

Are voluntary internal controls-related audit report disclosures informative in IPOs?

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ABSTRACT: Initial public offering (IPO) companies are exempt from Section 404 of the Sarbanes-Oxley Act of 2002. As a result, investors must seek alternative sources for insight into the quality of the company's internal controls, which affect the quality of management-provided financial information. Auditing standards permit auditors to voluntarily state that their opinion does not extend to internal control effectiveness when not engaged to opine on the effectiveness of internal controls. Given auditors' limited ability to distinguish financial reporting quality in the unqualified audit report, the costly nature of audit report modifications, and auditors' litigation risk concerns, these voluntarily audit report disclosures are likely informative as to the quality of internal controls. Using a sample of IPOs completed on United States equity exchanges from 2005 through 2014, I predict and find that the above-mentioned audit report disclosure is associated with a higher likelihood of post-IPO auditor-reported material weaknesses, lower IPO offer prices, lower post-IPO earnings, and increased post-IPO returns-based risk. These associations are robust to addressing the endogenous nature of the auditor's disclosure decision. Overall, my results suggest that auditor voluntary disclosures are informative. This research should be of interest to investors, regulators tasked with reforming the audit reporting model, and legislators who recently passed Title I of the Jumpstart Our Business Startups Act that exempts qualifying IPO companies from Section 404(b) reporting requirements for up to five years.

Key words: audit reports, internal controls, initial public offerings

Data: Available from public sources identified in the text

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1. INTRODUCTION

This study examines the information content of voluntary audit report disclosures pertaining to internal controls over financial reporting (ICOFR) among initial public offering (IPO) companies. While IPO companies are exempt from Section 404(b) of the Sarbanes-Oxley Act of 2002 (SOx), which requires auditors to opine on management's assessment of the effectiveness of ICOFR for many public companies, auditors are still required to consider internal controls in the conduct of their audit. When not engaged to opine on ICOFR, in addition to the omission of an opinion on ICOFR, auditors can voluntarily state in the audit report that their opinion on the financial statements does not include an opinion on the effectiveness of ICOFR (AU Section 9550). Absent an explicit opinion on the effectiveness of ICOFR, non-standard audit report disclosure in accordance with AU Section 9550 (hereafter "AU 9550 disclosure") is not likely to convey new literal information. However, the current unqualified audit report does not provide an explicit outlet to publicly communicate internal control deficiencies when not engaged to opine on ICOFR.¹ Therefore, given its voluntary nature and limited alternatives for distinguishing financial reporting quality in the unqualified audit report, AU 9550 disclosure is likely informative.

Studying the informativeness of AU 9550 disclosure added to the audit report in the IPO registration statement is important for at least two reasons. One, the intent of Section 404 of SOx is to improve the reliability of information public companies provide to the financial markets (COSO 2006; PCAOB 2004). The improved reliability comes at a significant compliance cost, especially for smaller companies. SOx's cost has been linked to the significant decline in IPOs

¹ In a financial statement audit, the auditor can overcome internal control deficiencies through additional substantive testing in order to issue an unqualified opinion.

since 2000 (Gao, Ritter, and Zhu 2013), prompting legislators to pass Title I of the Jumpstart Our Business Startups (JOBS) Act in 2012. Title I created a new class of registrant, called an emerging growth company, that completes a modified IPO process and is exempt from the requirements of Section 404(b) of SOx for up to five years (PCAOB 2013).² The Section 404(b) exemption is noteworthy because material weakness disclosures are more informative for companies that are smaller and likely have higher pre-disclosure information asymmetry (e.g., IPO companies) (Beneish, Billings, and Hodder 2008).³ The JOBS Act forces investors seeking insight into the current and future internal control effectiveness of an emerging growth company to rely on information other than an explicit opinion from the auditor. Pre-IPO AU 9550 disclosure may serve as a potentially discerning source of information pertaining to the effectiveness of ICOFR, as revealed through its associations with post-IPO auditor-reported material weaknesses, IPO offer pricing, and post-IPO earnings and risk.

Two, the informativeness of non-standard audit report content under current auditing standards is unclear. Financial statement users often state that the standard U.S. audit report is uninformative unless it contains a going concern uncertainty (e.g., Humphrey, Loft, and Wood 2009; Gray, Turner, Coram, and Mock 2011), motivating the Public Company Accounting Oversight Board (PCAOB) to consider reforms to the audit reporting model (PCAOB 2013). Prior research provides mixed evidence on the informativeness of required or recommended

² An emerging growth company had less than \$1.0 billion in annual revenue during its most recently completed fiscal year and may take advantage of any one or more of the following accommodations: meet with certain institutional investors to gauge interest in a contemplated offering; receive an initial confidential review of the registration statement from the SEC; present only two (rather than three) years of audited financial statements in the registration statement and two (rather than five) years of selected financial data; exempt from the internal controls audit required by Section 404(b) of SOx; provide streamlined executive compensation disclosure and exempt from shareholder advisory votes on executive compensation; use private company phase-in periods for new accounting standards; and, exempt from PCAOB rules pertaining to auditor rotation and proposed auditor discussion and analysis. An emerging growth company maintains its status for up to five years after its IPO date.

³ Barth, Landsman, and Taylor (2014) examine emerging growth company IPOs and do not find any of the 158 companies sampled to voluntarily comply with Section 404(b) of SOx.

audit report modifications (e.g., Czerney, Schmidt, and Thompson 2014a, b; Butler, Leone, and Willenborg 2004; Bradshaw, Richardson, and Sloan 2001; Francis and Krishnan 1999). There has been limited research, however, on voluntary audit report modifications, which may be differentially informative due to their non-requisite nature.⁴ This is especially true in the IPO setting where the scarcity of publicly available information and abundance of informational asymmetries (Willenborg 1999) make the auditor a more significant information intermediary, relative to the high information and liquidity environments in which established U.S. public companies operate.⁵ For established companies, the audit report is potentially less informative to financial statement users relative to other sources of information.

Audit report modifications are costly to auditors because they can strain the auditor-client relationship and increase the risk of losing the client as a revenue source. AU 9550 disclosure is a modification to the standard unqualified audit report and, due to its costly nature, is likely added for consequential reasons, suggesting that it is informative. Specifically, AU 9550 disclosure may be provided when internal controls are poor, in an effort to disassociate the auditor from the underlying causes of a possible future financial reporting failure that could trigger a lawsuit in the already high litigation IPO environment.

I make four predictions pertaining to the effects of AU 9550 disclosure. One, AU 9550 disclosure is associated with an increased likelihood of post-IPO Section 404(b) material weaknesses. The premise for this expectation is that companies are less likely than auditors to

⁴ Concurrent work by Harris, Omer, and Tanyi (2014) examines disclosures on the role of a component audit firm in the audit. My research differs from theirs in that they focus on voluntary language in accordance with AU Section 543, as opposed to AU Section 9550, not strictly in the IPO setting, and are interested solely in the financial reporting quality implications.

⁵ The IPO setting is also an advantageous one in which to study the information content of AU 9550 disclosure because, whereas investors in established public companies after the passage of SOx expect the auditors to opine on ICOFR, the expectation for IPO companies is that ICOFR was not audited. Therefore, AU 9550 disclosure is more likely to convey new information regarding the scope of the auditor's work for established companies than for IPO companies.

detect internal control deficiencies (Bedard and Graham 2011). As well, resource constrained companies are less likely to remediate internal control deficiencies (Bedard, Hoitash, Hoitash, and Westermann 2012). Therefore, poor pre-IPO internal controls that motivate AU 9550 disclosure will persist until the auditor's Section 404(b) audit required in the second fiscal year after the IPO (at the earliest). Two, I predict that AU 9550 disclosure is negatively associated with IPO offer prices, as the perceived reliability of financial information is lower when internal controls are not audited. Three, I expect AU 9550 disclosure that reflects poor internal controls is associated with lower post-IPO earnings. Strong internal controls enhance the quality of information systems that generate the data management uses to make resource allocation decisions (Lambert, Leuz, and Verrecchia 2007). Poor internal controls, then, can contribute to the misallocation of resources and may require companies to divert resources to improve internal controls, leading to lower future financial performance. Four, AU 9550 disclosure, as a form of enhanced disclosure that suggests poor financial information quality, is associated with increased post-IPO risk. For this prediction, I draw on prior research that finds associations between internal control deficiencies and company risk (Ashbaugh-Skaife, Collins, Kinney, and Lafond 2009; Beneish, Billings, and Hodder 2008) and companies' disclosure practices and perceived riskiness (Lang and Lundholm 1993).

To test my hypotheses, I analyze the text of the audit report included in the S-1 or F-1 filing for a sample of IPOs completed on U.S. stock exchanges between 2005 and 2014 to identify reports that contain AU 9550 disclosure. I then test whether AU 9550 disclosure is informative as to future auditor-reported material weaknesses in ICOFR, IPO offer prices, future earnings, and post-IPO risk. I find that AU 9550 disclosure added to the audit report included in the registration statement is associated with an increased likelihood of post-IPO auditor-reported

material weaknesses in ICOFR. I also find that AU 9550 disclosure is associated with lower IPO offer prices using three complementary measures of the IPO offer price: the midpoint of the pre-IPO offer price range; the final IPO offer price; and, the price of the IPO company's stock at the close of the first day of trading. Finally, I find that AU 9550 disclosure is associated with lower future earnings and increased post-IPO risk. In an additional analysis, I confirm that my results with respect to AU 9550 disclosure are robust to addressing the endogenous nature of the auditor's decision to add such disclosure. Overall, I provide robust evidence that AU 9550 disclosure is informative as to internal controls quality, financial information quality, and IPO company performance and risk.⁶

My research makes three primary contributions to the accounting literature. One, I contribute to the literature on IPO disclosures. Prior research finds that management-provided voluntary disclosures are useful in the evaluation of IPO companies (e.g., Guo, Lev, and Zhou 2004; Leone, Rock, and Willenborg 2007; Schrand and Verrecchia 2002). Auditor-provided required disclosures are also informative to IPO investors (e.g. Willenborg and McKeown 2001; Ghicas, Papadaki, Siougle, and Sougiannis 2008). My research extends the disclosure literature by studying the information content of AU 9550 disclosure, as a unique type of non-management voluntary disclosure, for IPO companies. Studying non-management voluntary disclosure is important because limited involvement by third parties in pre-IPO companies makes it difficult for investors to assess the credibility of management voluntary disclosures. I am also the first, to my knowledge, to study the information content of the audit report for IPO companies strictly in the post-SOx regulatory environment characterized by heightened skepticism of both new issuances and auditors. Studying this time period is important because auditors' communications may be differentially informative under PCAOB regulation versus self-regulated regimes.

⁶ Ritter (1984, p. 221) argues that, in the IPO context, risk relates to informational differences.

Two, I contribute to the internal controls literature. Prior studies have analyzed the determinants (e.g., Ashbaugh-Skaife, Collins, and Kinney 2007; Doyle, Ge, and McVay 2007b) and consequences (e.g., Ashbaugh-Skaife, Collins, Kinney, and Lafond 2009; Doyle, Ge, and McVay 2007a) of material weaknesses in ICOFR. I extend this line of research by identifying the inclusion of AU 9550 disclosure in the pre-IPO audit report as a prospective factor that is incrementally informative of future financial reporting quality, earnings, and risk. This result is noteworthy because it suggests that more subtle auditor-provided information, as opposed to unambiguous significant deficiencies or material weaknesses, is relevant to the assessment of information quality and internal controls. My results should be of interest to legislators who passed Title I of the JOBS Act, which postpones the public communication of material weaknesses in ICOFR that may reasonably be known at the time of the IPO. My findings suggest that in passing Title I, legislators weighed public companies' compliance cost concerns more heavily than the potential cost of unaudited control systems to investors.

