta 1993; Felix et al. 2001). Thus, professional auditing standards and extant research suggest that the contribution made by internal audit to the financial statement audit should be positively related to the level of quality of internal audit.

Another important variable that has received relatively little attention in the internal audit literature is internal/external auditor coordination. Both internal and external auditing standards encourage the two audit groups to coordinate their efforts related to completing the financial statement audit (IIA 1995; AICPA 2001). Coordination efforts can involve assigning specific audit work throughout the audit year to internal audit and managing internal audit availability at year-end. Coordination has the potential to maximize the effectiveness of the internal auditors’ contribution to the financial statement audit and increase overall audit efficiency through the minimization of duplicate audit efforts (Felix et al. 1998). In one of the few studies investigating this factor, Felix et al. (2001) found that the level of internal/external auditor coordination significantly influences the level of internal audit reliance. The greater the level of coordination, the greater the contribution of internal audit to the financial statement audit. This was especially true in high versus low inherent risk situations, as the greater the inherent risk, the more important the effect the level of coordination had on auditors’ decisions.

In an effort to extend the research regarding the role of coordination on auditors’ reliance decisions, this study will examine the potential interaction between internal audit quality and the level of internal/external audit coordination. Specifically, the extent to which coordination affects the contribution of internal audit to the financial statement audit should be predicated on the level of internal audit quality. The higher the level of internal audit quality, the greater the effect increases in internal/external auditor coordination should have on the financial statement audit. Stated differently, high quality internal auditors should have a greater potential to contribute to the financial statement through coordination activities than low quality internal auditors.
The following interaction between internal audit quality and internal/external audit coordination will be examined in this study.

H3: The greater the level of internal audit quality, the greater the effect internal/external auditor coordination will have on the auditor’s internal audit reliance decisions.

**Non-audit Service Revenues and Internal Audit Quality and Coordination**

Consistent with the notion that the client will have greater leverage over financial statement auditors in situations where the audit firm provides significant non-audit services to the client, factors prescribed by auditing standards may be compromised in such situations. In an effort to accommodate the client in situations where non-audit services are provided, the external auditor may place less overall importance on internal audit quality and coordination in making decisions regarding internal audit reliance. This suggests that a negative three way interaction will exist between internal audit quality, coordination and the provision of non-audit services such that the combined effect of internal audit quality and coordination on auditors’ internal audit reliance decisions will be less when significant non-audit services are provided to the client, as compared to when they are not.

H4: The combined effect of internal audit quality and coordination on the auditor’s internal audit reliance decisions will be less when the auditor’s firm also provides significant non-audit services to the client, versus when it does not.

**III. DATA AND MODEL SPECIFICATION**

**Research Design and Model Specification**

A cross-sectional regression model based on prior research (e.g., Felix et al. 2001) and professional auditing standards (AICPA AU 322) is used to examine the effects of client influence factors on internal audit contribution to the financial statement audit. The model specified for this research is represented below as equation (1).
$IACONTRB = \beta_0 + \beta_1 IR + \beta_2 IAQUAL + \beta_3 AVAIL + \beta_4 COORD + \beta_5 IR \times AVAIL + \beta_6 IR \times COORD$
\[+ \beta_7 NONAUDIT + \beta_8 PRES + \beta_9 SENS \times PRES + \beta_{10} NONAUD \times SENS \times PRES\]
\[+ \beta_{11} NONAUD \times PRES + \beta_{12} NONAUD \times IAQUAL + \beta_{13} NONAUD \times COORD\]
\[+ \beta_{14} COORD \times IAQUAL + \beta_{15} NONAUD \times COORD \times IAQUAL + \varepsilon \quad (1)\]

where:

$IACONTRB$ External auditor assessment of percentage of internal audit contribution to financial statement audit work ($0\%=$internal audit did not perform any of the work required to complete the audit to $100\%=$internal audit completed all of the work required to complete the audit)

$AVAIL$ Extent to which external auditors agree that internal audit department has time available to assist in the performance of the financial statement audit (-2 = strongly disagree to +2 = strongly agree).

$IAQUAL$ External auditor assessment of overall internal audit quality ($0 = $very low to 100 = very high$).

$IR$ Risk of material misstatement occurring in the client’s financial statements, in the absence of controls (inherent risk), as reported by external auditor respondent ($0 = $low, 1 = moderate/high$).

$COORD$ External auditor assessment of relationship with internal auditors ($1 = coexistence to 4 = partnering$).

$PRES$ Extent to which external auditors agree that client upper management encouraged them to use internal audit work audit (-2 = strongly disagree to +2 = strongly agree).

$SENS$ Extent to which external auditors agree that they used internal audit work to accommodate client requests (-2 = strongly disagree to +2 = strongly agree).

