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As members of the Dissertation Committee, we certify that we have read the dissertation prepared by Nate M. Stephens entitled Corporate Governance Quality and Internal Control Reporting under SOX Section 302 and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy.

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ABSTRACT

I examine firm governance characteristics for a sample of companies disclosing material weaknesses under section 404 of SOX to examine what factors impact the likelihood that a company will disclose those material weaknesses prior to their first section 404 report (under section 302 reporting requirements). I find companies that were audited by industry leading auditors, that have higher quality audit committees, that have shorter auditor/client relationships, that recently restated their financial statements or have been the subject of an SEC AAER, or that have experienced poor financial performance are more likely to discover and disclose weaknesses in their controls under section 302. I find moderate evidence of a positive relationship between company’s that have a CFO with financial accounting background and disclosure prior to the SOX 404 report and a negative relationship between a company’s institutional ownership concentration and the probability that they disclose weaknesses in their controls prior to the SOX 404 report. In sensitivity tests, I find a positive relationship between a company’s institutional ownership concentration and the probability that they disclose significant deficiencies in their controls prior to the SOX 404 report suggesting systematic misclassification of control problems as significant deficiencies rather than material weaknesses in high institutional ownership concentration settings.
I. INTRODUCTION

In this paper I examine firm governance characteristics to determine what factors influence the accurate reporting of material weaknesses under SOX section 302, prior to SOX section 404-mandated audits of internal controls.

SOX section 302 requires that CEOs and CFOs certify, in each quarterly or annual report, that they have evaluated the company’s internal controls “as of a date within 90 days prior to the report” and that they have presented their conclusions regarding the effectiveness of their controls in that quarterly or annual report. This requirement relates to all quarterly or annual filings after August 29, 2002.

Under Section 302 management is required to perform control evaluations; however, the auditor is not required to evaluate management’s assessment of control quality or to perform their own control evaluation. Beginning with fiscal year ends after November 15, 2004, section 404 of SOX and the PCAOB’s auditing standard number 2 (AS2) require that accelerated filers’ external financial statement auditor perform an audit of the firm’s internal controls over financial reporting and provide an opinion in the annual filing as to their effectiveness as well as an opinion regarding management’s assessment of internal controls.¹

Significant discussion has taken place regarding the costs and benefits of The Sarbanes-Oxley Act of 2002 (SOX) section 404b requiring an audit of internal controls over financial reporting. The SEC continues to push back the compliance date for

¹ The requirement of auditors to provide an opinion regarding management’s assessment of controls is eliminated in Auditing Standard No. 5 (AS5), however AS2 is the guidance followed by auditors during the time period covered in this paper.
smaller companies (nonaccelerated filers), with the most recent proposal pushing compliance to fiscal years on or after December 15, 2009 for these smaller companies.\textsuperscript{2} Prior research has documented the significant number of companies that, “failed to properly identify the problem and disclose it in a meaningful, transparent manner to investors”\textsuperscript{3} prior to the audit of internal controls (i.e. under SOX section 302 reporting requirements).

For example, Glass-Lewis & Company performed a study of companies reporting control deficiencies during the first 3 months of section 404 reporting in 2005. They report that, “87% of the 2005 companies noted in our study claimed that their controls were effective as recently as the Form 10-Q prior to their revelation of a control deficiency.”\textsuperscript{2} The overwhelming number of companies that failed to identify and disclose internal control problems prior to the audit of internal controls provides evidence on the importance of the audit in the accurate detection and disclosure of internal control problems.

However, not all companies failed to discover and disclose control weaknesses under SOX section 302. Many companies reported control problems to their shareholders prior to the audit of internal controls.

While the audit of internal controls as mandated by SOX section 404 has been shown to increase the quality of disclosure of internal control weaknesses, little research has examined what other factors improve the likelihood that internal control weaknesses .

\textsuperscript{3} Glass Lewis & Company letter to Mr. Jonathan G. Katz, Secretary of the SEC, April 12, 2005, File Number 4-497
will be discovered and disclosed to shareholders under SOX section 302. It is important to understand what company characteristics impact the likelihood of accurate internal control disclosure under section 302 for several reasons.

First, it is important to understand what factors may play a substitutive role for the audit of internal controls. Currently, the SEC is undertaking a cost-benefit analysis of the audit of internal controls as mandated by SOX section 404b (SEC, 2008). Providing time for the performance of this analysis is one of the primary reasons given by the SEC for its recent proposal that nonaccelerated filers’ compliance with section 404b requiring an audit of internal controls would be delayed for one additional year. If the cost to nonaccelerated filers is a concern, it is important to consider other factors that also improve internal control reporting quality but may do so at less cost.

Second, investors in public companies should understand what factors improve reporting quality when making assessments regarding the accuracy of information provided in public filings. As noted above, approximately 87% of companies reporting control problems during the first part of 2005 had failed to report those problems under section 302 reporting requirements. Are there observable firm characteristics that can be evaluated to assess the quality of internal control disclosures? This is particularly important for investors of nonaccelerated filers who are currently receiving management reports on internal controls, but will not receive an audit report on internal controls until at least early 2010 under current proposed rules. However, insofar as the firm characteristics related to internal control reporting impact other types of company
reporting these observable characteristics would be important for investors in all public companies.

In this paper, I hold constant the existence of a material weakness by examining only those companies that disclosed material weaknesses in internal controls either in a 2004 quarterly report or in their first section 404 disclosure (at the end of the 2004 fiscal year). I compare companies that disclose material weaknesses under section 302 with companies that do not disclose material weaknesses under section 302 but subsequently disclose them under section 404. Using this sample, I examine firm governance characteristics relating to the accurate disclosure of material weaknesses under section 302 of SOX holding constant the existence of a weakness. Figure 1 displays a timeline of the implementation of sections 302 and 404 of SOX and their respective reporting requirements as well as a graphical view of my sample period.

I find companies that were audited by industry leading auditors, that have audit committees with an accounting expert, that have CFOs with accounting background, that have shorter auditor-client relationship tenure, that have recently restated their financial statements or have been the subject of an SEC AAER, or that have experienced poor financial performance have higher quality internal control disclosures during the period leading up to their initial SOX 404 report. I find a negative relationship between a

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4 It is important to note that disclosure of internal control material weaknesses in an annual filing under SOX 404 is not absolute proof that a material weakness existed during the previous periods. I attempt to limit those observations where the control weakness was reported under section 404 but did not exist previously by looking at only the 3 quarters prior to the first 404 report to determine whether the observation was in the group disclosing under section 302 or the group not disclosing under section 302. In addition, according to the Glass-Lewis & Company quotation cited earlier in the paper “In our view, the control deficiency probably did not appear overnight. Consequently, we feel that the problem most likely existed in prior quarters.” Doyle et al (2007b) argue that many of the internal control weaknesses “have existed for several years prior to their disclosure, if not since the firm’s inception.”
company’s institutional ownership concentration and the quality of their internal control disclosures under section 302 reporting requirements. In univariate tests I find companies that disclosed weaknesses in their controls prior to SOX 404 reports had, on average, lower quality accruals measured using a modified Dechow and Dichev (2002) model. Multivariate results controlling for innate firm characteristics that may affect accruals quality yield an insignificant difference between the two groups.