Three, I contribute to the literature on the information content of the audit report by studying previously unexamined AU 9550 disclosure. My research answers the call from Church, Davis, and McCracken (2008) for further research on the effect of different disclosures in the audit report.

The remainder of the paper is organized into four sections. Section 2 provides background information and develops the hypotheses. Section 3 details the sample selection procedure and research design. I review my empirical results in Section 4 and Section 5 concludes.

2. BACKGROUND INFORMATION AND HYPOTHESIS DEVELOPMENT

2.1 AU Section 9550

I utilize the non-standard audit report content provided in accordance with AU Section 9550 as a mechanism to study the information content of auditor voluntary disclosures. AU Section 9550 permits the addition of non-standard content to the audit report when the auditor does not opine on effectiveness of ICOFR. Prior to the IPO, the company's auditor is not required to opine on the effectiveness of ICOFR. However, professional standards require the auditor to obtain a detailed understanding of internal controls in order to assess control risk, which impacts the nature, timing, and extent of substantive audit procedures underlying the opinion on the fair presentation of the financial statements (Asare, Fitzgerald, Graham, Joe, Negangard, and Wolfe 2013). Because the auditor is required to consider internal controls in the course of a financial statement audit, she would have an understanding of the company's internal controls environment (AU Section 9550.11). When the auditor does not opine on the effectiveness of ICOFR, AU Section 9550.10 states that the auditor may consider adding, but is not required to add, the following language to the standard audit report:

“We were not engaged to examine management's assertion about the effectiveness of [name of entity's] internal control over financial reporting as of [date] included in the accompanying [title of management's report] and, accordingly, we do not express an opinion thereon.”

Refer to Appendix A for examples of AU 9550 disclosure from IPO companies in my sample.

2.2 Voluntary Disclosure in the IPO Setting

Enhanced disclosure is one way to reduce information asymmetry in IPOs. The extent of voluntary disclosures is associated with lower post-IPO information asymmetry (Guo, Lev, and Zhou 2004) and disclosure specificity in IPO registration statements reduces ex ante uncertainty (Leone, Rock, and Willenborg 2007). Voluntary company-provided news disclosures outside

regulatory filings are associated with less underpricing for companies with the highest first-day returns (Schrand and Verrecchia 2002). The limited information available from third party sources for IPO companies (Aharony, Lin, and Loeb 1993; Friedlan 1994), however, makes it difficult to judge the appropriateness of reported accounting numbers (Fan 1997). When other outlets do not provide credible information, the audit report becomes particularly useful (Church et al. 2008). Collectively, these results indicate that disclosure (particularly voluntary disclosure) is informative for IPO companies, but its impact on information asymmetry is limited when the disclosures are unverified.

Auditors, as third party information intermediaries, play a key role in shaping a company's information environment and enhance the credibility of disclosed information (Beyer, Cohen, Lys, and Walther 2010). They reduce information asymmetry in IPOs by opining on the financial statements included in the registration statement and ensuring that material facts in regulatory filings are properly disclosed (Willenborg 1999). Datar, Feltham, and Hughes (1991) analytically show that the content of the audit report is informative when higher audit quality is more costly. Subsequent empirical research supports this result, as going concern opinions (Willenborg and McKeown 2001) and "quantifiable qualifications" in international equity markets (Ghicas, Papadaki, Siougle, and Sougiannis 2008) are informative for IPO companies.⁷ Ultimately, audit report content is informative for IPO companies, but empirical tests to date have been restricted to required auditor disclosures. My research adds to this literature by exploring the informativeness of auditor-provided AU 9550 disclosure – a form of voluntary, non-management-provided disclosure.

2.3 Hypothesis Development

⁷ Ghicas et al. (2008, p. 513) define "quantifiable qualifications" as "monetary amounts missing or misstated on the financial statements but disclosed in the auditor's report." A comparable qualification does not exist under U.S. auditing standards.

2.3.1 Hypothesis 1

The first hypothesis predicts a positive association between AU 9550 disclosure and post-IPO auditor-reported material weaknesses. Private (pre-IPO) companies typically have weaker internal controls than public companies (Gray et al. 2011). Although private companies may have internal processes in place to evaluate internal controls, such as those prescribed by Section 302 of SOx, weaker controls persist because companies tend not to detect (and correct) as many internal control deficiencies, or those most-likely to affect financial reporting, as auditors (Bedard and Graham 2011). As IPO companies transition from private to public companies, many must improve their control environments to meet the higher standard for public companies.

The auditor can informally communicate observations on the company's ICOFR from its pre-IPO financial statement audit to management or the audit committee, providing a starting point for improvement efforts. However, resource-constrained companies, such as IPO companies, are less likely to remediate control problems that involve significant resources, especially large capital investments (Bedard et al. 2012). Control deficiencies not remediated will become reportable conditions in the auditor's opinion on the effectiveness of ICOFR.

The audit report is the outcome of a negotiation between management and the auditor (Antle and Nalebuff 1991; Gibbins, Salterio, and Webb 2001), during which auditors must balance client preferences against their fiduciary duty to act in the interest of financial market constituents. Companies are more likely to terminate their auditor after the auditor issues an audit report containing non-standard language (e.g. Chow and Rice 1982; Mutchler 1984; Geiger, Raghunandan, and Rama 1998), suggesting a company preference for a standard unqualified audit report and potential adverse consequences to the auditor for issuing a report containing non-standard content. Financial statement users' tendencies to limit their review of

the audit report to whether or not it is unqualified reinforce this client preference (Gray et al. 2011). The auditor's relationship with the company influences her likelihood of including not only adverse non-standard content in the audit report (Lennox 2005; Ye, Carson, and Simnett 2011), but also non-standard content that could be perceived unfavorably.⁸ The payment of audit fees from the company to the auditor strengthens the company's potential influence on the auditor (DeFond and Francis 2005; Francis 2006). To the extent non-standard audit report language influences companies' auditor retention decisions or audit fees, non-standard audit report language is costly and as a result, when voluntary, is not likely added for trivial reasons.

Public companies' audit reports are generally "boilerplate" (Gray et al. 2011), conveying little of the auditor's vast private information, due to the Securities and Exchange Commission's (SEC) requirement for all audit reports to be unqualified. Auditors can leverage the voluntary nature of AU Section 9550 to distinguish financial reporting and disclosure quality, the foundations of which are internal controls, in the unqualified audit report. I expect auditors to voluntarily include AU 9550 disclosure in the audit report when internal controls are poor, in response to auditors' heightened litigation risk exposure for IPOs relative to existing public companies (Venkataraman, Weber, and Willenborg 2008).⁹ Auditor litigation risk stems from the higher likelihood of being sued as a result of a failure in financial reporting (Palmrose 1987, 1988; Stice 1991; Lys and Watts 1994). Enhanced disclosure is an effective hedge against all

⁸ Financial statement users do not fully understand auditors' responsibilities (Church et al. 2008), which could be due, in part, to their inability to process the content of the audit report. Investors generally find, "The [audit] report is useful if one can read between the lines ... sometimes there are nuances, which can let the careful reader note the state of affairs is not as it should be" (CFA 2011, p. 9). Unsophisticated investors merely observe that a disclosure has been made without being able to infer the value of the disclosure (Fishman and Hagerty 2003) and may not recognize the nuanced nature of the audit report. A lack of understanding as to the auditor's responsibilities can lead financial statement users to perceive AU 9550 disclosure as conveying new information that a Section 404(b) audit was not conducted.

⁹ Venkataraman et al. note that companies register their IPO under the Securities Act of 1933 but, after going public, file under the Securities Exchange Act of 1934. Litigation risk exposure is higher under the 1933 Act than under the 1934 Act because the 1933 Act, in effect, imposes strict liability on issuers for material misstatements or omissions in a registration statement. Comparatively, under the 1934 Act, a plaintiff must demonstrate that an issuer knowingly misled investors.

types of litigation (Hanley and Hoberg 2012), with AU 9550 disclosure being a form of enhanced auditor disclosure. As such, auditors' AU 9550 disclosure can reduce litigation risk by disassociating the auditor from the poor internal controls underlying financial reporting failures that trigger future lawsuits.

I expect AU 9550 disclosure that reflects the auditor's lack of comfort with the effectiveness of ICOFR to be associated with an increased likelihood of auditor-identified material weaknesses in the first year after the IPO in which the auditor renders a Section 404(b) opinion. I formally state H1, in the alternative form, as follows:

H1: AU Section 9550 audit report disclosure is associated with an increased likelihood of post-IPO auditor-reported material weaknesses in ICOFR.

2.3.2 Hypothesis 2

The second hypothesis predicts a negative association between AU 9550 disclosure and IPO offer pricing. The company and its underwriters typically set the final offer price after market close on the day before the offering (Lowry and Schwert 2004), taking into consideration investors' perceptions of the issue gleaned from the road show (Benveniste and Spindt 1989). The offer price is set without the company or its underwriters knowing precisely what the market's valuation of the stock will be (Benveniste and Spindt 1989). IPO issuers' information advantage over investors (Ritter and Welch 2002; Demers and Joos 2007) and absence of a reference market price prior to the IPO (Friedlan 1994) make it difficult for investors to evaluate an IPO (Ritter and Welch 2002; Demers and Joos 2007). Information asymmetry between the company and investors can lead prospective investors to discount their valuation (Myers and Majluf 1984).

Accounting information is a key source of non-price information used to evaluate the IPO offer price (Friedlan 1994). Auditors reduce the information asymmetry between the company

and prospective investors by certifying the financial information management provides. The auditor's influence on the reliability of the financial information may be limited, however, because she is not required to conduct an audit of internal controls in accordance with Section 404 of SOx, the intent of which is to improve the reliability of information public companies provide (COSO 2006; PCAOB 2004). AU 9550 disclosure stating that a SOx audit was not conducted suggests that the reliability of financial statement information provided is lower, and risk stemming from the likelihood that company-specific information is of poor quality is relevant for pricing decisions (Francis, LaFond, Olsson, and Schipper 2005).¹⁰ Accordingly, I expect AU 9550 disclosure to be associated with lower IPO offer pricing and formally state my expectation as H2, in the alternative form, as follows:

H2: AU Section 9550 audit report disclosure is associated with lower IPO offer prices.

2.3.3 Hypothesis 3

AU 9550 disclosure may be associated with lower post-IPO earnings. ICOFR has an economically significant effect on company operations (Feng, Li, McVay, and Ashbaugh-Skaife 2014). Cheng, Dhaliwal, and Zhang (2013) show that investment inefficiency is mitigated after the disclosure of ICOFR weaknesses. Moreover, it is more difficult to predict company performance when internal controls are poor, as management guides (Feng, Li, and McVay 2009) and analysts forecast (Clinton, Pinello, and Skaife 2014) less accurately in the presence of Section 404 internal control deficiencies.