$NONAUD$ External auditor provides client with significant non-audit services, as reported by internal auditor respondent ($0 = no, 1 = yes$).

**Dependent Variable**

The contribution of the internal audit function to the financial statement audit ($IACONTRB$) is measured as the percentage of the external financial statement audit performed by the internal auditors, where 0% indicates that the internal auditors did not perform any work that was used by the external auditors during the audit, and 100% indicates that the internal auditors performed the entire audit. This variable, which was obtained from the external auditor respondent, includes both the contribution made by internal auditors acting as assistants under direct supervision of the external auditors and by completing relevant work throughout the year.

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7 See Appendix for scales used in measuring the dependent and independent variables.
Independent Variables

Our research focuses on the nature of the effect of client influence factors (i.e., client pressure, provision of non-audit services) on internal audit contribution. However, prior research (Felix et al. 2001) and professional auditing standards (AU 322 ACIPA 2001) suggest other variables that may affect the reliance decision. These variables, as well as the variables needed to test our hypotheses, are discussed below.

The simplest factor for the external auditors to consider in determining the contribution of internal audit to the financial statement audit is internal audit availability. In effect, the more time the internal auditors have available during the time period of the financial statement audit, the greater their potential contribution. At some client entities, internal audit resources may be organized to have time available to provide direct assistance to the external auditors (Felix et al. 1998). However, given the varied responsibilities of internal audit, it is also possible that they may have very limited availability at or near the time period of the financial statement audit. Thus, at a fundamental level, the greater the availability of the internal auditors to assist the external auditor, the greater the potential contribution internal audit can make to the financial statement audit. Our measurement of internal audit availability, AVAIL, represents the extent to which the external auditor respondent agreed that the internal auditors had time available to assist in performing the financial statement audit. This variable is measured on a five-point scale (-2 = strongly disagree, to +2 = strongly agree) and is expected to have a positive coefficient. That is, the greater the external auditor perception that the internal auditors had available time, the greater the expected contribution of the internal auditors to the financial statement audits (see Felix et al. 2001). Availability is not only expected to be significant as a main effect but, as discussed below, it is expected to be contingent on the level of inherent risk (IR).

Our second independent variable is internal audit quality (IAQUAL). IAQUAL is the overall measure of internal audit quality, as perceived by the external auditor. External auditors measured this variable on an eleven-point scale that ranged, in increments of 10, from “0,” very low overall quality, to “100,” very high overall quality. The coefficient for the IAQUAL variable is expected to be positive.

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8 This type of contribution primarily relates to the potential for the internal auditors to work as assistants under the direct supervision of the external auditors during the financial statement audit. If the internal auditors were
with higher levels of internal audit contribution being associated with higher levels of internal audit quality.\textsuperscript{9}

As discussed in an earlier section, inherent risk (IR) is expected to have an interactive effect on the reliance decision. Accordingly we obtained a measure of IR from the external auditor respondents. The inherent risk variable, IR, captures the external auditor’s assessment of the client’s level of inherent risk (i.e., the risk of a material misstatement occurring in the client’s financial statements, in the absence of controls). The variable is dichotomous, with “0” representing a low level and “1” representing a moderate/high level of inherent risk.\textsuperscript{10} Changes in inherent risk should not simply cause a change in the use of internal audit but instead should cause the process by which internal audit reliance decisions are made to become more complex and analytical. In effect, as inherent risk increases auditors should move away from simple decision rules that utilize only simple factors and toward more analytical decision functions that emphasize more complex and substantive factors. Thus, in lower risk conditions, simple factors such as the general availability of the internal auditors (AVAIL) may be significant in determining internal audit contribution, but become less significant as risk increases. Stated more specifically, the literature suggests (Felix et al. 2001), and we expect, a diminishing importance of availability as inherent risk increases. Accordingly, our model includes an interaction term (i.e., IR*AVAIL), that is posited to have a negative coefficient.

In higher IR conditions, more complex factors may emerge as the primary factors that influence internal audit contribution. One such factor is the extent of coordination between the internal and external auditors (COORD) (see Felix et al. 2001). COORD captures the external auditor’s perception of the relationship between the internal and external auditors in coordinating and planning the financial statement audit. COORD is measured using a four-point scale ranging from a relationship characterized as coexistence (“1”) to a relationship labeled as “partnering” (“4”), with midpoints

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\textsuperscript{9} Consistent with Felix et al. (2001) we initially include an interaction term of IAQUAL * IR in Model 1. However, also consistent with Felix et al. (2001) the interaction term is insignificant. Accordingly the interaction term is deleted from Model 1.

\textsuperscript{10} The original scale (see Appendix) provided three response categories. Only nine respondents selected the high category. Accordingly, we combine the high category and moderate category into one category (high/moderate) for analysis purposes.