I also find evidence that companies with more concentrated institutional ownership were significantly more likely to disclose significant deficiencies, but less likely to disclose material weaknesses. This result suggests a systematic misclassification of control problems for companies with highly concentrated institutional ownership which may be indicative of strategic behavior on the part of the company to downplay the seriousness of the problem to the investors.

Overall, these findings suggest that higher quality corporate governance and management knowledge/expertise, management incentives, and the ex ante quality of the control system contribute to higher quality internal control reporting under section 302 of SOX.

The paper proceeds as follows: Section 2 provides background and reviews the internal control literature. Section 3 contains a discussion of the independent variables examined and my hypotheses with respect to each. Section 4 discusses my sample and contains univariate tests for each of the independent variables. Section 5 contains a description of the multivariate model used and results from its estimation. Section 6
includes tests of accruals quality differences between the disclosure group and the nondisclosure group. Section 7 discusses my conclusions.
II. BACKGROUND AND LITERATURE

Background

In 2002, Congress passed the Sarbanes-Oxley Act (SOX) in the wake of many corporate frauds. In an effort to improve the quality of financial disclosures made by firms, Congress included new requirements in SOX relating to the review and testing of internal controls.

Specifically, section 302 requires that CEOs and CFOs certify, in each quarterly or annual report, that they have evaluated the company’s internal controls “as of a date within 90 days prior to the report” and that they have presented their conclusions regarding the effectiveness of their controls in that quarterly or annual report. This requirement relates to all quarterly or annual filings after August 29, 2002.

In their evaluations, management is to focus on internal control problems that may lead to misstatements in the financial statements. AS2 defines two terms, borrowed from previous auditing and attest standards, to be used to classify control problems. A material weakness is defined by the PCAOB’s Auditing Standard No. 2 (AS2) as “a significant deficiency, or combination of significant deficiencies, that results in more than a remote likelihood that a material misstatement of the annual or interim financial

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5 The PCAOB released AS2 in March of 2004. Therefore, for previous quarters management may have used previous guidance for identification of a material weakness. AU Section 325A (AICPA), which was effective for financial statement audits as of Jan. 1, 1989, defines a material weakness in internal controls as “a reportable condition in which the design or operation of one or more of the internal control components does not reduce to a relatively low level the risk that misstatements caused by error or fraud in amounts that would be material in relation to the financial statements being audited may occur and not be detected within a timely period by employees in the normal course of performing their assigned functions.” The two definitions are very similar in the probability and magnitude of misstatements going undetected by the control system.
statements will not be prevented or detected.” Material weaknesses differ from significant deficiencies in the magnitude of the potential misstatement resulting from the control weakness. Whereas a material weakness could result in a “material” misstatement, a significant deficiency could result in a misstatement that is “more than inconsequential.”

Under Section 302 management is required to perform control evaluations; however, the auditor is not required to evaluate management’s assessment of control quality or to perform their own control evaluation until fiscal year ends on or after November 15, 2004. For these annual filings, section 404 of SOX and AS2 require that accelerated filers’ external financial statement auditor perform an audit of the firm’s internal controls over financial reporting and provide an opinion in the annual filing as to their effectiveness as well as an opinion regarding management’s assessment of internal controls.6

Prior Internal Control Literature

Several papers have examined issues relating to company’s internal control reports since the passage of SOX and the implementation of sections 302 and 404. Prior studies have mainly focused on issues relating to the existence or absence of internal control problems. Studies have examined risk factors related to having control problems, as well as the difference in accrual quality, cost of equity, and audit committee quality between companies that have control problems and those that do not. Other research

6 The requirement of auditors to provide an opinion regarding management’s assessment of controls is eliminated in Auditing Standard No. 5 (AS5), however AS2 is the guidance followed by auditors during the time period covered in this paper
examines the market reaction to disclosures of material weaknesses in internal controls (Hammersley et al. 2007). Little research has considered the reporting behavior of the subset of companies that have weaknesses in their internal controls. A summary of the internal control literature referenced above and their findings follows.

Ge and McVay (2005) analyze a small sample of companies disclosing material weaknesses following the effective date of section 302. They provide descriptive information regarding the common reasons for the material weakness disclosures. Additionally, in their statistical analysis they provide evidence that companies disclosing material weaknesses are generally smaller, more complex, and less profitable than those not disclosing such problems.

Ashbaugh et al. (2007a) and Doyle et al. (2007a) compare companies that disclose control problems with those that do not to determine what economic factors may be indicative of internal control problems within a company. Together they find that companies that are smaller, younger, financially weaker, more complex, growing rapidly, have recent organization changes, more auditor resignations, and greater accounting risk are more likely to disclose internal control problems.

The main difference between these two papers is in their sample selection. Ashbaugh et al. (2007a) examine internal control disclosures prior to section 404 reports and include both material weakness and significant deficiency disclosures in their disclosure group. Doyle et al. (2007a) examine an overlap of section 302 and section 404 disclosures (their sample covers the period from August 2002 to 2005), and they include only companies reporting material weaknesses in their disclosure group.
In addition to their main tests of economic characteristics, Ashbaugh et al. (2007a) include in their model variables relating to incentives that management has to discover and disclose control problems prior to section 404 mandated audits. They find that companies that have had recent SEC enforcement actions and financial restatements, who use a dominant audit firm, and have more concentrated institutional ownership are more likely to disclose control under section 302.

I extend their findings by examining only companies that had material weaknesses at year end (under section 404 reporting requirements) to determine whether higher quality corporate governance influences the accurate reporting of those weaknesses under section 302 of SOX. I examine only companies disclosing material weaknesses in controls since the disclosure of significant deficiencies is “unambiguously voluntary” (Doyle et al. 2007a, SEC FAQ #11). Discovery and disclosure of material weaknesses, on the other hand, is “effectively mandatory” (Doyle et al. 2007a)\(^7\). Examining only mandatory disclosures allows me to identify characteristics relating to the accurate reporting of weaknesses without the noise and self-selection problems associated with voluntary disclosures.