The quality of information systems, of which the effectiveness of internal controls is a key component, directly affects the quality of the financial data available for informed decision-making (Lambert et al. 2007). Managers relying on incomplete or inaccurate information face

¹⁰ Ecker (2014) finds evidence consistent with the hypothesis that information precision at the time of the IPO is unknown to investors and, therefore, must be estimated with considerable error due to the little or no public information history about a company's fundamentals.

more uncertainty and a good internal control system can improve the accuracy of disclosures and other decisions made using internal financial data (Feng, Li, and McVay 2009) by providing more timely, complete, and accurate financial information. Internal control problems can have a negative impact on future earnings indirectly through poorer quality decision-making and directly through the diversion of financial resources to improve the internal control environment. Of import to external financial statement users, future earnings may be less predictable when internal controls are poor because internal control weaknesses are associated with poorly estimated accruals that are not realized as cash flows (Doyle et al. 2007a). Ultimately, AU 9550 disclosure, as a proxy for poor internal controls, is likely associated with lower future earnings.

AU 9550 disclosure may also be associated with increased post-IPO risk. Material weakness disclosures are associated with significantly negative stock returns (Beneish et al. 2008; Hammersley, Myers, and Shakespeare 2008), indicating that these disclosures are informative to equity investors. Companies with internal control deficiencies have significantly higher idiosyncratic risk, systematic risk, and cost of equity (Ashbaugh-Skaife et al. 2009; Beneish et al. 2008). Ashbaugh-Skaife et al. interpret this result as demonstrating the link between financial information quality and risk. Increases in the perceived riskiness of a company are important because they can raise the cost of capital (Froot, Perold, and Stein 1992). Lang and Lundholm (1993) find that assessments of corporate disclosure practices are positively associated with companies' return volatility – a measure of perceived riskiness. It follows that voluntary AU 9550 disclosure, a form of enhanced auditor disclosure, may be associated with increased risk, especially to the extent that it suggests poor financial information quality.

I formally state my predictions for the associations between AU 9550 disclosure and post-IPO earnings and post-IPO risk as H3a and H3b, respectively, in the alternative forms as follows:

H3a: AU Section 9550 audit report disclosure is negatively associated with post-IPO earnings.

H3b: AU Section 9550 audit report disclosure is associated with higher post-IPO risk.

3. RESEARCH DESIGN

3.1 Sample Selection

I analyze the content of the audit report included in the registration statement for a sample of 1,667 IPOs completed on U.S. public equity exchanges from January 1, 2005 through mid 2014 to identify the presence of AU Section 9550 language. I use a Python script to download IPO data from www.nasdaq.com.¹¹ I restrict my analysis to companies that originally file their registration statement with the SEC on form S-1 or F-1. I exclude 332 observations for which the audit report is not available from AuditAnalytics. I exclude 76 IPOs with pre-IPO Section 302 SOx disclosures because I am interested in studying a setting where explicit public information pertaining to the effectiveness of ICOfR is not available. Consistent with prior IPO research, I exclude 203 observations with IPO offer prices less than \$5 per share and pre-IPO total assets of \$1,000,000 or less to limit the influence of economically small outliers on my results. After these exclusions, the sample of IPOs eligible for my multivariate analyses is 1,056. The final sample size for my test of H1 is 504 because AuditAnalytics does not contain SOx Section 404 auditor data for 381 observations, Section 404 data is not available within 27 months of the IPO date for 32 observations, and data necessary to compute control variables is missing

¹¹ www.nasdaq.com includes data for IPOs completed on multiple U.S. equity exchanges, including the NASDAQ, New York, and American Stock Exchanges, as well as on the Over the Counter Bulletin Board.

for 139 observations.¹² The sample size for my test of H2 is 993 due to 4 observations missing IPO offer prices and 59 observations lacking data necessary to compute control variables. The final sample for my test of H3a contains 826 observations because 39 observations are missing post-IPO Compustat earnings, 58 observations have pre-IPO return on assets of less than -100 percent, and 133 observations are missing data for control variables. The final sample for my test of H3b includes 959 observations, as 97 observations were missing CRSP data.

[Insert Table 1 Here]

3.2 Multivariate Analysis

3.2.1 Material Weakness Model

I test H1, which predicts an increased likelihood of auditor-reported material weaknesses in ICOFR when the audit report included in the IPO registration statement includes AU 9550 disclosure, using a logistic regression model where *MW* is the dependent variable and *AU9550* is the independent variable of interest, as follows:

$$MW = \beta_0 + \beta_1 AU9550 + \beta_2 AU508OTHER + \beta_3 AU508GC + \beta_4 LOSS + \beta_5 CRATIO + \beta_6 INVENTORY + \beta_7 ZSCORE + \beta_8 \log(MKTVAL404) + \beta_9 SQEMPLOYEES + \beta_{10} \log(SEGMENTS) + \beta_{11} BIGN404 + \beta_{12} CHGAUDITOR + \beta_{13} NAFRATIO + \beta_{14} \log(AUDITFEES) + \beta_{15} LITRISK + \beta_{16} AS5_404 + \varepsilon \quad (1)$$

MW is an indicator variable that equals one if the audit report identifies a material weakness in the first fiscal year (after the IPO) the auditor opines on the effectiveness of ICOFR, and zero otherwise. The independent variable of interest, *AU9550*, is an indicator variable equal to one if the audit report included in the registration statement states that the auditor was not engaged to audit the effectiveness of ICOFR and, accordingly does not express an opinion thereon, and zero otherwise. I identify the presence of AU 9550 disclosure using text-parsing routines that search

¹² New registrants are not required to comply with Section 404(b) of SOx until their second annual report filed as a public company. I restrict my analysis to 27 months after the IPO to include two full years, plus three months that it typically takes to prepare annual financial statements. My results are unchanged when I include the 32 observations with delayed compliance.

for keywords and phrases in the audit report that are indicative of internal control-related scope limitations. I manually validate the accuracy of my analysis for a sample of audit reports.

AU508OTHER and *AU508GC* control for other non-standard content in the audit report. AU Section 508.11 identifies eight circumstances that require the auditor to add non-standard language to the audit report. One circumstance is when there exists substantial doubt about the company's ability to continue as a going concern. The other circumstances convey information relevant to non-viability risks that may also be important considerations in the IPO context. Accordingly, I control for these other types of non-standard audit report language. *AU508OTHER* is an indicator variable equal to one if the audit report contains non-standard content, other than a going concern uncertainty, in accordance with AU Section 508, and zero otherwise. *AU508GC* is an indicator variable equal to one if the audit report expresses substantial doubt about the company's ability to continue as a going concern, and zero otherwise. I identify the presence of AU Section 508 language using text-parsing procedures consistent with Czerney et al. (2014a, b). While *AU9550*, *AU508OTHER*, and *AU508GC* are measured using the content of the audit report in the IPO registration statement, all other regression variables are calculated as of (for) the fiscal year end(ed) in which the auditor opines on the effectiveness of ICOPFR.

The control variables in this model follow Ashbaugh-Skaife et al. (2007) and Doyle et al. (2007b). I control for companies' financial soundness using an indicator variable that equals one if the company reports a loss, and zero otherwise (*LOSS*), the ratio of current assets to current liabilities (*CRATIO*), and the Zmijewski (1984) financial distress measure (*DISTRESS*). I control for company size with the market value of equity as of fiscal year end (*MKTVAL404*). I measure organizational complexity with the square root of the number of employees at the company as of

fiscal year end (*SQEMPLOYEES*) and the natural logarithm of the number of operating or business segments ($\text{Log}(\text{SEGMENTS})$).

I control for the auditor's ability to identify internal control deficiencies and incentives to disclose material weaknesses using four measures. *BIGN404* equals one if the company's auditor that issues the first opinion on ICOFR in accordance with Section 404(b) is Deloitte, Ernst & Young, KPMG, or PriceWaterhouseCoopers, and zero otherwise. *CHGAUDITOR* equals one if the auditor that opines on the effectiveness of ICOFR is different from the auditor that signs the audit report included in the IPO registration statement, and zero otherwise. I measure the economic bond between the company and auditor using the ratio of non-audit fees to total fees (*NAFRATIO*) and the natural logarithm of the total audit fees ($\text{Log}(\text{AUDITFEES})$) to control for any potential economic bonding and auditor effort.

Consistent with Ashbaugh-Skaife et al. (2007), I control for heightened litigation risk using an indicator variable that equals one if the company is in a high litigation risk industry, and zero otherwise (*LITRISK*). I identify high litigation risk industries following Venkataraman et al. (2008). Finally, I include an indicator variable associated with the passage of Auditing Standard No. 5 (*AS5_404*) that equals one if the period end date of the first audit report that includes an opinion on ICOFR is on or after November 15, 2007, and zero otherwise. I winsorize all continuous variables at the 1 percent and 99 percent levels. Refer to Appendix B for further discussion of variable construction and data sources.

3.2.2 Offer Price Model

H2 predicts that the presence of AU 9550 disclosure in the audit report is negatively associated with the IPO offer price. To test H2, I use Ordinary Least Squares (OLS) to estimate

the following model expanded from the accounting-based IPO valuation model in Bartov, Mohanram, and Seethamraju (2002):

$$\begin{aligned}
 IPOPRICE = & \beta_0 + \beta_1 AU9550 + \beta_2 AU508OTHER + \beta_3 AU508GC + \beta_4 BIGN + \\
 & \beta_5 \text{Log}(UNDERWRITERS) + \beta_6 \text{Log}(IPO_LENGTH) + \\
 & \beta_7 \text{Log}(SHARES_OFFERED) + \beta_8 POSEPS + \beta_9 NEGEPS + \beta_{10} POSBV + \\
 & \beta_{11} NEGBV + \beta_{12} FLOAT + \beta_{13} RDPS + \beta_{14} NASD_ADJ + \beta_{15} TECH + \beta_{16} LITRISK + \\
 & \beta_{17} AS5 + \beta_{18} DODDFRANK + \beta_{19} JOBS + \varepsilon
 \end{aligned} \tag{2}$$

IPOPRICE is the final IPO offer price per share. *AU9550* is the independent variable of interest.

In addition to controlling for the other non-standard language in the audit report using *AU508OTHER* and *AU508GC*, I control for the quality of the company's auditor using an indicator variable that equals one if the company's auditor is Deloitte, Ernst & Young, KPMG, or PriceWaterhouseCoopers, and zero otherwise (*BIGN*). I include a measure for the quality of the auditor because a company's independent auditor is a key member of its IPO expert advisor team. Underwriters encourage filing companies to engage a high-quality auditor to protect their reputations (Simunic and Stein 1987). IPO companies with prestigious underwriters are more likely to change to more credible auditors (Menon and Williams 1994), with the demand for high-quality auditors increasing with firm risk (Copley and Douthett, 2002). In the end, the quality of an IPO company's auditor can impact the IPO offer price.

The company's underwriters play a critical role in the IPO's pricing. IPO companies benefit from including more underwriters in the IPO syndicate (Corwin and Schultz 2005). I control for the size of the underwriting syndicate using the number of non-lead underwriters (*UNDERWRITERS*).