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labeled as coordination ("2") and integration ("3"). Thus, the more integrated the relationship, the greater the numerical score.

Consistent with Felix et al. (2001), we expect that the importance of coordination in determining internal audit contribution increase as inherent risk risks. That is, the extent to which the coordination between internal and external audit positively affects the contribution of internal audit to the financial statement audit is expected to be greater when inherent risk is high than when it is low. Accordingly, our model includes coordination by inherent risk interaction (IR*COORD) that is posited to have a positive coefficient.

The remaining independent variables capture the client influence variables that are the primary focus of the study. These variables include whether the external audit firm provides significant non-audit services to the client (NONAUD), the external auditor’s perception of the extent to which the client encourages or pressures the external auditor to use the work of internal audit (PRES), and the sensitivity of the external auditor to this client pressure (SENS).

NONAUD is a dichotomous measure obtained from the internal auditor respondent. Specifically, the internal auditor was asked to indicate whether its organization relied on its external audit firm for significant non-audit services (e.g., tax, consulting).11 PRES represents the external auditors’ assessment of the extent to which they perceive that upper management at the client encouraged, or pressured, the external auditor to rely on internal audit work. External auditors provided their perceptions on a five-point scale, ranging from +2 = strongly agree to -2 = strongly disagree. Finally, SENS is measured on five-point scale (ranging from +2 = strongly agree to -2 = strongly disagree) designed to assess the extent to which external auditors agree that one factor which affected their decision to rely on internal audit’s work was a desire to accommodate a client request (i.e., their sensitivity to overt client pressure).12

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11 As indicated in the Appendix, we allowed for a third category of response – “Don’t know.” None of our respondents selected this response category.

12 The model does not include a main effect term for SENS or an interaction between NONAUDIT and SENS, as sensitivity to client pressure is not observable in the absence of client pressure. In effect, from a theoretical perspective, this variable must be combined with the PRES variable in order for it to be interpreted. This is consistent with Kmenta (1986), Fisher (1988) and Aiken and West (1991) which indicate that lower order terms contained within higher order interaction terms should not be specified in a regression model when, theoretically,
Sample and Descriptive Statistics

The data necessary to test our hypotheses were obtained from matched surveys completed by internal and external auditors. The Institute of Internal Auditors (IIA) provided the names of IIA members (e.g., internal audit director) at 787 Fortune 1000 firms. We sent two questionnaires to each of these firms. We requested that the internal audit directors complete the questionnaire designed for internal auditors, and forward the other to the external audit partner responsible for completion of the firm's annual financial statement audit. All participants completed the survey with reference to their most recently completed financial statement audit.

We received completed questionnaires from both the internal and external auditor respondents for 76 (12.6%) firms, of which 74 had the data necessary for testing our hypotheses. Table 1 provides comparative descriptive statistics of the respondent and non-respondent firms. Overall, the respondent firms are not significantly different than the non-respondent firms. In general, the firms included in our analysis are large, economically significant entities. On average, these firms have revenue of $8,817.08 million, assets of $19,207.80 million, profits of $557.68 million, equity of $3,442.30 million, a market value of $11,059.66 million, an EPS of $2.22, and 31,022.65 employees.

Table 2 provides demographic data about the firms in which the external auditor respondents are employed and the industries represented by their clients for which the survey was completed. As detailed in Panel A, all of the Big 6 firms are represented in our sample. Panel B indicates that the client

13 Prior research suggests that the fee model for financial services firms differs from the fee model for non-financial services firms (Elliott and Korpi [1978], Stein et al. [1994]). We focus only on non-financial services firms. Thus, throughout the paper, the term Fortune 1000 firms refers only to the 827 non-financial services firms in the Fortune 1000 (Fortune [1997]). Also, none of the observations used in the study include outsourced internal audit functions.

14 The survey instrument was designed to also gather data on issues outside of the scope of this paper (see Felix et al. 1998). The response rate is likely due to the length of the survey instrument (20 pages), the proprietary nature of the survey questions (in addition to the variables included in this study we asked questions related to audit fees and audit hours), and the fact that the internal auditor receiving the instrument had to be willing to forward the survey to the external auditor. These factors placed downward pressures on sample size. In the final section of the paper, we discuss the limitations resulting from using this survey approach.
firms represent nine SIC industry divisions, and 34 industries at the 2-digit SIC level. The data in Table 2 suggests that we have a broad sample of client industries and external audit firms.¹⁵