\(^7\) While disclosure of significant deficiencies is “unambiguously voluntary” (Doyle et al. 2007a), there is some ambiguity as to whether the disclosure of material weaknesses was mandatory under section 302. Doyle et al. 2007a state, “Although it is possible that some firms might interpret the material weakness disclosure requirement under Section 302 as voluntary, our reading of the bulk of SEC guidance and many firms’ begrudging material weakness disclosures seems to indicate that most firms are treating the disclosure as mandatory.” Glass-Lewis & Company also argue that nondisclosure of material weaknesses under SOX section 302 is a “fail(ure) to properly identify the problem and disclose it in a meaningful, transparent manner to investors.” They also interpret nondisclosure as a “signal that companies may not have put forth a good faith effort in assessing their internal controls despite the certification requirements that have been in place since 2002.” (Glass Lewis & Company letter to Mr. Jonathan G. Katz, Secretary of the SEC, April 12, 2005, File Number 4-497)
I limit my sample to companies disclosing weaknesses in internal controls either at year end, or in one of the three quarterly reports during the 2004 fiscal year. While Ashbaugh-Skaife et al. (2007a) also compare disclosers and nondisclosers under section 302, the majority of their nondiscloser group are companies that never had weaknesses in internal controls. The sample used in their paper fit their research question well since the main tests in their model were of risk attributes relating to having an ICD, thus requiring a comparison between those having ICDs and those not having ICDs. By limiting my sample to only companies disclosing weaknesses at some point, I more directly compare those companies that disclosed weaknesses with those that had weaknesses but did not disclose them. Thus, my tests focus on the accurate reporting of weaknesses and not on their existence. Figure 2 illustrates the Ashbaugh-Skaife et al. (2007a) sample and my sample for companies disclosing problems in internal controls.

Other research has examined the difference in accruals quality between companies that have internal control weaknesses and those that do not. Ashbaugh-Skaife et al. (2007b) and Doyle et al. (2007b) provide evidence that companies with internal control weaknesses have lower quality accruals. Additionally, Ashbaugh-Skaife et al. (2007b) find that upon the auditors’ confirmation of the remediation of control problems, accruals quality improves. Doyle et al. (2007b) find that the relationship between weak controls and accruals quality is driven by weaknesses in overall company-level controls rather than the more auditable account specific weaknesses.

Krishnan (2005) examines the impact of audit committee quality on the existence of internal control problems using pre-SOX data. Prior to SOX, companies were required
to report any known control deficiencies when an auditor change occurred. Using a sample of companies reporting on internal controls under these requirements, she finds that companies with higher quality audit committees (measured by independence and financial expertise) are less likely to be associated with the incidence of internal control problems. Krishnan and Visvanathan (2007a) provide evidence that companies whose audit committees hold more meetings and have a lesser proportion of financial experts are more likely to disclose control weaknesses under SOX section 404. I extend these findings by holding constant the existence of internal control weaknesses in order to examine the impact of audit committee quality on the accurate reporting of internal control problems when a material weakness exists.

As noted previously, each of these studies focuses on the existence or absence of internal control problems. Very little research has considered the reporting behavior prior to sox-mandated audits of the companies that have weaknesses in their internal controls.

A contemporaneous working paper also examines characteristics of companies that disclose control problems prior to SOX-mandated audits. Hermanson and Ye (2007) examine a group of companies receiving an adverse 404 audit opinion to determine what factors impact the likelihood that the company had reported the internal control problems previously. Similar to my study, they find that companies with higher quality audit committees, more severe control problems, and prior earnings restatements are more likely to report control problems under section 302 of SOX. My study differs from theirs in the following ways.
First, they consider both material weakness disclosures and significant deficiency disclosures under section 302. Doyle et al. (2007a) argue that the disclosure of significant deficiencies under section 302 is “unambiguously voluntary” while the disclosure of material weaknesses is “effectively mandatory.” Examining only mandatory disclosures allows me to identify governance characteristics relating to the accurate reporting of weaknesses without the noise and self-selection problems associated with voluntary disclosures (Doyle et al. 2007a). A potentially interesting study using their sample would be to examine which factors affect how the company chooses to classify the control problems (as significant deficiencies or material weaknesses) under section 302 reporting requirements.

Additionally, Hermanson and Ye (2007) focus on reporting incentives of companies prior to SOX 404 mandated audits. The focus of my paper is on governance factors related to the accurate reporting of weaknesses in internal controls. While they include some measures of governance quality, such as audit committee quality and auditor independence and effort, their measures are potentially problematic. For example, the audit committee quality measure they find significant is equal to the number of meetings held by the audit committee. This measure is potentially endogenous. Because internal control quality is generally assigned to the audit committee to oversee, audit committees of companies that discover internal control problems would likely meet more often as a result of the control problem discovery in order to remediate the problem.

In the following section I discuss each of the variables I examine along with my hypotheses for each.
III. VARIABLES AND HYPOTHESES

For a company to have disclosed a material weakness under section 302 at least two conditions must have been met. First, the company must have discovered the weakness either through their own efforts or through the efforts of their external auditor. Second, they must have made the decision to disclose the discovered weakness. Therefore, I examine various governance characteristics that may lead to discovery and/or disclosure of weaknesses in internal controls. I do not make an effort to distinguish between discovery and disclosure since most characteristics examined may impact both discovery and disclosure. For example, higher quality auditors may be better equipped to discover weaknesses in controls, but they also may have more incentives to cause the weaknesses to be disclosed.

The following variables proxy for the characteristics of companies’ corporate governance quality related to the accurate reporting of material weaknesses under SOX section 302.

Governance Characteristics

A company’s auditor has been shown to play a significant role in discovering and influencing the disclosure of weaknesses in internal controls even prior to section 404-mandated audits. For example, Hammersley et al. (2007) report that in their sample of SOX 302 material weakness disclosers, more companies credit their auditor with material weakness discovery than those that credit themselves. (164 auditor-discovered weaknesses compared to 143 management-discovered). I examine three proxies for audit quality that may impact the likelihood that an auditor discovered or influenced the
disclosure of weaknesses in their clients’ internal control systems: auditor dominance, auditor industry specialization, and auditor tenure.

First, I use a Big4 / Non-Big4 dummy (BIG4). I define the Big4 dummy equal to one if a Big4 auditor was engaged by the company for the majority of the 2004 fiscal year and zero otherwise. I expect that large audit firms are more likely to discover and cause to be disclosed weaknesses in internal controls during the section 302 regime due to reputation concerns, investment in technology and training, and litigation concerns (Ashbaugh-Skaife et al. 2007a). A more detailed discussion of each of these reasons follows: (1) Large auditors have greater reputation concerns than lower tier auditors (DeAngelo 1981). These reputation concerns may lead to more thorough audits to avoid incorrect conclusions. Additionally, larger auditors’ reputations are likely to be impaired if their clients fail to disclose known material weaknesses which are required to be disclosed. Therefore, after discovering weaknesses in internal controls I expect large auditors to exert greater pressure on management to disclose the weakness to shareholders. Thus, auditor reputation concerns impact both the discovery and disclosure of material weaknesses. (2) Large auditors tend to invest more money in technology and training leading to the more efficient discovery of weaknesses in internal controls (Ashbaugh et al. 2007a). (3) Dominant audit suppliers have greater litigation risk coming from their greater wealth and may therefore be more diligent in identifying misstatements and their causes in the prior years’ financial statement audit, leading to more

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8 I do this to try to capture the size of the auditor that had the most impact on the 2004 quarterly reports wherein the 302 disclosures were made. Thus, if a Big 4 auditor resigned in August of 2004 and was replaced by a non-Big 4 auditor I would define the Big4 dummy equal to 1 since the Big4 auditor was there the majority of the time (i.e. the Big 4 auditor could have influenced the reporting of 2 quarterly reports vs. one for the non-Big 4 auditor).
identification of control problems in prior years. In addition, the threat of lawsuits is likely to cause auditors to be more aggressive in requiring the disclosure of known control weaknesses so as to avoid costly lawsuits relating to the auditors knowledge of control problems that go undisclosed.