A company's preparedness to complete an IPO can impact the time it takes to complete its IPO. The SEC's Division of Corporation Finance reviews all IPO registration statements and communicates areas for improvement to the company in the form of a comment letter, to which

the company must respond with an amended registration statement. There can be several iterations of comments (Ertimur and Nondorf 2006) and comments have varying remediation costs depending on the accounting issue (Cassell, Dreher, and Myers 2013), suggesting that a longer IPO period has a negative impact on the offer price. Alternatively, a longer IPO period provides underwriters with more time for bookbuilding activities that can increase the demand, and ultimately offer price, for the IPO. Consistent with Loughran and McDonald (2013), I control for the length of the IPO period with *IPO_LENGTH*, which equals the number of days between the filing of the registration statement and IPO offer date.

Companies seeking to raise a predetermined amount of capital through the IPO can trade off the price at which they offer their shares with the number of shares offered. Consistent with Lowry, Officer, and Schwert (2010), I control for the number of shares issued in the IPO (*SHARES_OFFERED*).

Next, I include several control variables following Bartov et al. (2002). *POSEPS* (*NEGEPS*) equals earnings per share for positive (non-positive) pre-IPO earnings, and zero otherwise. Earnings per share is calculated as earnings before extraordinary items for the last fiscal year ended prior to the IPO divided by total shares outstanding after the IPO. *POSBV* (*NEGBV*) equals book value of equity per share for positive (non-positive) pre-IPO book value of equity, and zero otherwise. Book value per share is calculated as common shareholders' equity as of the last fiscal year end prior to the IPO divided by total shares outstanding after the IPO. *FLOAT* equals the total number of shares offered in the IPO relative to total shares outstanding after the IPO. *RDPS* is research and development per share, calculated as research and development expenses for the last fiscal year ended prior to the IPO divided by total shares

outstanding after the IPO. Finally, *NASD_ADJ* is the level of the NASDAQ exchange on the IPO date, adjusted for inflation based on the Consumer Price Index.

I include two industry-based controls. One, significantly different IPO failure models apply to technology companies than to non-technology companies (Demers and Joos 2007) and there are noticeable differences between the valuation models for Internet and non-Internet companies (Bartov et al. 2002). Accordingly, *TECH* is an indicator variable equal to one if the company belongs to one of the technology industries Loughran and Ritter (2004) identify, and zero otherwise. Two, litigation risk is a relevant consideration for IPO pricing (Tinic 1988; Hughes and Thakor 1992), so I include *LITRISK*.

Finally, I control for time period effects associated with the implementation of Auditing Standard No. 5 and passing of the Dodd-Frank and JOBS Acts. *AS5* equals one if audit report included in the registration statement is for a period ended on or after November 15, 2007, and zero otherwise. *DODDFRANK* equals one if the company's IPO date is on or after the date the Dodd-Frank Act was passed (July 21, 2010), and zero otherwise. *JOBS* equals one if the company's IPO date is on or after the date the JOBS Act was passed (April 5, 2012), and zero otherwise. All other variables are as previously defined.

3.2.3 Earnings Forecast Model

H3a predicts a negative association between AU 9550 disclosure and post-IPO earnings. To test H3a, I use OLS to estimate an accounting-based earnings prediction model modified from Harford, Mansi, and Maxwell (2002), in which return on assets (*ROA*) represents a scaled measure of earnings. My multivariate model is as follows:

$$ROA_{post} = \beta_0 + \beta_1 AU9550 + \beta_2 AU508OTHER + \beta_3 AU508GC + \beta_4 ROA_{pre} + \beta_5 NWC_{pre} + \beta_5 LEVERAGE_{pre} + \beta_6 Log(AT_{pre}) + \beta_7 Log(OFFER_AMT) + \varepsilon \quad (3)$$

AU9550 is my independent variable of interest. My dependent variable (ROA_{post}) is return on assets for the first fiscal year ended after the IPO. I calculate return on assets using net income before extraordinary items divided by total assets. I control for the other non-standard content in the audit report included in the IPO registration statement using *AU508OTHER* and *AU508GC*, as previously defined. ROA_{pre} equals return on assets for the last fiscal year ended prior to the IPO. NWC_{pre} equals net working capital, calculated as total current assets (excluding cash and cash equivalents) less total current liabilities, scaled by total assets. $LEVERAGE_{pre}$ equals total liabilities divided by total assets. AT_{pre} equals total assets for the last fiscal year ended prior to the IPO. Lastly, I control for the gross proceeds from the IPO, which may be reinvested in the business to increase future earnings. I calculate gross proceeds as the IPO offer price per share times the number of shares issued (*OFFER_AMT*).

3.2.4 Risk Model

H3b predicts that the presence of AU 9550 disclosure in the audit report is associated with increased post-IPO risk. To test H3b, I use OLS to estimate the following model:

$$Risk = \beta_0 + \beta_1 AU9550 + \beta_2 AU508OTHER + \beta_3 AU508GC + \beta_4 BIGN + \beta_5 \log(Underwriters) + \beta_6 \log(IPO_Length) + \beta_7 Float + \beta_8 Turnover + \beta_9 InitialRet + \beta_{10} \log(MktVal) + \beta_{11} LitRisk + \beta_{12} Tech + \beta_{13} AS5 + \beta_{14} DoddFrank + \beta_{15} Jobs + \varepsilon \quad (4)$$

I use two complementary measures for *Risk*, both calculated over [1, 60] and [1, 250] trading day intervals, where day 0 denotes the IPO date. One, I measure risk using the standard deviation of daily returns (e.g., Carter, Dark and Singh 1998). *SDRET60* (*SDRET250*) is the standard deviation of daily raw returns for the 60 (250) trading days after the IPO date. Two, *SDRESID60* (*SDRESID250*) is the standard deviation of the residuals from the market model (Sharpe 1963)

estimated using the 60 (250) trading days after the IPO.¹³ I log-transform the standard deviations and estimate the market return using the daily return on the value-weighted CRSP.

AU9550 is my explanatory variable of interest. Because the audit opinions of larger auditors are more predictive of post-IPO outcomes and first-year returns (Weber and Willenborg 2003), I include *BIGN* to control for auditor size. I control for the number of underwriters in the IPO syndicate (*UNDERWRITERS*) because underwriters can influence post-IPO prices through direct participation in the aftermarket (Ritter and Welch 2002). *IPOLENGTH* is included in the model because IPOs that take longer to complete have more time to engage in bookbuilding and price discovery (e.g., Aggarwal and Conroy 2000), which can impact the post-IPO performance. I include *FLOAT* as a control because the percentage of ownership retained in the company by pre-IPO owners can signal the credibility of company-provided information (Leland and Pyle 1977). I control for the IPO date share turnover (*TURNOVER*), calculated as the number of shares traded relative to the total shares outstanding. *INITIALRET* equals the IPO date return, calculated as the difference between the price at the end of the IPO date and IPO offer price, scaled by the IPO offer price. Trading volume in the IPO aftermarket is higher when underpricing is greater (Krigman, Shaw, and Womack 1999; Ellis, Michaely, and O'Hara 2000), and enhanced trading volume can lead to increased volatility. *MKTVAL* equals the number of shares outstanding on the IPO date times the IPO offer price and controls for company size, as small and large companies have different risk profiles that are reflected in return-based measures of risk (e.g., Cheung and Ng 1992). *LITRISK*, *TECH*, *AS5*, *DODDFRANK*, and *JOBS* are included for reasons similar to those provided in Section 3.2.2. Definitions for previously defined variables are still applicable.

¹³ Ashbaugh-Skaife et al. (2009) similarly use the standard deviation of the residuals to measure idiosyncratic risk. To be included in the risk sample, I require IPO companies to have data available in CRSP for at least 30 and 125 of the 60 and 250 trading days, respectively.

4. EMPIRICAL RESULTS

4.1 Descriptive Statistics

Table 2 presents descriptive statistics for AU Section 9550 language by IPO year. Table 2, Panel A, displays the frequency of *AU9550*, the number of instances of *MW*, and mean *OFFER_AMT* by IPO year for the material weakness sample. Table 2, Panel B, displays the frequency of *AU9550* by IPO year and the mean *IPOPRICE* and *OFFER_AMT* for the IPO offer price sample. Table 2, Panel C, presents the frequency of *AU9550* and means for *EPS_{post}* and *OFFER_AMT* by IPO year for the earnings forecast sample. Table 2, Panel D, shows the frequency of *AU9550* and means for *SDRET60* and *OFFER_AMT* by IPO year for the risk sample. All four panels show that AU 9550 disclosure is present in more than 50 percent of IPOs in each year after 2005 when there is more than one IPO during the year in my final sample. IPO offering amounts average around \$200 million overall, with the highest mean IPO offering amounts observed in 2009 and lowest in 2010. Panel A reveals that material weaknesses are more prevalent in IPOs completed in 2007 and 2010. Panel B shows that mean IPO offer prices range from \$12.83 in 2008 to \$16.13 in 2013. Panel C reveals that companies completing IPOs, on average, are not profitable in the near term after the IPO. The financial crisis and post financial crisis years of 2008 to 2010 are notable exceptions, indicating that companies with stronger prospects completed IPOs during this time. Finally, Panel D shows that the mean return volatility over the 60 trading days after the IPO ranged from 2.7 percent in 2006 to 4.3 percent in 2008, which contained the height of the financial crisis.

[Insert Table 2 Here]

Table 3 presents descriptive statistics for my dependent and independent variables. Table 3, Panel A, displays descriptive statistics for my dependent variables. The percentage of

observations reporting a material weakness after the IPO is 4.6 percent.¹⁴ *IPOPRICE* has a mean of \$14.92 and exhibits great variation, with a standard deviation of \$5.87. Companies have an average return on assets in the first year after their IPO of -1.1 percent, but more than half of the companies have a positive return on assets (*ROA_{post}*). The standard deviations of returns (*SDRET*) and of the market model residuals (*SDRESID*) appear to be distributed similarly. *SDRET* and *SDRESID* are larger over the 250-trading day windows than over the 60-day windows, likely due to underwriters' tapering of price support for the IPO in the aftermarket over time, as well as the expiration of lockup periods (typically 180 days) that increase liquidity.

[Insert Table 3 Here]

Table 3, Panel B, displays descriptive statistics for my independent variables. The percentage of observations with AU 9550 disclosure (*AU9550*) is 58.7 percent, while 46.1 percent of observations contain other non-going concern non-standard language (*AU508OTHER*) and 4.6 percent of observations contain going concern uncertainties (*AU508GC*). IPO companies appear to routinely engage high quality auditors (*BIGN*) and half of the IPOs use three or more underwriters (*UNDERWRITERS*). Sample IPO companies complete their IPO in an average of 127 days and issue 12.1 million shares. The mean (median) IPO date turnover (*TURNOVER*) and returns (*INITIALRET*) are 27.2 percent (17.4 percent) and 12.6 percent (6.4 percent), respectively. On average, IPO companies have negative pre-IPO return on equity, and are profitable, liquid, not at risk of bankruptcy, and carry relatively little inventory. Statistics for variables included in more than one multivariate model are presented only once for brevity.

Table 4 presents univariate statistics for the dependent variables in my multivariate analyses, by observations with and without *AU9550*. The table shows that IPO companies with

¹⁴ Comparatively, of the 5,935 companies Doyle et al. (2007b) identifies in the 2003 Compustat database, 779 disclose material weaknesses between August 2002 and 2005, for a rate of 13.1 percent.