Table 3 provides descriptive data on the variables that we use in our regression analysis. As highlighted in Table 3 – Panel A, on average the internal auditors completed 27.09% of the work necessary to complete the financial statement audit.¹⁶ Further, on average, the internal auditors included in our sample are perceived to be high quality. Specifically, the mean quality assessment provided by the external auditors is 71.82 (on a scale ranging from 0 to 100). The mean of the AVAIL variable is .66 (on a scale ranging from –2 to +2), and the mean COORD assessment is 2.32 (on a scale ranging from 1 to 4). Further, the mean of the SENSITIVITY variable is .54. (on a scale ranging from –2 to +2), while the mean of PRES is 1.17 (on a scale ranging from –2 to +2). The external auditors assessed inherent risk at a moderate/high (low) level for 39 (35) respondents. Finally, 44 (30) of our respondents indicated that they did (not) purchase significant non-audit services from their external audit firm. The correlations between the variables used in Equation 1 are included in Table 4.¹⁷

¹⁵ Inclusion of primarily only Big Six firms in the sample helps to limit cross-sectional variability in audit quality. Our results are not sensitive to the inclusion of the one observation with a non-Big Six auditor. Specifically, we perform the analysis presented in Table 5 after deleting the one observation where the audit firm is a non-Big Six firm. The significance levels and interpretations remain unchanged.

¹⁶ We have two observations where IACONTRB = 0. Our results are not sensitive to the inclusion of these two observations. Specifically, we perform the analysis presented in Table 5 after deleting these two observations. The significance levels and interpretations remain unchanged.

¹⁷ The information regarding the provision of non-audit services to the client by the external audit firm was acquired by the internal audit director, not the external auditors on the engagement. However, because external auditors provided their perceptions of client pressure and general sensitivities to such pressures while being knowledgeable as to whether the client received significant non-audit services from their respective firms or not, the potential exists for the PRES and SENS variables to be correlated with the NONAUD variable. However, an examination of Table 4 indicates that neither PRES nor SENS are significantly correlated with the NONAUD variable. Thus, auditors’ perceptions of client pressure and their self-reported sensitivities to client pressures are not affected by the fact that the client is or is not a non-audit service client. Also, variance inflation factors are provided in Table 5 as evidence on the nature of the multicollinearity among the independent variables. As indicated by Neter et al. (1990) a maximum VIF value in excess of 10 is an indication that multicollinearity may be unduly influencing the least squares estimates. The VIF scores reported in Table 5 are well below the level that would suggest problems with multicollinearity.
IV. RESULTS

Our regression results are summarized in Table 5.\textsuperscript{18} The overall regression model is significant (F = 5.261, p < .0001), with an adjusted R² of .467.\textsuperscript{19} As for individual coefficients, we find that AVAIL is significant (p=.008) and has a positive coefficient, indicating that the availability of the internal audit function plays an important role in determining internal audit contribution. The IR*AVAIL interaction is significant (p=.039) with a negative coefficient. Consistent with prior research, these findings indicate that as inherent risk increases, the extent to which the general availability of the internal auditors determines their total contribution to the financial statement audit decreases. Also consistent with prior research, the IR*COORD interaction is positive, However. it is only marginally significant at the p=.101 level.\textsuperscript{20}

\textit{INSERT TABLE 5 ABOUT HERE}

Hypotheses H1 and H2

Hypothesis H1 indicates that auditors’ internal audit reliance decisions will be affected by a positive interaction between SENS and PRES, while H2 specifies that the interaction between these two variables will be exacerbated by the provision of non-audit services to the client. With respect to hypotheses H1, the SENS * PRES variable is not significant at conventional levels (p=.153). However, consistent with H2, the NONAUD * SENS * PRES three-way interaction is highly significant at the p=.002 level. This result indicates that the role of client pressure and auditor sensitivity to client pressure in determining the extent of internal audit contribution to the financial statement audit is a function of the provision of non-audit services to the client. In particular, consistent with H2, the positive coefficient for the interaction term indicates that when non-audit services are provided, the interaction between auditor sensitivity to overt client pressure and client pressure significantly

\textsuperscript{18} As recommended by Aiken and West (1991), the dependent variable used in this regression and the continuous independent variables (including all corresponding interactions) were mean centered to minimize correlations between main effects and interactions and to allow for a proper subsequent evaluation of significant interaction terms.

\textsuperscript{19} We tested for outliers. There were no observations with studentized residuals greater than 3.0 in absolute value. Also see footnotes 14 and 15.

\textsuperscript{20} In Felix et al. (2001), AVAIL, IR x AVAIL and IR x COORD were significant at the p≤.05 level and the overall model had an adjusted of .33. The adjusted R² of .467 found with the extended model used in this study represents and increase in explanatory power of 42% over the simpler model estimated in Felix et al. (2001).
increases the level of internal audit reliance. A test of the significance of the two-way interaction between SENS and PRES within each non-audit service group further illustrates this result. Though only significant at the p=.102 level, when significant non-audit services are not provided to the client, the effect of the SENS * PRES interaction actually has a negative coefficient (−1.577). When significant non-audit services are provided, the SENS * PRES interaction coefficient is positive and highly significant (2.192, p=.007). These results indicate that external auditors do not significantly increase their reliance on internal audit as a result of client pressure, when the client does not possess the leverage of being a non-audit service client of the external audit firm. Potentially detrimental consideration of client pressure factors only occurs when the client is one for whom the audit firm provides significant non-audit services.