Second, I use an indicator variable equal to one if the company’s auditor was an industry specialist in 2003 and zero otherwise (IND_LEADER). I expect industry specialists to be associated with companies reporting weaknesses in their controls during the section 302 regime for the following reasons: (1) Auditors that have specialized knowledge in a particular industry and are familiar with common problem areas in that industry are likely to be better able to identify weaknesses in internal controls. I use the auditor from the 2003 fiscal year because it is possible that the auditor identified weaknesses in controls during their financial statement audit as they tested controls for their reliance decision. (2) Prior research has provided evidence that the clients of industry specialized auditors have higher financial reporting quality (Balsam et al. 2003). The increased reporting quality may come about because auditors that have more experience in like companies are be better able to focus on higher risk areas of the firm during the audit. Alternatively, industry specialized auditors have greater incentives to discover misstatements and more bargaining power with their client to cause adjustments to be made prior to disclosure. For example, prior research has demonstrated a fee premium paid to industry specialist auditors over nonspecialist Big 4 auditors (Craswell et al. 1995; Francis et al. 2005a) indicating that industry specialists have more to lose if their reputations are impaired by providing ineffective audits. If the same incentives for
accurate reporting hold for internal controls, since internal control quality may impact financial reporting quality, I would expect industry experts to be more likely to pressure management to disclose known weaknesses.

I define an industry leader equal to one if the auditor collects the greatest percentage of audit fees in the client’s industry nationally (i.e. total fees collected by a particular auditor in a given industry nationally, divided by the total audit fees collected by all auditors in that industry nationally). In my sample, 174 out of 520 companies are audited by industry leaders in 2003. Of the 174 observations audited by industry leaders, 171 are Big4 auditors and 3 are 2nd tier auditors (Grant Thornton or BDO Seidman).

Third, I include an auditor tenure variable (AUD_TENURE) equal to the number of years the current financial statement auditor has been in that capacity with the company. Previous research has generally provided evidence that longer auditor/client relationships result in higher quality reporting. For example, Myers et al. (2003) provide evidence of higher earnings quality with longer auditor tenure. Similarly, Geiger and Raghunandan (2002) document an inverse relationship between auditor tenure and audit reporting failures for a sample of companies entering into bankruptcy during the period 1996-1998.

Relying on these findings, I hypothesize that companies with longer auditor/client relationships will be more likely to report control problems prior to section 404-mandated audits.

In addition to auditor variables, I include the following two company-level governance quality measures.
First, I expect companies with higher quality audit committees (ACOMMQUAL) to be more likely to make accurate internal control reports under section 302. Prior research has examined the association between audit committee quality and the quality of internal controls. Using pre-SOX data, Krishnan (2005) finds that companies with audit committees that are independent and audit committees with financial expertise are significantly less likely to be associated with companies disclosing internal control problems prior to SOX-mandated disclosures. Krishnan and Visvanathan (2007a) provide evidence that companies whose audit committees hold more meetings and have a lesser proportion of financial experts are more likely to disclose control weaknesses under section 404. I extend these findings by holding constant the existence of internal control weaknesses in order to examine the impact of audit committee quality on the discovery and disclosure of internal control problems when a material weakness exists.

Measuring the quality of a company’s audit committee has become more challenging with publicly available data in recent years. For example, both the NASDAQ and NYSE now require that audit committees must have at least 3 members, all of whom are independent and at least one of whom must be a financial expert. SOX section 301 also requires the independence of all audit committee members and SOX section 407 requires the disclosure of whether or not the audit committee has at least one financial expert (and if not, why not). SOX defines a financial expert quite broadly. For example, the SOX definition easily includes company presidents and CEOs as financial experts by virtue of the oversight responsibilities they have for financial reporting (DeFond et al. 2005).
Prior research has used audit committee size, financial expertise, and independence as proxies for audit committee quality (Krishnan 2005). Variation is lost now that most companies are required to have all independent directors and all audit committees are essentially required to have at least one financial expert. Defining what constitutes a high quality audit committee becomes a more challenging task.

Recent research investigates the importance of having an “accounting financial expert” on the audit committee. For example, DeFond et al. (2005) find a significant positive market reaction to the appointment of accounting financial experts to the audit committee but no market reaction to the appointment of nonaccounting financial experts to the audit committee. Their findings indicate that the market values the added ability to serve effectively on the audit committee derived from having a background in accounting. Similarly, Krishnan and Visvanathan (2007b) provide evidence that audit committee financial expertise is positively related to accounting conservatism only when financial expertise is measured as accounting financial expertise, indicating that accounting financial experts may be able to influence external reporting to be more conservative.

I set ACOMMQUAL equal to one if the audit committee has at least one “accounting financial expert” on the committee during 2004 and 0 otherwise. I define an accounting financial expert as a member of the committee with experience in public accounting, auditor, principal or chief financial officer, controller, or principal or chief accounting officer (DeFond et al. 2005). Given the above findings I hypothesize that companies that have audit committees with at least one “accounting financial expert” are
more likely to discover and disclose material weaknesses prior to their first SOX 404 report than companies without such accounting financial expertise.

Second, I expect CFOs who are more qualified to be better able to discover weaknesses in internal controls (CFOQUAL). Under SOX 302, CEOs and CFOs are required to certify that the information in their company’s quarterly and annual reports is correct and that no important information has been omitted. Given this requirement to personally certify to the accuracy of their disclosures, it seems likely that CFOs would make significant efforts to ensure that their internal control report was accurate by disclosing all known weaknesses and by ensuring that a thorough analysis of controls was performed. Li et al. (2007) provide initial evidence that at least the board and/or the CEO felt that internal control quality falls under the responsibility of the CFO. They provide evidence of higher CFO turnover for firms disclosing initial adverse SOX 404 opinions compared to firms disclosing no weaknesses.