AU9550 are significantly more likely to have post-IPO auditor-reported material weaknesses in ICOFR ($p < 0.10$, two-tailed), indicating a univariate association between AU 9550 disclosure and poor internal controls (*MW*). I also find a negative and significant association ($p < 0.01$, two-tailed) between *AU9550* and *IPOPRICE*. This suggests that the presence of AU 9550 disclosure negatively impacts the IPO offer price. Finally, Table 4 shows that *AU9550* is significantly associated with increased post-IPO risk, where post-IPO risk is measured using the logarithm of the standard deviation of returns ($\text{Log}(\text{SDRET})$) and the logarithm of the standard deviation of the residuals from the market model ($\text{Log}(\text{SDRESID})$) over the 60 and 250 trading days after the IPO date. Overall, these results provide univariate support for hypotheses H1, H2, and H3b.

[Insert Table 4 Here]

I analyze the correlations (not reported) between my independent variable and controls in my multivariate analyses. The pairwise correlations between *AU9550* and each of *BIGN*, $\text{Log}(\text{AT})$, $\text{Log}(\text{OFFER_AMT})$, *CHGAUDITOR*, $\text{Log}(\text{AUDITFEES})$, and *AS5_404* are statistically significant at $p < 0.05$, but do not exceed 0.132 in absolute terms. I also perform collinearity diagnostics and find variance inflation factors for all variables are between one and four. Collectively, the results of these analyses suggest multicollinearity is not a significant concern.

4.2 Multivariate Analysis

Table 5 presents the logistic regression results for Model 1. Model 1 includes controls for factors from prior research found to be associated with the likelihood of auditor-reported material weaknesses in ICOFR. The discriminant ability of the model is excellent ($\text{ROC} = 0.81$), following Lemeshow and Hosmer (1982). I use Model 1 to test H1, in which I predict that the inclusion of AU 9550 disclosure in the pre-IPO audit report is associated with an increased likelihood of post-IPO auditor-reported material weaknesses in ICOFR in the first year the

auditor renders such an opinion. The coefficient for *AU9550* is positive and statistically significant ($p < 0.05$, one-tailed). The coefficient for *AU9550* of 1.123 corresponds to an odds ratio of 3.073, which means that a company with AU 9550 disclosure is three times more likely to subsequently have a material weakness in ICFR than a company without AU 9550 disclosure. These results provide support for my prediction in H1 that AU 9550 disclosure is associated with an increased likelihood of post-IPO auditor-reported material weaknesses are consistent with the notion that AU 9550 disclosure reflects a poor internal control environment.

[Insert Table 5 Here]

Table 6 presents my estimation of Model 2, which I use to test H2. In H2, I predict a negative association between AU 9550 disclosure and IPO offer prices. The coefficient for *AU9550* is -0.80 and statistically significant ($p < 0.01$, one-tailed), after controlling for other factors associated with IPO offer prices. The sign and magnitude of coefficient for *AU9550* suggests that the presence of AU 9550 disclosure is associated with a per share IPO offer price that is \$0.80 lower. These results provide support for H2, indicating that AU 9550 disclosure is associated with lower IPO offer prices.

[Insert Table 6 Here]

Table 7 presents the results for my test of H3a. I estimate Model 3, which includes controls for factors that may be associated with future earnings, to test H3a. In H3a, I expect a negative association between AU 9550 disclosure and post-IPO earnings. Consistent with my prediction, the coefficient for *AU9550* is negative and statistically significant ($p < 0.05$, one-tailed).¹⁵ The coefficient for *AU9550* of -0.016 suggests that AU 9550 disclosure is associated with post-IPO return on assets that is, on average, 1.6 percent lower.

¹⁵ Unreported analyses reveal that the accruals component of earnings drives this result, consistent with company-level controls that are more difficult to “audit around” explaining lower accruals quality (Doyle et al. 2007a).

[Insert Table 7 Here]

Table 8 presents the results for Model 4 and my test of H3b. H3b predicts that the inclusion of AU 9550 disclosure in the pre-IPO audit report is associated with increased post-IPO risk, where risk is measured using the standard deviation of returns ($SDRET60(250)$) and the standard deviation of unexplained returns ($SDRESID60(250)$) over the 60 (250) trading days after the IPO date. The coefficient for $AU9550$ is positive and not statistically significant in Columns 1 and 3, where the dependent variables are $Log(SDRET60)$ and $Log(SDRESID60)$, respectively, and positive and statistically significant ($p < 0.05$, one-tailed) in Columns 2 and 4, where the dependent variables are $Log(SDRET250)$ and $Log(SDRESID250)$, respectively.¹⁶ These results indicate that AU 9550 disclosure is associated with increased post-IPO risk beyond the first quarter after the IPO, providing support for H3b.

[Insert Table 8 Here]

To summarize, I find results consistent with my hypotheses. AU 9550 disclosure is associated with a higher likelihood of auditor-reported material weaknesses in ICOFR in the first year the auditor opines on ICOFR. I also find that AU 9550 disclosure is associated with lower IPO offer prices. Finally, I find that AU 9550 disclosure is associated with lower post-IPO earnings and increased post-IPO risk. These results collectively suggest that voluntary AU 9550 disclosure is informative, as it conveys information relevant to the assessment of information quality, company value, and future performance and risk.

4.3 Selection Bias

Auditors' decisions to add AU 9550 disclosure to the audit report do not arise randomly and pose a potential source of selection bias. I attempt to address the potential endogeneity in my

¹⁶ The lack of statistically significant results over the 60 trading day window may be attributed to the presence of lock-up periods that restrict pre-IPO investor sales of shares, underwriter price stabilization activities, and limited opportunities for short selling, all of which can impact return volatility.

setting using the Heckman (1979) procedure. I employ the Heckman procedure because it accommodates unobservable factors that may contribute to selection bias (Tucker 2010). This is important in my setting because there is limited data publicly available to proxy for the auditor's private information that informs the pre-IPO decision.

In the first stage of the Heckman procedure, I use probit regression to estimate the following model for each of my four samples (material weakness, IPO offer price, earnings, and risk):

$$AU9550 = \beta_0 + \beta_1 AU9550_PREV + Model\ N\ Controls + \varepsilon \quad (5)$$

AU9550_PREV, my exclusion variable, equals one if a peer IPO company's audit report contains AU 9550 disclosure, and zero otherwise. I identify peer IPO companies as those in the same industry that complete (i.e., do not withdraw) an IPO and are audited by a different auditor.¹⁷ From the eligible peer IPO companies, I select the single peer IPO company who's audit report was filed most recently prior to the signature date of the Company's audit report. *Model N Controls* refer to the controls in Model N, where N=1, 2, 3, or 4. *AU9550* is as previously defined. In untabulated results, the coefficient for *AU9550_PREV* is statistically significant (p<0.01, two-tailed) in all regressions.

From the estimation of Model 5 for each of my samples, I calculate the inverse Mills' ratio and estimate the following second stage model:

$$Model\ N\ Dep.\ Var. = \beta_0 + \beta_1 AU9550 + \beta_2 MILLS + Model\ N\ Controls + \varepsilon \quad (6)$$

¹⁷ I consider peer IPO companies audited by a different auditor because audit firm and audit office experiences are incrementally significant predictors of financial reporting quality (Lennox and Li 2014). Identifying peer IPO companies with the same auditor, then, may confound auditor experiences with client financial reporting or internal controls quality conveyed through AU 9550 disclosure. Additionally, a practically motivated reason for not considering IPOs by the same audit firm is that an audit firm is not likely to audit consecutively filed IPOs in the same industry.

Model N Dep. Var. refers to the dependent variable from Model N, where N=1, 2, 3, or 4. *MILLS* equals the inverse Mills' ratio calculated from the first stage estimation.

To be a valid exclusion variable, *AU9550_PREV* should be correlated with *AU9550*, but uncorrelated with each *MW*, *IPOPRICE*, *ROA_{post}*, and *Risk*. I expect *AU9550* and *AU9550_PREV* to be correlated because the inclusion of AU 9550 disclosure by the auditor of a peer company that recently filed a registration statement may influence the auditor's decision to add AU 9550 disclosure. On the one hand, auditors can use other auditors' AU 9550 disclosure for recent IPOs as precedential leverage during audit report negotiations with the client. On the other hand, IPO companies that observe peers complete their offering with AU 9550 disclosure at lower offering prices will be less willing to accept this non-standard disclosure. I do not expect *AU9550_PREV* to be correlated with the Model 6 dependent variables because AU 9550 disclosure reflects idiosyncratic financial information and internal controls quality. Therefore, the non-standard content of a peer IPO company's audit report is not relevant to the assessment of the IPO company's financial reporting or internal controls quality.

Table 9 presents the results of the estimation of Model 6. Column 1 shows a negative and statistically significant ($p < 0.05$, one-tailed) association between *AU9550* and *MW*, providing continued support for H1. The coefficient for *AU9550* is negative and statistically significant ($p < 0.05$, one-tailed) in Column 2, indicating a negative association between AU 9550 disclosure and IPO offer prices, consistent with my prediction in H2. Column 3 reveals a negative and statistically significant ($p < 0.10$, one-tailed) association between *AU9550* and *ROA_{post}*, providing further support for H3a. Finally, the associations between *AU9550* and my returns-based measures of risk are positive and statistically significant ($p < 0.05$, one-tailed), consistent with H3b. The coefficients for *MILLS* are statistically significant at $p < 0.05$ (two-tailed) or better in

Columns 3 through 7. The lack of statistical significance for *MILLS* in Columns 1 and 2 suggests *AU9550_PREV* is an imperfect exclusion variable in these models. Overall, the initial results in support of my hypotheses continue to hold after controlling for selection bias.

[Insert Table 9 Here]

4.4 Untabulated Analyses

More prestigious auditors are associated with IPOs that are inherently less risky and have better long-term performance (Michaely and Shaw 1995). Accordingly, I re-estimate my multivariate models on the subset of IPO companies that engage a Big N auditor for their IPO. Results are consistent with those of the full sample in the material weakness, IPO offer price, and earnings forecast models. The inconsistent results in the risk model indicate that IPO companies audited by non-Big N auditors are driving the results in the full sample.

IPO companies provide information pertaining to internal controls in the risk factors section of the IPO registration statement (Basu, Krishnan, Lee, and Zhang 2013). As such, management-provided risk factor disclosures are a potential additional source of internal control-related information available to financial statement users. To confirm that AU 9550 disclosure is informative, incremental to management-provided internal control risk factor disclosures, I search the risk factors section of the registration statements for ‘internal control’. I include an indicator variable that equals one if the company mentions internal controls, and zero otherwise, in each of my multivariate models. My results with respect to *AU9550* are unchanged.

4.4.1 Material Weakness Additional Analyses

Similar to Section 404 of SOx, management is required to provide disclosures in accordance with Section 302 of SOx after the IPO.¹⁸ I re-estimate Model 1 using a dependent

¹⁸ Whereas Section 302 primarily addresses controls over disclosures, Section 404 more broadly concerns internal controls over financial reporting. Also, Section 302 does not require independent auditor attestation.

variable that equals one if management reports an internal control deficiency in accordance with Section 302 in its first annual report filed after the IPO, and zero otherwise. I do not find AU 9550 disclosure to be significantly associated with the likelihood of management reported internal control deficiencies in accordance with Section 302. Prior research that examines internal controls under both Sections 302 and 404 also finds inconsistent results between the two regulatory regimes (e.g., Beneish et al. 2008). Differing results can largely be attributed to management's tendency to detect fewer, less severe, and less pervasive internal control deficiencies (Bedard and Graham 2011). The inconsistent results speak to AU 9550 disclosure indicating more pervasive internal controls problems, validating its associations with IPO offer pricing and post-IPO earnings and risk.