**Hypotheses H3 and H4**

Hypothesis H3 examines whether the greater the level of internal audit quality, the greater the positive effect internal audit coordination will have on auditors’ internal audit reliance decisions. Hypothesis H4 indicates that the extent to which the interaction between internal audit quality and coordination will affect auditors’ reliance decisions will be less in situations where significant non-audit services are provided to the client. Consistent with this expectation, the IAQUAL * COORD interaction has a positive coefficient (.685) that is significant at the p=.033 level. However, consistent with H4, the NONAUD * IAQUAL* COORD interaction is significant (p=.046), with a negative coefficient (-.632). This result indicates that the effect of internal audit quality and coordination on auditors’ reliance decisions can only be considered as a function of the whether the auditor also provides non-audit services to the client. Specifically, the negative interaction coefficient indicates that on audits where significant non-audit services are provided, the effect of the interaction between internal audit quality and coordination on auditors’ internal audit reliance decisions is less important than when non-audit services are not provided. A test of the significance of the IAQUAL * COORD within each non-audit service group further illustrates this result. When significant non-audit services are not provided to the client, the IAQUAL * COORD interaction is significant at the p<.05 level and has a coefficient of .432. However, when significant non-audit services are provided, the IAQUAL * COORD interaction is highly insignificant at the p=.648 level, with a coefficient .104. It is also worth
noting that when significant non-audit services are provided, the main effects of IAQUAL and COORD are also not significant at conventional levels. These results indicate that when non-audit services are provided to a client, internal audit quality and coordination do not affect auditors’ internal audit reliance decisions.21

V. CONCLUSIONS, LIMITATIONS, AND FUTURE RESEARCH

Our results provide evidence on the influence of non-audit service revenues on the external audit process. Specifically, we find that when an auditee is not a significant non-audit services client, pressures by the client to use its internal auditors in the financial statement audit do not significantly affect external auditors’ reliance decisions. Instead, relevant to this study, auditors’ reliance decisions are a function of an interaction between internal audit quality and internal/external audit coordination. However, when an audit firm provides significant non-audit services to an audit client, pressures by the client regarding internal audit reliance, and the level of auditor sensitivity to such pressures, significantly increase the extent of internal audit reliance on the financial statement audit. Further, the effects of internal audit quality and the level of coordination between internal and external auditors on auditors’ reliance decisions are not significant. Thus, external auditors appear to be more affected by client pressure, and less concerned about internal audit quality and coordination, when making internal audit reliance decisions on clients for whom significant non-audit services are also provided. These findings indicate that non-audit service revenues have an effect on decisions which are integral to the evidence gathering and evaluation portion of the audit process and as result, affect the likelihood that the audit will identify material errors and intentional misstatements. In the case of auditors addressing discretionary accruals with compromised independence (as found in some prior research) at least the auditor knows the nature of what is being accepted or rejected. In the case of potentially compromising the audit evidence gathering and evaluation process, auditors do not know the extent of errors and irregularities that may be undetected.

21 An exploratory analysis was conducted to determine whether the client pressure variables examined in this study have a direct effect on the extent to which auditors consider internal audit quality in making internal audit reliance decisions. No significant interactive effects were identified. Also, the an analysis was conducted to determine whether inherent risk mitigates the interactions addressed in hypotheses H2 and H4. No significant results were found.
While this study relies on a unique database comprising matched surveys from internal and external auditors, such an approach has limitations. First, response bias may exist. While Table 1 notes that the survey respondents and non-respondents are not significantly different, these two groups may differ in terms of internal audit characteristics (i.e., IAQUAL, COORD, IACONTRB) and client pressure variables (PRES, SENS). The extent to which our results are robust to the inclusion of clients with other levels of these variables remains an opportunity for future research. Second, given that our analysis required proprietary data, we were limited to including firms that responded to our survey. The sensitive nature of the data we requested and the necessity of receiving responses from both internal and external auditor respondents, placed downward pressures on sample size. Accordingly, possible response bias and small sample size potentially limit the generality of our results.