I measure CFOQUAL as an indicator variable equal to one if the company’s CFO has a CPA license or has worked for a public accounting firm and zero otherwise. I hypothesize that companies that have CFOs that have greater financial accounting background are more likely to discover and disclose weaknesses in their internal controls under section 302.

**Control Variables**

Prior research has provided evidence that control weakness disclosure is affected by management discovery and disclosure incentives. Ashbaugh-Skaife et al. (2007a) include the following 3 discovery/disclosure incentive variables in their model: First,
prior restatements or an SEC AAER (RESTATEMENT), Second, institutional ownership concentration (INST_CON), and (3) industry litigation risk (LITIGATION). I control for each of these incentives in my model.

Prior research has provided evidence that the financial resources available to the company (SUM_LOSS) impact the likelihood that they disclose weaknesses in internal controls under section 302 (Ashbaugh-Skaife et al. 2007a). Implementation of the sections of SOX dealing with internal controls was costly to companies (Solomon and Peecher 2004). Those companies with fewer financial resources may have found it difficult to effectively evaluate controls to the level necessary to discover existing weaknesses. Therefore, I would expect companies with fewer financial resources to be less likely to discover and disclose weaknesses under section 302.

On the other hand, companies with poorer financial health may have more pervasive or serious control problems coming from their inability to invest in internal controls in prior years. Companies with more obvious control problems are more likely to discover them than companies with fewer problems. Additionally, companies with poor financial health have less to lose by disclosing the problems to shareholders if the market already assesses the likelihood of control problems to be high.

I set the SUM_LOSS variable equal to one if the sum of the current and previous years’ income is negative and zero otherwise (Doyle et al. 2007a).\(^9\)

\(^9\) Results are robust to replacing this variable with an indicator variable equal to one if the sum of the cash flow from operations for the current and previous years is negative.
To control for other factors not explicitly controlled for relating to internal control reporting quality under section 302 I include a size control variable (SIZE) equal to the natural log of total assets.
IV. SAMPLE AND DESCRIPTIVE STATISTICS

My sample consists of all companies disclosing a material weakness in their internal controls from November 15\textsuperscript{th} 2004 through May 30\textsuperscript{th} 2005.\textsuperscript{10} I also include any company disclosing weaknesses under section 302 but not under 404 (implying a remediation of weak controls). I include these companies since they are a part of the full sample of companies that had material weaknesses in their internal controls and represent companies that disclosed those weaknesses under section 302. Results are robust to excluding these observations. Table 1 summarizes my sample selection procedure.

I obtain internal control data, auditor characteristics data, and data for the LITIGATION and RESTATEMENT variables from Audit Analytics Internal Control, Restatement, and Disclosure Control files. Data for the SUM_LOSS variable is obtained from Compustat. Data for the RESTATEMENT (AAERs), ACOMMQUAL, and CFOQUAL variables were hand collected from 10-Ks, Proxy Statements, and the SEC’s AAER listing using Lexis-Nexis. Finally, data for the INST_CON variable was obtained from the Thomson Financial 13-f dataset.

My dependent variable (DISCLOSE) is equal to one if a company disclosed a weakness at least once under section 302 and zero otherwise. To determine whether a company disclosed prior weaknesses I examine the three quarterly reports immediately prior to the company’s first section 404 report. Any company disclosing a material weakness in any of those reports is assigned to the disclosure group (coded 1 for the

\textsuperscript{10} This period covers the first 6 months of mandatory audits under SOX 404. I examine this time period since it is possible that reporting behavior changed as companies and their auditors and consultants gained experience in identifying control problems. In order to limit the amount of learning that might impact my results, I examine a relatively short time period where a majority of companies have fiscal year-ends.
DISCLOSE variable) and those not disclosing in any of the three previous quarters are assigned to the non-disclosure group (coded 0 for the DISCLOSE variable). Table 2 provides a summary of variable definitions. The 27 observations that reported weaknesses in one of the quarterly reports during the 2004 fiscal year were obtained by examining section 302 disclosures during 2004.

Univariate results are displayed in Table 3. BIG4 is insignificant (p>.2) in the predicted direction with the mean being higher for those companies disclosing weaknesses under section 302 than for those companies not disclosing under section 302.

CFOQUAL is significantly different between the two groups (p<.05) indicating that CFOs with more financial accounting background are better able to discover and/or more likely to disclose material weaknesses in internal controls than CFOs without similar background.

Opposite the prediction, company’s not reporting weaknesses under section 302 had, on average, significantly longer relationships with their auditors than companies that reported the weaknesses. This finding is consistent with the common argument that longer auditor/client tenure results in a lack of independence and therefore lower quality reporting. However, it could also be driven by companies with longer auditor/client relationships having less severe control problems that only surfaced when a thorough audit of internal controls was performed at year-end.

The difference in the means of IND_LEADER, ACOMMQUAL, and RESTATEMENT are highly significantly different in the predicted direction (p<.01). These results indicate that companies with higher quality audit committees or that have
industry leading auditors are better able to detect and more likely to disclose weaknesses in their internal control systems. Also, companies that restated their financial statements or were the object of an AAER during the two years from 2002 to 2003 are more likely to discover and disclose weaknesses in their internal control systems.

Surprisingly, the institutional holdings concentration variable (INST_CON) is significant at the ten percent level in the opposite direction from the prediction. The univariate results indicate that companies with greater institutional holdings concentration were less likely to disclose weaknesses in their internal control systems under section 302. This result may be due to companies’ desire to attempt to remediate problems before year end and thus avoid disclosure, and perhaps litigation associated with having higher institutional holdings concentration.

The univariate results for the financial position proxy (SUM_LOSS) indicate that on average companies disclosing weaknesses in their control systems under section 302 were more likely to have poor financial performance during the current and previous years (p<.01). This may be because companies that have had worse financial performance over the prior two years had less to invest in control systems, making weaknesses in internal controls easier to find. Another alternative explanation could be that companies reporting negative income felt they had less to lose by disclosing control weaknesses than a company that was performing well.

The difference in the means for the litigious industry dummy (LITIGATION) is opposite that predicted, with the mean being higher for nondisclosers than for disclosers, but is insignificant (p=.3444).
Table 4 shows correlations for all variables used in the model. The signs of each independent variable with the dependent variable in the same direction as the univariate findings in table 3. None of the correlation magnitudes between independent variables gives reason for concern.
V. MULTIVARIATE ANALYSIS

I employ a logit model to examine the differences in governance characteristics between those companies that disclose weaknesses under section 302 and those that do not. Table 2 summarizes the variable definitions.

\[
DISCLOSE_i = \beta_0 + \beta_1 \cdot BIG4_i + \beta_2 \cdot IND_LEADER_i + \beta_3 \cdot ACOMMQUAL_i + \\
\beta_4 \cdot CFOQUAL_i + \beta_5 \cdot AUD_TENURE_i + \beta_6 \cdot RESTATEMENT_i + \beta_7 \cdot INST_CON_i + \\
\beta_8 \cdot LITIGATION_i + \beta_9 \cdot SUM_LOSS_i + \beta_{10} \cdot SIZE_i + \epsilon_i
\]

Table 5 presents the results from estimating both the full model (Model 2) and a model in which I eliminate the CFOQUAL and INST_CON variables from the estimation (Model 1). I eliminate these two variables from the model because of the impact they have on the sample size and, therefore, the power of the estimation.\(^{11}\) The results from models 1 and 2 are similar.