There are 22 observations with auditor-reported material weaknesses in the sample used to test H1, making the incidence of a material weakness a relatively rare event. The method of computing probabilities of events in logistic analysis is suboptimal in finite samples of rare events data and can lead to errors in the same direction as biases in the coefficients (King and Zeng 2001). To confirm that my results are robust to correcting for this potential bias, I re-estimate Model 1 using rare events logistic regression (King and Zeng 2001) and Firth logistic regression (Firth 1993; Heinze and Schemper 2002). The coefficient for *AU9550* remains positive and statistically significant ($p < 0.05$, one-tailed).

4.4.2 Offer Price Additional Analyses

Bartov et al. (2002) consider three complimentary values for the IPO offer price: the midpoint of the preliminary range for the offer price; the final offer price; and, the price at the end of the first trading day. The tabulated results for Model 2 are based on the final offer price as the dependent variable. When estimated using the midpoint of the preliminary offer price range

and price at the end of the first trading as dependent variables, the results of Model 2 are consistent with those presented in Table 6.

There is a vast literature in accounting and finance pertaining to IPO offer price revisions and IPO underpricing (see Ritter and Welch (2002) for a review). Greater ex ante uncertainty about an IPO's value is positively associated with expected underpricing (Beatty and Ritter 1986; Miller and Reilly 1987; Draho 2001). In the context of my study, AU 9550 disclosure that reflects poor internal controls is likely to increase investor uncertainty as to the quality of financial information, which may then manifest in greater underpricing. Accordingly, I test whether there is a significant association between AU 9550 disclosure and both the change in the IPO offer price from the midpoint of the preliminary offer price range and the first day return. I do not find *AU9550* to be significantly associated with either change measure, indicating that AU 9550 disclosure is not re-priced in the course of the IPO process or immediate IPO aftermarket.¹⁹ This result is consistent with Ritter and Welch's (2002) argument that asymmetric information theories are unlikely to be the primary determinant of underpricing and my finding of a significant association between *AU9550* and the share price at the end of the first trading day.

5. CONCLUSION

This study investigates the informativeness of voluntary AU 9550 disclosure in audit reports included in IPO registration statements. Using a sample of initial public offerings completed on U.S. equity exchanges between 2005 and 2014, I find that voluntary non-standard audit report disclosure provided in accordance with AU Section 9550 is associated with lower IPO offer prices, lower post-IPO earnings, higher post-IPO risk, and a higher likelihood of post-

¹⁹ I extend my analysis of aftermarket returns to various return windows up to the 250 trading days after the IPO and do not find a significant association between *AU9550* and post-IPO returns.

IPO auditor-reported material weaknesses. My results are robust to addressing the endogenous nature of the auditor's decision to add AU 9550 disclosure to the audit report. Overall, my results indicate that voluntary auditor-provided disclosures are incrementally informative as to post-IPO material weaknesses, the IPO offer price, post-IPO earnings, and post-IPO risk.

My research makes three primary contributions to the accounting literature. One, I contribute to the voluntary disclosure literature by documenting that voluntary, internal controls-related auditor disclosures are informative as to financial information quality and company risk in the post-SOX environment. This finding should be of interest to IPO investors and to regulators reforming the current auditor's reporting model. Two, I contribute to the internal controls literature by identifying information that is informative of future auditor-reported material weaknesses. This result should be of interest to legislators that recently passed legislation to further delay the public communication of internal control deficiencies that may be known at the IPO date, for qualifying IPO companies. Finally, I contribute to the audit report literature by studying a previously unexamined type of auditor disclosure.

I conduct my research in the IPO setting where companies are not required, nor are they expected, to have an external auditor opine on the effectiveness of their internal controls. As well, the information environment for IPO companies is not as complex as that for existing public companies. Future research may examine whether AU 9550 disclosure is differentially informative for existing public companies. Subsequent studies may also consider how non-equity investor financial statement users and information intermediaries, such as analysts, appear to use these non-standard audit report disclosures.

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APPENDIX A
Examples of AU 9550 Disclosure

“We were not engaged to perform an audit of the Company’s internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.”
~ Facebook, Inc.

“The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.”
~ Shoretel, Inc.

“The Company is not required to have, nor were we engaged to perform an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.”
~ Petroalgae Inc.

“We were not engaged to perform an audit of the Company’s internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.”
~ Ambit Biosciences Corporation

APPENDIX B

Variable Definitions

Dependent Variables

<i>MW</i>	Equals one if the audit report for the first fiscal year (after the IPO) in which the auditor opines on the effectiveness of ICOFR identifies a material weakness, and zero otherwise (Source: AuditAnalytics)
<i>IPOPRICE</i>	IPO offer price, which is the price per share at which the company originally offers its common equity shares for sale to the public (Source: www.nasdaq.com)
<i>ROA_{post}</i>	Return on assets for the first fiscal year ended after the IPO, calculated as earnings before extraordinary items divided by total assets (Source: Compustat)
<i>SDRET60(250)</i>	Standard deviation of daily raw returns calculated over the 60 (250) trading days after the IPO date (Source: CRSP)
<i>SDRESID60(250)</i>	Standard deviation of the residuals from the market model, calculated using the 60 (250) trading days after the IPO date (Source: CRSP)

Independent Variable

<i>AU9550</i>	Equals one if the audit report included in the IPO registration contains non-standard language in accordance with AU Section 9550 that states the auditor's opinion does not include an opinion on the effectiveness of ICOFR, and zero otherwise
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Control Variables

<i>AU508OTHER</i>	Equals one if the audit report included in the IPO registration contains non-standard language in accordance with AU Section 508 that does not express substantial doubt about the company's ability to continue as a going concern, and zero otherwise
<i>AU508GC</i>	Equals one if the audit report included in the IPO registration contains non-standard language in accordance with AU Section 508 that expresses substantial doubt about the company's ability to continue as a going concern, and zero otherwise

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APPENDIX B (continued)

<i>LOSS</i>	Equals one if the company reports a net loss in the first fiscal year ended in which the company's auditor opines on the effectiveness of ICOFR, and zero otherwise (Source: Compustat)
<i>CRATIO</i>	Current ratio, calculated as total current assets divided total current liabilities as of the first fiscal year end in which the company's auditor opines on the effectiveness of ICOFR (Source: Compustat)
<i>INVENTORY</i>	Total inventory as of the first fiscal year end in which the company's auditor opines on the effectiveness of ICOFR, scaled by total assets for the same period end (Source: Compustat)
<i>DISTRESS</i>	Zmijewski (1984) financial distress measure, calculated as of and for the fiscal year ended in which the auditor opines on the effectiveness of ICOFR (Source: Compustat)
<i>MKTVAL404</i>	Market value of equity as of the fiscal year end in which the auditor opines on the effectiveness of ICOFR, calculated as the fiscal year end price per share times the total common shares outstanding (Source: Compustat)
<i>SQEMPLOYEES</i>	The square of the number of employees as of fiscal year end for the year in which the auditor opines on the effectiveness of ICOFR (Source: Compustat)
<i>SEGMENTS</i>	The number of geographic segments in the fiscal year the auditor first opines on the effectiveness of ICOFR (Source: Compustat)
<i>BIGN404</i>	Equals one if the company's auditor that first opines on the effectiveness of ICOFR is Deloitte, Ernst & Young, KPMG, or PriceWaterhouseCoopers, and zero otherwise (Source: AuditAnalytics)
<i>CHGAUDITOR</i>	Equals one if the company's auditor that first opines on the effectiveness of ICOFR is different from the pre-IPO auditor (Source: AuditAnalytics)
<i>NAFRATIO</i>	The ratio of non-audit fees to total audit fees for the first fiscal year in which the company's auditor opines on the effectiveness of ICOFR (Source: AuditAnalytics)

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APPENDIX B (continued)

<i>AUDITFEES</i>	Total audit fees for the first fiscal year in which the company's auditor opines on the effectiveness of ICOFR (Source: AuditAnalytics)
<i>AS5_404</i>	Equals one if the first audit report that includes an opinion on the effectiveness of ICOFR is for a period ended on or after November 15, 2007, and zero otherwise
<i>BIGN</i>	Equals one if the company's auditor at the time of the IPO is Deloitte, Ernst & Young, KPMG, or PriceWaterhouseCoopers, and zero otherwise (Source: www.nasdaq.com)
<i>UNDERWRITERS</i>	Number of non-lead underwriters involved in the IPO (Source: www.nasdaq.com)
<i>IPO_LENGTH</i>	Number of days between the original registration statement filing and the IPO date (Source: www.nasdaq.com)
<i>SHARES_OFFERED</i>	Number of shares issued in the IPO (Source: www.nasdaq.com)
<i>POSEPS</i>	Equals earnings per share, calculated as income before continuing operations in the last year prior to the IPO (Source: Compustat) divided by post-IPO shares outstanding (Source: www.nasdaq.com), if earnings per share is positive, and zero otherwise
<i>NEGEPS</i>	Equals earnings per share, calculated as income before continuing operations in the last year prior to the IPO (Source: Compustat) divided by post-IPO shares outstanding (Source: www.nasdaq.com), if earnings per share is not positive, and zero otherwise
<i>POSBV</i>	Equals book value of equity per share, calculated as book value of equity in the last year prior to the IPO (Source: Compustat) divided by post-IPO shares outstanding (Source: www.nasdaq.com), if book value per share is positive, and zero otherwise
<i>NEGBV</i>	Equals book value of equity per share, calculated as book value of equity in the last year prior to the IPO (Source: Compustat) divided by post-IPO shares outstanding (Source: www.nasdaq.com), if book value per share is not positive, and zero otherwise
<i>FLOAT</i>	Number of shares issued in the IPO divided by total shares outstanding after the IPO (Source: www.nasdaq.com)

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APPENDIX B (continued)

<i>RDPS</i>	Research and development expense per share, calculated as research and development expense in the last year prior to the IPO (Source: Compustat) divided by post-IPO shares outstanding (Source: www.nasdaq.com)
<i>NASD_ADJ</i>	Inflation-adjusted level of the NASDAQ on the IPO date, calculated as the level of the NASDAQ adjusted for inflation using the level of the Consumer Price Index at the end of the IPO month (Source: CRSP)
<i>TECH</i>	Equals one if the company operates in a technology industry, where technology industries are identified based on four-digit SIC following Loughran and Ritter (2004), and zero otherwise
<i>LITRISK</i>	Equals one if the company operates in a high litigation risk industry, where high litigation risk industries are identified based on four-digit SIC following Venkataraman et al. (2008), and zero otherwise
<i>AS5</i>	Equals one if audit report included in the registration statement is for a period ended on or after November 15, 2007, and zero otherwise
<i>DODDFRANK</i>	Equals one if the company's IPO date is on or after July 21, 2011, and zero otherwise
<i>JOBS</i>	Equals one if the company's IPO date is on or after April 5, 2012, and zero otherwise
<i>ROA_{pre}</i>	Return on assets for the last fiscal year ended prior to the IPO, calculated as earnings before extraordinary items divided by total assets (Source: Compustat)
<i>NWC_{pre}</i>	Net working capital for the last fiscal year ended prior to the IPO, calculated as total current assets excluding cash and cash equivalents less total current liabilities, scaled by total assets (Source: Compustat)
<i>LEVERAGE_{pre}</i>	Financial leverage for the last fiscal year ended prior to the IPO, calculated as total liabilities scaled by total assets (Source: Compustat)
<i>AT_{pre}</i>	Total assets for the last fiscal year ended prior to the IPO