Our results suggest additional opportunities for future research directed towards a better understanding of the role of the internal audit function in the financial statement audit. For example, future research providing insights into the audit quality effects of relying on the work of internal audit will be important to our understanding of the effects of internal audit’s work on the financial statement audit. It is important to obtain evidence on the actions taken by external auditors to assure the quality of the internal auditors’ work on which they rely. To help assure that audit quality is not negatively affected by having internal audit contribute to the financial statement audit, it is necessary that the external auditors adequately review the work completed by internal audit. However, the Panel on Audit Effectiveness (2000, 62) has questioned whether external auditors adequately test, supervise, and review internal auditors’ work. Research documenting the extent to which external auditors review internal audit work and the factors affecting the extent of that review will be helpful to discussions related to maintaining audit quality.

Finally, while our model has significant explanatory power regarding the contribution of internal audit to the financial statement audit, it is likely that additional factors may affect this process. In particular, research examining the role that corporate governance variables may play in the internal audit reliance process is not just desirable but necessary. Future research needs to determine the associations between corporate governance variables and internal audit quality and contribution as well as whether elements of governance such as the percentage of independent directors, the financial
literacy of the audit committee, number and duration of audit committee meetings and the nature of
meetings between internal audit and audit committee exacerbate or mitigate the results relationships
found in this study.
APPENDIX
MEASUREMENT OF VARIABLES IN MODEL 1

Panel A – Dependent Variable Obtained from External Auditor Respondents

*IACONTRB*

For the most recently completed financial statement audit, please use the scale provided below to indicate the percentage of audit work related to the financial statement audit that was completed by the client’s internal auditors. Note that internal auditors are considered to have completed work related to the financial statement audit if the external auditors:

- Used the internal auditors as assistants during the financial statement audit; OR
- Used work already performed by the internal auditors.

Please circle the appropriate number on the following scale, using the following information as a guide. For example,

- If you circle 0%, you are indicating that the internal audit department did not perform any work which was used by the external auditors during the completion of the financial statement audit.
- If you circle 50%, you are indicating that the internal audit department performed 50% of the work necessary to complete the financial statement audit.
- If you circle 100%, you are indicating that the internal audit department performed 100% of the work necessary to complete the financial statement audit.
APPENDIX (continued)
MEASUREMENT OF VARIABLES IN MODEL 1

Panel B – Independent Variables Obtained from External Auditor Respondents

AVAIL: Internal Audit did not have time available at the end of the year to provide assistance to the external auditors during the financial statement audit.*

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Slightly agree</th>
<th>Neither agree</th>
<th>Slightly disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>+2</td>
<td>+1</td>
<td>0</td>
<td>-1</td>
<td>-2</td>
</tr>
</tbody>
</table>

*For purposes of presentation in the paper this variable was reverse-scored, and the description altered accordingly, to increase the ease of discussion throughout the paper.

IAQUAL: The overall quality of the Internal Audit Department was:

<table>
<thead>
<tr>
<th>0</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>very low</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>very high</td>
</tr>
</tbody>
</table>

IR: Level of Inherent Risk (risk of material misstatement occurring in the client’s financial statements, in the absence of controls) High Medium Low

SENSITIVITY: External auditors used Internal Audit’s work to accommodate the client’s request to use Internal Audit. (NOTE: The external auditors were asked to respond to this question to provide insight into factors influencing their decision to use internal audit’s work.)

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Slightly agree</th>
<th>Neither agree</th>
<th>Slightly disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>+2</td>
<td>+1</td>
<td>0</td>
<td>-1</td>
<td>-2</td>
</tr>
</tbody>
</table>

PRES: Various factors may influence the extent of involvement of Internal Audit in the financial statement audit. Please read the statement below and then express your level of agreement or disagreement by circling the appropriate number according to the following scale.

Upper management encourages external audit to use Internal Audit’s work.

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Slightly agree</th>
<th>Neither agree</th>
<th>Slightly disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>+2</td>
<td>+1</td>
<td>0</td>
<td>-1</td>
<td>-2</td>
</tr>
</tbody>
</table>
APPENDIX (continued)

MEASUREMENT OF VARIABLES IN MODEL 1

Panel B – Independent Variables Obtained from External Auditor Respondents (continued)

COORD: Relationships between internal audit departments and their external auditors may take on one of many levels of interactions. Following are four descriptions of the level of interaction between internal and external auditors. These descriptions are listed from least amount of interaction to greatest amount of interaction.

Please read all four descriptions and mark an “X” next to the description that most accurately describes your audit team’s relationship with your client’s internal audit department.

_____ COEXISTENCE Key features of a coexistence environment:
- internal and external auditors pursue separate missions
- risk analysis, audit planning, and audit plan execution are developed and performed independently by the internal and external auditors as separate and distinct activities.

_____ COORDINATION Key features of a coordination environment:
- external and internal auditors independently develop but share information on risk analysis
- some attempts are made to coordinate audit plans
- if joint auditing is performed, the external auditor typically tends to determine when and where such joint activities take place.