I find that companies that are audited by industry specialized auditors\(^{12}\), that have an accounting financial expert on their audit committee, that have shorter auditor tenure, that have restated earnings or have been the subject of an SEC AAER during fiscal years 2002 or 2003, or that had poor financial performance in previous years are significantly more likely to disclose weaknesses during the 3 quarterly filings prior to their first SOX 404 report.

---

\(^{11}\) As displayed in Table 5 the sample size (n) is significantly reduced by including the CFOQUAL and INST_CON variables (from 519 to 351). Perhaps more serious is the reduction in the subsample of those disclosing weaknesses (n1) from 95 without these two variables to 72 with them.

\(^{12}\) Using a city-specific leadership variable measured the same way as the national measure but within a metropolitan statistical area (MSA) defined by the U.S. Census Bureau yields an insignificant coefficient on the LEADER variable in multivariate tests, and marginally significant results in univariate tests (p<.1). This may indicate that the additional internal control discovery ability derived from being an industry leader comes from specializing nationally and not just within a particular metropolitan area.
I find that companies with poorer financial health (SUM_LOSS) are significantly more likely to disclose weaknesses during the 3 quarterly filings prior to their first SOX 404 report. This finding suggests that companies with poorer financial health may have more pervasive or serious control problems coming from their inability to invest in internal controls, making it easier to discover weaknesses. Alternatively, companies reporting negative earnings during the current and previous years may have less to lose by disclosing weaknesses once discovered.

CFOQUAL and INST_CON are both insignificant in Model 2 and are excluded from Model 1. Both variables are significantly different between the disclose and nondisclose groups in univariate tests. Additionally, re-running the logit model excluding only one or the other of the two variables instead of excluding both yields significant coefficients on each of these variables (p<.07 in both instances). I conclude from these results that CFO background and credentials have a positive effect and INST_CON has a negative effect on the likelihood that a company discloses weaknesses in controls prior to their first section 404 report.

Similar to the univariate results in Table 3 and opposite my prediction, the coefficient on INST_CON is negative indicating companies with greater institutional ownership concentration are less likely to disclose weaknesses in their internal controls during the pre-404 implementation period. This sign is opposite that reported by Ashbaugh-Skaife et al. (2007a) who compare section 302 internal control deficiency (ICD) disclosers to all non-disclosers (both those with undisclosed ICDs and those with no ICDs).
One main difference between their sample and mine is that they include both significant deficiencies and material weaknesses in their disclosure group; I include material weaknesses only. To see if the sign on the institutional ownership concentration is sensitive to the type of control problem disclosed, I examine significant deficiency disclosures made during the three quarterly reports during 2004. I compare a sample of 32 companies that disclosed significant deficiencies during 2004 quarterly filings but not material weaknesses to the sample of companies reporting neither a material weakness nor a significant deficiency. I delete any observations that disclosed both material weaknesses and significant deficiencies during the 2004 quarterly reports to more directly test the impact of institutional ownership concentration on the disclosure of significant deficiencies. Table 6 presents the INST_CON coefficients from estimating the same logit model used above with both the old and the new dependent variable defined by significant deficiency disclosers. Estimating the model with the DISCLOSE variable defined by significant deficiency disclosers results in a positive and significant sign on the INST_CON variable (p<.01). My findings provide evidence that companies with more concentrated institutional ownership were significantly more likely to disclose significant deficiencies, but significantly less likely to disclose material weaknesses. This result provides evidence of systematic misclassification of internal control problems as significant deficiencies rather than material weaknesses for companies that have more highly concentrated institutional ownership. This finding could be indicative of strategic classification of internal control problems as significant deficiencies rather than material
weaknesses in order to downplay the seriousness to investors in high institutional ownership concentration settings.
VI. ACCRUAL QUALITY

Recent research by Ashbaugh-Skaife et al. (2007b) and Doyle et al. (2007b) has examined the relationship between the quality of accruals and internal control quality. These papers provide evidence that companies disclosing weaknesses in their internal controls have lower quality accruals. In this section I examine accrual quality for my sample of material weakness companies. I compare the accrual quality of companies disclosing weaknesses under section 302 to those not disclosing weaknesses.

Two competing hypotheses drive my tests of accrual quality. First, in my tests of characteristics of disclosers and nondisclosers I find evidence consistent with companies that have more pervasive/serious control problems being more likely to disclose weaknesses. If these control problems flow through to lower quality accruals I would expect to find lower accrual quality for the sample of companies disclosing weaknesses under section 302 of SOX than for those not disclosing until their first section 404 report. Second, I find some evidence that the disclosure of weaknesses in internal controls under section 302 is driven by strategic disclosure by management. If the management of nondisclosers has made strategic financial disclosures in prior periods I would expect to see lower quality accruals for the nondisclosing group.

I follow Doyle et al. (2007b) in the creation of my accrual quality variable. They use the model developed in Dechow and Dichev (2002) and modified by McNichols (2002) and Francis et al. (2005b) which defines accrual quality as the extent to which current accruals map into current, past, and future cash flows.
Following the approach used in Doyle et al. (2007b), I use the standard deviation of the residuals from the following regression model estimated cross-sectionally, by year, within each of the 48 Fama and French (1997) industry classifications as my measure of accrual quality (AQ).\textsuperscript{13}

\[ \Delta WC_t = \beta_0 + \beta_1 \ast CFO_{t-1} + \beta_2 \ast CFO_t + \beta_3 \ast CFO_{t+1} + \beta_4 \ast \Delta REV_t + \beta_5 \ast PPE_t + \epsilon_t \]

I use data from years 1995-2003 to estimate accruals quality. Since this estimate of accruals quality requires data from one year ahead and one year prior I obtain observations for the years 1996-2002. Higher standard deviation indicates lower accrual quality.

Univariate tests indicate a significant difference in the quality of accruals between the companies that disclose weaknesses in their internal controls under section 302 and those that wait until section 404 filings to disclose (p<.10, Untabulated). Companies disclosing weaknesses under section 302 have lower accrual quality suggesting that they have more pervasive/serious weaknesses that impact the quality of accruals than companies waiting to disclose until their first section 404 report. Untabulated multivariate results controlling for innate firm characteristics that may affect accruals quality (Doyle et al. 2007b) yield no significant difference between the two groups (p=.208).