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APPENDIX B (continued)

<i>OFFER_AMT</i>	IPO offer proceeds, calculated as the product of <i>IPOPRICE</i> and <i>SHARES_OFFERED</i> (Source: www.nasdaq.com)
<i>TURNOVER</i>	IPO date share turnover, calculated as the number of shares traded on the IPO date relative to the total number of post-IPO shares outstanding (Source: www.nasdaq.com)
<i>INITIALRET</i>	IPO date return, calculated as the difference between the IPO date closing pricing and the IPO offer price, scaled by the IPO offer price (Sources: CRSP and www.nasdaq.com)
<i>MKTVAL</i>	Market value of equity as of the IPO date, calculated as the IPO offer price times the post-IPO number of shares outstanding (Source: www.nasdaq.com)
<i>AU9550_PREV</i>	Equals one if the audit report in the most recent registration statement filed prior to the signature date of the Company's audit report contains AU 9550 disclosure, and zero otherwise
<i>MILLS</i>	The inverse Mills' ratio calculated from the estimation of Model 5

TABLE 1
Sample Selection

Completed IPOs downloaded from NASDAQ 2005 - 2014	1,667
Less IPOs for which the registration statement audit report is not available in AuditAnalytics	(332)
Less IPOs with pre-IPO SOx Section 302 disclosures	(76)
Less IPOs with an offer price less than \$5 per share	(21)
Less IPOs with pre-IPO assets of \$1,000,000 or less	(182)
Observations eligible for inclusion in the multivariate analysis	<u>1,056</u>
Less IPOs for which SOx Section 404 data is not available in AuditAnalytics	(381)
Less IPOs with Section 404 data available more than 27 months after the IPO	(32)
Less IPO missing data for control variables	(139)
Total sample for the material weakness model	<u><u>504</u></u>
Less IPOs missing an IPO offer price per NASDAQ	(4)
Less IPOs missing data for control variables	(59)
Total sample for the offer price model	<u><u>993</u></u>
Less IPOs missing post-IPO Compustat earnings	(39)
Less IPOs with ROA_{pre} of less than -100 percent	(58)
Less IPOs missing data for control variables	(133)
Total sample for the earnings model	<u><u>826</u></u>
Less IPOs missing data in CRSP	(97)
Total sample for the risk model	<u><u>959</u></u>

Table 1 details my sample selection procedure.

TABLE 2
Non-Standard Audit Report Language By IPO Year

Panel A: *AU9550* by year for the material weakness sample

IPO Year	N	<i>AU9550</i>		<i>MW</i>	<i>OFFER_AMT</i>
		n=1	%	N	Mean (\$mil)
2005	80	38	47.50%	2	202.10
2006	89	55	61.80%	1	193.20
2007	102	66	64.71%	6	211.53
2008	17	11	64.71%	1	251.39
2009	29	16	55.17%	2	309.61
2010	81	48	59.26%	7	158.54
2011	66	40	60.61%	2	226.11
2012	39	24	61.54%	1	273.65
2013	1	0	0.00%	0	600.00
Total	504	298	59.13%	22	212.75

Panel B: *AU9550* by year for the IPO offer price sample

IPO Year	N	<i>AU9550</i>		<i>IPOPRICE</i>	<i>OFFER_AMT</i>
		n=1	%	Mean	Mean (\$mil)
2005	127	53	41.73%	14.95	165.60
2006	143	86	60.14%	15.10	179.99
2007	167	109	65.27%	14.80	202.71
2008	28	17	60.71%	12.83	188.99
2009	42	26	61.90%	14.02	298.67
2010	115	68	59.13%	12.98	150.48
2011	94	57	60.64%	15.46	248.98
2012	103	59	57.28%	15.38	183.11
2013	174	108	62.07%	16.13	226.62
Total	993	583	58.71%	14.92	198.85

(continued on the next page)

TABLE 2 (continued)Panel C: *AU9550* by year for the earnings sample

IPO Year	N	<i>AU9550</i>		<i>ROA_{post}</i>	<i>OFFER_AMT</i>
		n=1	%	Mean	Mean (\$mil)
2005	100	45	45.00%	-2.70%	169.09
2006	115	71	61.74%	0.40%	188.32
2007	143	96	67.13%	-1.33%	188.47
2008	24	15	62.50%	0.36%	203.41
2009	38	23	60.53%	6.78%	260.61
2010	98	57	58.16%	2.49%	159.13
2011	79	48	60.76%	-0.65%	244.98
2012	91	54	59.34%	-1.83%	182.01
2013	137	82	59.85%	-5.77%	257.49
2014	1	1	100.00%	-5.56%	310.00
Total	826	492	59.56%	-0.01%	202.66

Panel D: *AU9550* by year for the risk sample

IPO Year	N	<i>AU9550</i>		<i>SDRET60</i>	<i>OFFER_AMT</i>
		n=1	%	Mean	Mean (\$mil)
2005	126	55	43.65%	0.028	163.54
2006	144	86	59.72%	0.027	188.32
2007	165	109	66.06%	0.036	199.81
2008	29	16	55.17%	0.043	194.81
2009	42	26	61.90%	0.032	298.67
2010	113	67	59.29%	0.032	150.78
2011	94	57	60.64%	0.036	250.88
2012	101	59	58.42%	0.030	182.46
2013	145	88	60.69%	0.031	228.29
Total	959	563	58.71%	0.032	199.20

Table 2 describes my dependent variables and independent variable of interest by IPO year.

TABLE 3
Descriptive Statistics

Panel A: Dependent variables

Variable	N	Mean	Std. Dev.	5%	25%	50%	75%	95%
<i>MW</i>	504	0.044	0.205	0.000	0.000	0.000	0.000	0.000
<i>IPOPRICE</i>	993	14.920	5.872	7.000	11.000	14.000	18.000	24.000
<i>ROA_{post}</i>	826	-0.011	0.180	-0.382	-0.044	0.026	0.082	0.191
<i>SDRET60</i>	959	0.032	0.015	0.012	0.021	0.029	0.040	0.059
<i>SDRET250</i>	873	0.035	0.015	0.015	0.024	0.032	0.043	0.062
<i>SDRESID60</i>	959	0.031	0.014	0.012	0.020	0.029	0.039	0.057
<i>SDRESID250</i>	873	0.033	0.014	0.014	0.022	0.030	0.041	0.059

Panel B: Independent and control variables

Variable	N	Mean	Std. Dev.	5%	25%	50%	75%	95%
<i>AU9550</i>	993	0.587	0.493	0.000	0.000	1.000	1.000	1.000
<i>AU508OTHER</i>	993	0.461	0.499	0.000	0.000	0.000	1.000	1.000
<i>AU508GC</i>	993	0.046	0.210	0.000	0.000	0.000	0.000	0.000
<i>LOSS</i>	504	0.300	0.459	0.000	0.000	0.000	1.000	1.000
<i>CRATIO</i>	504	3.340	2.958	0.777	1.452	2.417	4.056	9.867
<i>INVENTORY</i>	504	0.060	0.098	0.000	0.000	0.010	0.086	0.271
<i>ZSCORE</i>	504	-3.249	1.694	-5.088	-4.534	-3.715	-2.308	-0.408
<i>MKTVAL404</i> (\$mil)	504	1,247.888	1,901.891	99.343	279.083	601.808	1,441.668	4,622.761
<i>SQEMPLOYEES</i>	504	41.810	211.699	0.000	0.065	0.620	6.415	144.000
<i>SEGMENTS</i>	504	2.095	2.140	0.000	1.000	1.000	3.000	7.000
<i>BIGN404</i>	504	0.881	0.324	0.000	1.000	1.000	1.000	1.000
<i>CHGAUDITOR</i>	504	0.038	0.191	0.000	0.000	0.000	0.000	0.000
<i>NAFRATIO</i>	504	0.142	0.136	0.000	0.022	0.113	0.229	0.405
<i>AUDITFEES</i>	504	1.305	1.260	0.341	0.632	0.961	1.480	3.308

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TABLE 3 (continued)

Variable	N	Mean	Std. Dev.	5%	25%	50%	75%	95%
<i>AS5_404</i>	504	0.827	0.378	0.000	1.000	1.000	1.000	1.000
<i>BIGN</i>	993	0.894	0.308	0.000	1.000	1.000	1.000	1.000
<i>UNDERWRITERS</i>	993	3.918	3.215	0.000	2.000	3.000	5.000	11.000
<i>IPO_LENGTH</i>	993	127.769	145.629	16.000	40.000	93.000	147.000	377.000
<i>SHARES_OFFERED</i>	993	12.144	12.631	3.000	5.500	8.200	13.300	35.000
<i>POSEPS</i>	993	0.644	1.329	0.000	0.000	0.144	0.680	3.024
<i>NEGEPS</i>	993	-0.334	0.657	-1.746	-0.390	0.000	0.000	0.000
<i>POSBV</i>	993	3.740	8.420	0.000	0.000	0.484	3.633	18.155
<i>NEGBV</i>	993	-1.242	2.452	-6.119	-1.502	0.000	0.000	0.000
<i>FLOAT</i>	993	0.372	0.269	0.083	0.202	0.279	0.433	1.000
<i>RDPS</i>	993	0.291	0.537	0.000	0.000	0.004	0.418	1.337
<i>NASD_ADJ</i>	993	2,559.404	437.771	2,042.143	2,249.467	2,471.290	2,722.761	3,520.854
<i>LITRISK</i>	993	0.394	0.489	0.000	0.000	0.000	1.000	1.000
<i>TECH</i>	993	0.263	0.440	0.000	0.000	0.000	1.000	1.000
<i>AS5</i>	993	0.532	0.499	0.000	0.000	1.000	1.000	1.000
<i>DODDFRANK</i>	993	0.444	0.497	0.000	0.000	0.000	1.000	1.000
<i>JOBS</i>	993	0.243	0.429	0.000	0.000	0.000	0.000	1.000
<i>ROA_{pre}</i>	826	-0.037	0.260	-0.602	-0.102	0.022	0.096	0.283
<i>NWC_{pre}</i>	826	-0.082	0.267	-0.535	-0.170	-0.044	0.053	0.260
<i>LEVERAGE_{pre}</i>	826	0.656	0.411	0.128	0.395	0.614	0.845	1.335
<i>AT_{pre} (\$mil)</i>	826	716.004	2,185.226	18.590	52.643	130.074	465.000	3,062.223
<i>OFFER_AMT (\$mil)</i>	826	202.663	259.511	33.721	75.000	115.500	226.563	630.000
<i>TURNOVER</i>	959	0.272	0.276	0.032	0.104	0.174	0.303	0.924
<i>INITIALRET</i>	959	0.126	0.232	-0.119	-0.002	0.064	0.214	0.593
<i>MKTVAL (\$mil)</i>	959	842.000	1,470.000	75.000	213.000	382.000	813.000	2,870.000

Table 3 presents descriptive statistics for dependent, independent, and control variables.