_____ INTEGRATION Key features of an integration environment:
- internal and external auditors share risk models and audit plans
- extensive joint auditing.

_____ PARTNERING Key features of a partnering environment:
- internal and external auditors comprehensively define corporate audit needs and expectations and meet those requirements through a joint and integrated effort;
- internal and external auditors have a shared mission encompassing financial, substantive, compliance and systems auditing.

Panel C – Independent Variable Obtained from Internal Auditor Respondents

NONAUD Does your organization rely on your external audit firm for significant non-audit services (e.g., tax, consulting)? □ yes □ no □ don’t know
### TABLE 1
Comparison of Respondent and Non-Respondent Firms

Mean
(standard deviation)

n = number of firms for which this information is provided on the Fortune 1000 database

<table>
<thead>
<tr>
<th>Variable a</th>
<th>Non-Respondent Firms</th>
<th>Respondent Firms</th>
<th>t1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Revenue (millions)</td>
<td>6,553.76 (12,580.04)</td>
<td>8,817.08 (15,524.27)</td>
<td>.191 ns</td>
</tr>
<tr>
<td>Assets (millions)</td>
<td>13,813.56 (34,006.22)</td>
<td>19,207.80 (45,200.22)</td>
<td>.281 ns</td>
</tr>
<tr>
<td>Profits (millions)</td>
<td>398.65 (808.22)</td>
<td>557.68 (1045.13)</td>
<td>.171 ns</td>
</tr>
<tr>
<td>Equity (millions)</td>
<td>2,408.79 (3,824.96)</td>
<td>3,442.30 (5,824.75)</td>
<td>.109 ns</td>
</tr>
<tr>
<td>Market Value (millions, as of March 14, 1997)</td>
<td>10,504.90 (6,5599.13)</td>
<td>11,059.66 (20,368.61)</td>
<td>.939 ns</td>
</tr>
<tr>
<td>EPS</td>
<td>2.14 (2.72)</td>
<td>2.22 (3.15)</td>
<td>.821 ns</td>
</tr>
<tr>
<td>Return to Investors (includes price appreciation and dividend yield)</td>
<td>20.59 (33.17)</td>
<td>18.59 (33.95)</td>
<td>.631 ns</td>
</tr>
<tr>
<td>Number of Employees</td>
<td>28,603.52 (54,383.27)</td>
<td>31,022.65 (58,406.33)</td>
<td>.697 ns</td>
</tr>
</tbody>
</table>

1T-statistic (adjusted for unequal variances, when appropriate) for test of equality of means between the respondent (n = 93) and non-respondent (n = 694) firms. ns: p ≥ .10 (all are two tailed)

a Descriptive data are from the Fortune 1000 database (Fortune 1997), which is based on 1996 publicly available data.
### TABLE 2
Respondents' Firms

#### Panel A: External Audit Firms Included in Sample

<table>
<thead>
<tr>
<th>Firm</th>
<th>Sample Frequency</th>
<th>Sample Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthur Anderson</td>
<td>18</td>
<td>19.4</td>
</tr>
<tr>
<td>Coopers &amp; Lybrand</td>
<td>8</td>
<td>8.6</td>
</tr>
<tr>
<td>Deloitte &amp; Touche</td>
<td>16</td>
<td>17.2</td>
</tr>
<tr>
<td>Ernst &amp; Young</td>
<td>19</td>
<td>20.4</td>
</tr>
<tr>
<td>KPMG Peat Marwick</td>
<td>15</td>
<td>16.1</td>
</tr>
<tr>
<td>Price Waterhouse</td>
<td>16</td>
<td>17.2</td>
</tr>
<tr>
<td>OTHER</td>
<td>1</td>
<td>1.1</td>
</tr>
</tbody>
</table>

93  100.0

#### Panel B: Industries of Client Firms Included in Sample

<table>
<thead>
<tr>
<th>SIC Industry Division *</th>
<th>Sample Frequency</th>
<th>Sample Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Forestry, and Fishing</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Mining</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Construction</td>
<td>4</td>
<td>4.3</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>39</td>
<td>41.9</td>
</tr>
<tr>
<td>Transportation, Communications, Electric, Gas and Sanitary Services</td>
<td>18</td>
<td>19.3</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>3</td>
<td>3.2</td>
</tr>
<tr>
<td>Finance, Insurance, and Real Estate</td>
<td>19</td>
<td>20.4</td>
</tr>
<tr>
<td>Services</td>
<td>6</td>
<td>6.5</td>
</tr>
</tbody>
</table>

93  100.0

* Based on SIC industry divisions. The 93 firms represent 34 industries at the 2-digit SIC level.
### TABLE 3
Descriptive Statistics