\textsuperscript{13} See Doyle et al. (2007b) footnote 10 for detailed data descriptions, including Compustat data item numbers.
VII. CONCLUSIONS

I examine firm governance characteristics for a sample of companies disclosing material weaknesses under section 404 of SOX to determine what caused some companies to disclose those weaknesses prior to their first SOX 404 report and others not to disclose them.

I find companies that were audited by industry leading auditors, that have higher quality audit committees, that have shorter auditor/client relationships, that recently restated their financial statements or have been the subject of an SEC AAER, or that have experienced poor financial performance are more likely to discover and disclose weaknesses in their controls under section 302.

I find moderate evidence of a positive relationship between company’s that have a CFO with financial accounting background and disclosure prior to the SOX 404 report and a negative relationship between a company’s institutional ownership concentration and the probability that they disclose weaknesses in their controls prior to the SOX 404 report. In sensitivity tests, I find a positive relationship between a company’s institutional ownership concentration and the probability that they disclose significant deficiencies in their controls prior to the SOX 404 report suggesting systematic misclassification of control problems as significant deficiencies rather than material weaknesses in high institutional ownership concentration settings.

In univariate tests I find companies that disclosed weaknesses in their controls prior to SOX 404 reports had, on average, lower quality accruals measured using a modified Dechow and Dichev (2002) model. Multivariate results controlling for innate
firm characteristics that may affect accruals quality yield an insignificant difference between the two groups.

Evidence in this paper suggests strategic classification of control problems as significant deficiencies or material weaknesses. Future research should further examine the incentives for and hindrances to strategic classification by management.
APPENDIX A

FIGURES AND TABLES

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Section 302: Management required to perform internal control evaluations and report the findings to shareholders in quarterly and annual filings.

Section 404 (Detailed requirements in AS2 and subsequently modified in AS5): Auditor required to attest to, and report on, management’s evaluation of controls and issue their own opinion on the quality of internal controls (Required only in annual filings).

Sample Period (in gray)

First quarterly filing in 2004 fiscal year

Aug. 29, 2002

Nov. 15, 2004
May 30, 2005

Fig. 1—Timeline
Figure 2—Sample Comparison

Ashbaugh-Skaife et al. (2007a) sample groups

Material Weakness or Significant Deficiency Disclosers

Companies disclosing control problems under section 302

Current study sample groups

Nondisclosers

Companies not disclosing control problems under section 302

Companies having a material weakness but not disclosing it until section 404 report

Companies having a significant deficiency but not disclosing it until section 404 report

Companies that did not have a control problem
Table 1—Sample Selection Procedure for Multivariate Tests

<table>
<thead>
<tr>
<th>Description</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Companies reporting material weaknesses in internal controls under section 404 (11/15/2004 to 5/30/2005) as reported in Audit Analytics</td>
<td>542</td>
</tr>
<tr>
<td>Companies reporting material weaknesses in at least one of the 3 quarterly reports for the 2004 fiscal year but not under section 404, as reported in Audit Analytics</td>
<td>27</td>
</tr>
<tr>
<td>Missing data for reduced model</td>
<td>50</td>
</tr>
<tr>
<td>Final sample size for reduced model</td>
<td>519</td>
</tr>
<tr>
<td>Variables</td>
<td>Predicted Sign</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>DISCLOSE</td>
<td>Dependent Variable</td>
</tr>
<tr>
<td>BIG4</td>
<td>+</td>
</tr>
<tr>
<td>IND_LEADER</td>
<td>+</td>
</tr>
<tr>
<td>ACOMMQUAL</td>
<td>+</td>
</tr>
<tr>
<td>CFOQUAL</td>
<td>+</td>
</tr>
<tr>
<td>AUD_TENURE</td>
<td>-</td>
</tr>
<tr>
<td>RESTATEMENT</td>
<td>+</td>
</tr>
<tr>
<td>INST_CON</td>
<td>+</td>
</tr>
<tr>
<td>LITIGATION</td>
<td>+</td>
</tr>
<tr>
<td>SUMLOSS</td>
<td>?</td>
</tr>
<tr>
<td>SIZE</td>
<td>?</td>
</tr>
</tbody>
</table>
Table 3—Descriptive Statistics by Reporting Group

This table reports univariate statistics by whether the company reported material weaknesses under section 302 or not. The t-stat shown is for the null hypothesis that the difference between the mean value of those reporting under section 302 less the mean value of those not reporting under section 302 is equal to zero.

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>n1</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>n2</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>T-Stat</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIG4</td>
<td>519</td>
<td>95</td>
<td>0.8842</td>
<td>0.3217</td>
<td>424</td>
<td>0.8561</td>
<td>0.3514</td>
<td>0.7146</td>
<td>0.428</td>
</tr>
<tr>
<td>IND_LEADER</td>
<td>519</td>
<td>95</td>
<td>0.4526</td>
<td>0.5004</td>
<td>424</td>
<td>0.3066</td>
<td>0.4616</td>
<td>2.744</td>
<td>0.003***</td>
</tr>
<tr>
<td>ACOMMQUAL</td>
<td>519</td>
<td>95</td>
<td>0.7368</td>
<td>0.4427</td>
<td>424</td>
<td>0.5991</td>
<td>0.4907</td>
<td>2.517</td>
<td>0.006***</td>
</tr>
<tr>
<td>CFOQUAL</td>
<td>408</td>
<td>85</td>
<td>0.5059</td>
<td>0.5029</td>
<td>323</td>
<td>0.3963</td>
<td>0.4899</td>
<td>1.825</td>
<td>0.034**</td>
</tr>
<tr>
<td>AUD_TENURE</td>
<td>519</td>
<td>95</td>
<td>6.8421</td>
<td>7.1938</td>
<td>424</td>
<td>9.0637</td>
<td>7.9807</td>
<td>2.4952</td>
<td>0.006***</td>
</tr>
<tr>
<td>RESTATEMENT</td>
<td>519</td>
<td>95</td>
<td>0.2947</td>
<td>0.4583</td>
<td>424</td>
<td>0.1486</td>
<td>0.3561</td>
<td>3.418</td>
<td>0.0003***</td>
</tr>
<tr>
<td>INST_CON</td>
<td>451</td>
<td>81</td>
<td>0.0066</td>
<td>0.0045</td>
<td>370</td>
<td>0.0075</td>
<td>0.0055</td>
<td>-1.335</td>
<td>0.0913*</td>
</tr>
<tr>
<td>LITIGATION</td>
<td>519</td>
<td>95</td>
<td>0.3156</td>
<td>0.4673</td>
<td>424</td>
<td>0.3373</td>
<td>0.4733</td>
<td>-0.401</td>
<td>0.344</td>
</tr>
<tr>
<td>SUM_LOSS</td>
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<td>95</td>
<td>0.5579</td>
<td>0.4993</td>
<td>424</td>
<td>0.3514</td>
<td>0.4780</td>
<td>3.775</td>
<td>0.0001***</td>
</tr>
<tr>
<td>SIZE</td>
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<td>95</td>
<td>6.4295</td>
<td>1.8146</td>
<td>424</td>
<td>6.4671</td>
<td>1.8323</td>
<td>0.1810</td>
<td>0.4282</td>
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</table>