TABLE 4
Univariate Statistics for Dependent Variables

Variables	N	<i>AU9550 = 1</i>		<i>AU9550 = 0</i>		Mean Diff.	Test Statistic
		Mean	Median	Mean	Median		
<i>MW</i>	504	0.057	0.000	0.024	0.000	0.033	1.772*
<i>IPOPRICE</i>	993	14.482	14.000	15.541	15.000	-1.059	-2.807***
<i>ROA_{post}</i>	826	-0.016	0.023	-0.004	0.031	-0.011	-0.900
<i>Log(SDRET60)</i>	959	0.032	0.030	0.030	0.028	0.002	2.127**
<i>Log(SDRET250)</i>	873	0.035	0.033	0.032	0.030	0.003	2.814***
<i>Log(SDRESID60)</i>	959	0.031	0.029	0.029	0.027	0.002	2.143**
<i>Log(SDRESID250)</i>	873	0.033	0.031	0.031	0.028	0.002	2.683***

Table 4 presents univariate statistics by *AU9550* for dependent variables.

*** p<0.01, ** p<0.05, and * p<0.10

TABLE 5
Association Between AU 9550 Disclosure and Post-IPO Material Weaknesses

	Expected Sign	<i>MW</i>
<i>AU9550</i>	+(H1)	1.123** (1.973)
<i>AU508OTHER</i>	?	-0.469 (-0.934)
<i>AU508GC</i>	+	1.054 (0.814)
<i>LOSS</i>	+	0.172 (0.312)
<i>CRATIO</i>	-	0.031 (0.349)
<i>INVENTORY</i>	+	-0.394 (-0.152)
<i>ZSCORE</i>	-	-0.059 (-0.372)
<i>Log(MKTVAL404)</i>	-	-0.877*** (-3.134)
<i>SQEMPLOYEES</i>	+	-0.001 (-0.590)
<i>Log(SEGMENTS)</i>	+	0.160 (0.394)
<i>BIGN404</i>	?	-0.172 (-0.220)
<i>CHGAUDITOR</i>	+	1.797* (1.832)
<i>NAFRATIO</i>	-	0.989 (0.533)
<i>Log(AUDIT_FEES)</i>	?	1.704*** (3.611)
<i>LITRISK</i>	+	-0.466 (-0.898)
<i>AS5_404</i>	?	0.601 (0.733)
Constant		-22.929*** (-3.758)
Observations		504
Pseudo R-square		0.160
ROC		0.81

Table 5 presents the results of the estimation of Model 1, used to test H1. *MW* equals one if the audit report identifies a material weakness in the first fiscal year (after the IPO) the auditor opines on the effectiveness of ICOFR, and zero otherwise. *AU9550* equals one if the audit report included in the IPO registration statement contains non-standard content in accordance with AU Section 9550, and zero otherwise. Refer to Appendix B for all other variable definitions.

z statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.10.

TABLE 6
Association Between AU 9550 Disclosure and IPO Pricing

	Expected Sign	<i>IPOPRICE</i>
<i>AU9550</i>	- (H2)	-0.800*** (-4.582)
<i>AU508OTHER</i>	?	-0.506 (-0.985)
<i>AU508GC</i>	-	-2.395** (-2.696)
<i>BIGN</i>	+	-0.238 (-0.372)
<i>Log(UNDERWRITERS)</i>	+	2.436*** (8.421)
<i>Log(IPO_LENGTH)</i>	?	-0.159 (-1.478)
<i>Log(SHARES_OFFERED)</i>	?	0.844 (1.538)
<i>POSEPS</i>	+	0.539** (2.778)
<i>NEGEPS</i>	+	0.004 (0.009)
<i>POSBV</i>	+	0.078** (2.989)
<i>NEGBV</i>	+	-0.124 (-1.640)
<i>FLOAT</i>	-	-0.736 (-1.133)
<i>RDPS</i>	?	-0.328 (-0.535)
<i>NASD_ADJ</i>	+	0.000 (0.303)
<i>LITRISK</i>	-	-0.706 (-1.786)
<i>TECH</i>	?	-0.872*** (-4.040)
<i>AS5</i>	?	-1.939** (-2.721)
<i>DODDFRANK</i>	+	1.454* (1.941)
<i>JOBS</i>	?	0.632 (1.191)
Constant		-0.652 (-0.062)
Observations		993
R-squared		0.248

Table 6 presents the results of the estimation of Model 2, used to test H2. *IPOPRICE* equals the price per share at which the IPO company's shares are initially offered for sale to the public. *AU9550* equals one if the audit report included in the IPO registration statement contains non-standard content in accordance with AU Section 9550, and zero otherwise. Refer to Appendix B for all other variable definitions.

t statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.10. Standard errors are clustered by industry based on the Fama-French twelve industry classification.

TABLE 7
Association Between AU 9550 Disclosure and Post-IPO Earnings

	<u>Expected Sign</u>	<u>ROA_{post}</u>
$AU9550$	- (H3a)	-0.016** (-2.182)
$AU508OTHER$?	0.013 (1.017)
$AU508GC$	-	-0.192** (-2.338)
ROA_{pre}	+	0.461*** (10.361)
NWC_{pre}	+	0.042*** (3.141)
$LEVERAGE_{pre}$	+	0.033*** (3.745)
$Log(AT_{pre})$?	-0.012** (-2.995)
$Log(OFFER_AMT)$	+	0.039** (3.090)
Constant		-0.678** (-2.944)
Observations		826
R-squared		0.550

Table 7 presents the results for the estimation of Model 3, used to test H3a. ROA_{post} equals return on assets for the first fiscal year ended after the IPO. $AU9550$ equals one if the audit report included in the IPO registration statement contains non-standard content in accordance with AU Section 9550, and zero otherwise. Refer to Appendix B for all other variable definitions.

t statistics in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Standard errors are clustered by industry based on the Fama-French twelve industry classification.

TABLE 8
Association Between AU 9550 Disclosure and Post-IPO Risk

	Expected Sign	(1) <i>Log(SDRET60)</i>	(2) <i>Log(SDRET250)</i>	(3) <i>Log(SDRESID60)</i>	(4) <i>Log(SDRESID250)</i>
<i>AU9550</i>	+ (H3b)	0.001 (1.166)	0.002** (2.676)	0.001 (1.102)	0.001** (2.206)
<i>AU508OTHER</i>	?	0.000 (0.215)	0.001 (0.906)	0.000 (0.558)	0.000 (0.690)
<i>AU508GC</i>	+	0.003** (2.579)	0.003* (2.029)	0.003** (2.649)	0.003* (1.909)
<i>BIG</i>	?	0.004** (2.879)	0.003 (1.422)	0.004** (2.678)	0.002 (1.286)
<i>Log(UNDERWRITERS)</i>	-	-0.003* (-2.149)	-0.003 (-1.666)	-0.003* (-2.166)	-0.003 (-1.644)
<i>Log(IPO_LENGTH)</i>	-	-0.001* (-1.883)	-0.001 (-1.669)	-0.001** (-2.521)	-0.001 (-1.788)
<i>FLOAT</i>	-	-0.018*** (-11.791)	-0.014*** (-6.867)	-0.018*** (-12.663)	-0.015*** (-7.945)
<i>TURNOVER</i>	+	0.012*** (4.256)	0.009** (2.753)	0.012*** (4.617)	0.009** (2.869)
<i>INITIALRET</i>	+	0.006*** (3.924)	-0.001 (-0.294)	0.006*** (4.028)	-0.001 (-0.414)
<i>Log(MKTVAL)</i>	-	-0.003*** (-7.456)	-0.003*** (-3.421)	-0.003*** (-9.205)	-0.003*** (-4.486)
<i>LITRISK</i>	+	0.005*** (3.684)	0.005** (2.870)	0.005*** (3.534)	0.004** (2.797)
<i>TECH</i>	+	0.003** (3.026)	0.004*** (3.472)	0.003** (2.744)	0.004*** (3.356)
<i>AS5</i>	?	0.001 (0.611)	-0.002 (-0.978)	0.001 (0.370)	-0.002 (-1.111)
<i>DODDFRANK</i>	?	0.000 (0.105)	0.003* (2.151)	0.000 (0.114)	0.003* (2.174)
<i>JOBS</i>	?	-0.002* (-1.993)	-0.004** (-2.974)	-0.001 (-1.264)	-0.003* (-1.884)
Constant		0.089*** (10.550)	0.095*** (5.215)	0.095*** (12.713)	0.105*** (6.213)
Observations		959	873	959	873
R-squared		0.279	0.209	0.291	0.235

Table 8 presents the results for the estimation of Model 4, used to test H3a. The dependent variables for Columns 1 and 2 are *Log(SDRET60)* and *Log(SDRET250)*, respectively. The dependent variables for Columns 3 and 4 are *Log(SDRESID60)* and *Log(SDRESID250)*, respectively. *SDRET60(250)* equals the standard deviation of daily returns over the 60 (250) trading days after the IPO date. *SDRESID60(250)* equals the standard deviation of the residuals from the market model estimated over the 60 (250) trading days after the IPO date. *AU9550* equals one if the audit report included in the IPO registration statement contains non-standard content in accordance with AU Section 9550, and zero otherwise. Refer to Appendix B for all other variable definitions.

t statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.10. Standard errors are clustered by industry based on the Fama-French twelve industry classification.

TABLE 9
Controlling for Selection Bias

	(1) <i>MW</i>	(2) <i>IPOPRICE</i>	(3) <i>ROA_{post}</i>	(4) <i>Log(SDRET60)</i>	(5) <i>Log(SDRET250)</i>	(6) <i>Log(SDRESID60)</i>	(7) <i>Log(SDRESID250)</i>
<i>AU9550</i>	1.174** (2.083)	-0.786*** (-4.913)	-0.011* (-1.643)	0.002* (1.583)	0.002*** (3.259)	0.002* (1.484)	0.002** (2.682)
<i>MILLS</i>	2.531 (1.384)	0.556 (0.412)	0.053* (2.151)	0.012** (2.286)	0.010** (2.472)	0.011* (2.053)	0.009** (2.348)
Controls	Included	Included	Included	Included	Included	Included	Included
Constant	-22.771*** (-3.678)	-1.341 (-0.124)	-0.691** (-2.951)	0.107*** (6.594)	0.110*** (4.636)	0.112*** (7.363)	0.119*** (5.385)
Observations	489	974	808	940	854	940	854
(Pseudo) R-square	0.173	0.249	0.586	0.288	0.218	0.298	0.244
ROC	0.82	N/A	N/A	N/A	N/A	N/A	N/A

Table 9 presents the results for the estimation of Model 6. *IPOPRICE* equals the price per share at which the IPO company's shares are initially offered for sale to the public. *ROA_{post}* equals return on assets for the first fiscal year ended after the IPO. *SDRET60* equals the standard deviation of daily returns over the 60 trading days after the IPO date. *MW* equals one if the audit report identifies a material weakness in the first fiscal year (after the IPO) the auditor opines on the effectiveness of ICOFR, and zero otherwise. *AU9550* equals one if the audit report included in the IPO registration statement contains non-standard content in accordance with AU Section 9550, and zero otherwise.

z (t) statistics in parentheses for logistic (ordinary least squares) regression. *** p<0.01, ** p<0.05, * p<0.10. Standard errors in Columns (2) through (7) are clustered by industry based on the Fama-French twelve industry classification.