#### Panel A: Continuous Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Median</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>IACONTRB</td>
<td>27.09</td>
<td>15.89</td>
<td>30.00</td>
<td>0.00</td>
<td>70.00</td>
</tr>
<tr>
<td>AVAIL</td>
<td>.66</td>
<td>1.39</td>
<td>1.00</td>
<td>-2.00</td>
<td>2.00</td>
</tr>
<tr>
<td>IAQUAL</td>
<td>71.82</td>
<td>16.62</td>
<td>80.00</td>
<td>30.00</td>
<td>100.00</td>
</tr>
<tr>
<td>SENSITIVITY</td>
<td>.54</td>
<td>1.30</td>
<td>1.00</td>
<td>-2.00</td>
<td>2.00</td>
</tr>
<tr>
<td>PRES</td>
<td>1.17</td>
<td>1.06</td>
<td>2.00</td>
<td>-2.00</td>
<td>2.00</td>
</tr>
<tr>
<td>COORD</td>
<td>2.32</td>
<td>.72</td>
<td>2.00</td>
<td>1.00</td>
<td>4.00</td>
</tr>
</tbody>
</table>

#### Panel B: Dichotomous Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th># of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>NONAUD</td>
<td>0 = no, 1 = yes</td>
</tr>
<tr>
<td>IR</td>
<td>0 = low, 1 = moderate/high</td>
</tr>
</tbody>
</table>

**Note:**

- **IACONTRB**: External auditor assessment of percentage of internal audit contribution to financial statement audit work (0% = internal audit did not perform any of the work required to complete the audit to 100% = internal audit completed all of the work required to complete the audit).
- **AVAIL**: Extent to which external auditors agree that internal audit department has time available to assist in the performance of the financial statement audit (-2 = strongly disagree to +2 = strongly agree).
- **IAQUAL**: External auditor assessment of overall internal audit quality (0 = very low to 100 = very high).
- **IR**: Risk of material misstatement occurring in the client’s financial statements, in the absence of controls (inherent risk), as reported by external auditor respondent (0 = low, 1 = moderate/high).
- **COORD**: External auditor assessment of relationship with internal auditors (1 = coexistence to 4 = partnering).
- **PRES**: Extent to which external auditors agree that client upper management encouraged them to use internal audit work audit (-2 = strongly disagree to +2 = strongly agree).
- **SENS**: Extent to which external auditors agree that they used internal audit work to accommodate client requests (-2 = strongly disagree to +2 = strongly agree).
- **NONAUD**: External auditor provides client with significant non-audit services, as reported by internal auditor respondent (0 = no, 1 = yes).
### TABLE 4
Correlation Matrix for Variables Used in Model (1)

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IACONTRB (1)</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVAIL (2)</td>
<td></td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IAQUAL (3)</td>
<td></td>
<td></td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRES (4)</td>
<td></td>
<td></td>
<td></td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SENS (5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NONAUD (6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COORD (7)</td>
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- **Bolded cells:** Correlation is significant at the 0.05 level (2-tailed).

**Note:**
- **IACONTRB**: External auditor assessment of percentage of internal audit contribution to financial statement audit work (0% = internal audit did not perform any of the work required to complete the audit to 100% = internal audit completed all of the work required to complete the audit).
- **AVAIL**: Extent to which external auditors agree that internal audit department has time available to assist in the performance of the financial statement audit (-2 = strongly disagree to +2 = strongly agree).
- **IAQUAL**: External auditor assessment of overall internal audit quality (0 = very low to 100 = very high).
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- **NONAUD**: External auditor provides client with significant non-audit services, as reported by internal auditor respondent (0 = no, 1 = yes).
TABLE 5
Regression Results

\[
\text{IACONTRB} = \beta_0 + \beta_1 \text{IR} + \beta_2 \text{IAQUAL} + \beta_3 \text{AVAIL} + \beta_4 \text{COORD} + \beta_5 \text{IR} \times \text{AVAIL} + \beta_6 \text{IR} \times \text{COORD} + \beta_7 \text{NONAUD} + \beta_8 \text{PRES} + \beta_9 \text{SENS} \times \text{PRES} + \beta_{10} \text{NONAUD} \times \text{SENS} \times \text{PRES} + \beta_{11} \text{NONAUD} \times \text{PRES} + \beta_{12} \text{NONAUD} \times \text{IAQUAL} + \beta_{13} \text{NONAUD} \times \text{COORD} + \beta_{14} \text{COORD} \times \text{IAQUAL} + \beta_{15} \text{NONAUD} \times \text{COORD} \times \text{IAQUAL} + \varepsilon
\]

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*P-values represent one-tailed tests when the direction of the coefficient is consistent with expectations.

Model:
- R Square = .576
- Adjusted R Square = .467
- F- Ratio = 5.261
- Signif. F < .0001
- n = 74

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REFERENCES