*,**,*** represents significance at the .1, .05, and .01 levels, respectively
Table 4—Correlations

<table>
<thead>
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<th></th>
<th>DISCLOSE</th>
<th>BIG4</th>
<th>IND_LEADER</th>
<th>ACOMMQUAL</th>
<th>CFOQUAL</th>
<th>AUD_TENURE</th>
<th>RESTATEMENT</th>
<th>INST_CON</th>
<th>LITIGATION</th>
<th>SUM_LOSS</th>
<th>SIZE</th>
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<tbody>
<tr>
<td>DISCLOSE</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>IND_LEADER</td>
<td>0.14</td>
<td>0.202</td>
<td>1</td>
<td>0.0084</td>
<td>-0.058</td>
<td>0.118</td>
<td>0.147</td>
<td>-0.107</td>
<td>-0.015</td>
<td>-0.003</td>
<td>0.194</td>
</tr>
<tr>
<td>ACOMMQUAL</td>
<td>0.089</td>
<td>0.04</td>
<td>-0.004</td>
<td>1</td>
<td>0.014</td>
<td>-0.073</td>
<td>0.013</td>
<td>-0.005</td>
<td>0.068</td>
<td>0.064</td>
<td>0.015</td>
</tr>
<tr>
<td>CFOQUAL</td>
<td>0.078</td>
<td>-0.091</td>
<td>-0.060</td>
<td>0.022</td>
<td>1</td>
<td>-0.143</td>
<td>-0.064</td>
<td>0.087</td>
<td>-0.024</td>
<td>-0.003</td>
<td>-0.122</td>
</tr>
<tr>
<td>AUD_TENURE</td>
<td>-0.135</td>
<td>0.214</td>
<td>0.186</td>
<td>-0.032</td>
<td>-0.155</td>
<td>1</td>
<td>-0.091</td>
<td>-0.093</td>
<td>-0.03</td>
<td>-0.102</td>
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<td>RESTATEMENT</td>
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<td>-0.028</td>
<td>0.151</td>
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<td>-0.140</td>
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<td>-0.025</td>
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<tr>
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<td>1</td>
<td>-0.000</td>
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<tr>
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<td>-0.023</td>
<td>0.093</td>
<td>-0.049</td>
<td>0.010</td>
<td>-0.007</td>
<td>0.005</td>
<td>1</td>
<td>0.09</td>
<td>-0.242</td>
</tr>
<tr>
<td>SUM_LOSS</td>
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<td>-0.014</td>
<td>0.024</td>
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<td>-0.105</td>
<td>0.092</td>
<td>0.100</td>
<td>0.052</td>
<td>1</td>
<td>-0.294</td>
</tr>
<tr>
<td>SIZE</td>
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<td>0.258</td>
<td>-0.001</td>
<td>-0.112</td>
<td>0.234</td>
<td>0.061</td>
<td>-0.450</td>
<td>-0.255</td>
<td>-0.247</td>
<td>1</td>
</tr>
</tbody>
</table>

The left-hand portion of the table represents Spearman correlations and the right-hand portion displays Pearson correlations. Bolded numbers indicate significance at the .05 level.
Table 5—Logit regression of DISCLOSE on governance characteristics and control variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Predicted Sign</th>
<th>Model 1 Coefficient</th>
<th>Model 2 Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSTANT</td>
<td>N/A</td>
<td>-2.49 (-4.30) ***</td>
<td>-1.873 (-2.27) **</td>
</tr>
<tr>
<td>Governance Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIG4</td>
<td>+</td>
<td>0.112 (0.29)</td>
<td>-.524 (-1.18)</td>
</tr>
<tr>
<td>IND_LEADER</td>
<td>+</td>
<td>0.608 (2.39) **</td>
<td>0.775 (2.54) **</td>
</tr>
<tr>
<td>ACOMMQUAL</td>
<td>+</td>
<td>0.569 (2.17) **</td>
<td>0.514 (1.65) *</td>
</tr>
<tr>
<td>CFOQUAL</td>
<td>+</td>
<td>.405 (1.42)</td>
<td></td>
</tr>
<tr>
<td>AUD_TENURE</td>
<td>+</td>
<td>-.042 (-2.26) **</td>
<td>-.052 (-2.21) **</td>
</tr>
<tr>
<td>Control Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RESTATEMENT</td>
<td>+</td>
<td>0.608 (2.17) **</td>
<td>0.585 (1.73) *</td>
</tr>
<tr>
<td>INST_CON</td>
<td>+</td>
<td>-54.891 (-1.64)</td>
<td></td>
</tr>
<tr>
<td>LITIGATION</td>
<td>+</td>
<td>-0.139 (-0.53)</td>
<td>-0.252 (-0.84)</td>
</tr>
<tr>
<td>SUM_LOSS</td>
<td>?</td>
<td>0.776 (3.11) ***</td>
<td>0.723 (2.48) **</td>
</tr>
<tr>
<td>SIZE</td>
<td>?</td>
<td>0.027 (0.36)</td>
<td>.0944354 (0.99)</td>
</tr>
</tbody>
</table>

n1—Disclose=1 95 72
n2—Disclose=0 424 279
n 519 351
Wald Chi2 38.63 34.92
Prob > Chi2 0.0000 0.0001
Pseudo R2 0.078 0.0980

*, **, and *** indicate significance at the .1, .05, and .01 levels, respectively
Numbers in parentheses are z-statistics for the associated coefficient
Table 6—INST_CON variable coefficients and Z-Statistics

This table presents INST_CON variable coefficients from estimating the logit model (model 1) with the dependent variable defined by both Material Weakness disclosers and Significant Deficiency disclosers

<table>
<thead>
<tr>
<th>DISCLOSE variable defined by:</th>
<th>n</th>
<th>n1</th>
<th>n2</th>
<th>Coefficient</th>
<th>Z-Stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material Weakness disclosure</td>
<td>351</td>
<td>72</td>
<td>279</td>
<td>-58.225</td>
<td>-1.64</td>
</tr>
<tr>
<td>Significant Deficiency Disclosure</td>
<td>279</td>
<td>32</td>
<td>247</td>
<td>102.663</td>
<td>2.98   ***</td>
</tr>
</tbody>
</table>

* *, **, and *** indicate significance at the .1, .05, and .01 levels, respectively
REFERENCES


