4-2016

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A DISSERTATION

Presented to the Faculty of

The Graduate College of the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Philosophy

Major: Business

(Accountancy)

Under the Supervision of Professor Thomas C. Omer

Lincoln, Nebraska

May, 2016

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University of Nebraska, 2016

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This study examines registrants' incentives to disclose internal control weaknesses (ICWs) voluntarily in IPO registration statements and their post-IPO financial reporting quality. Using a sample of initial public offering (IPO) registrants from 2005-2013, I find that increasing management's disclosure credibility, by hiring a new CEO in the IPO, is an incentive to include ICWs in IPO registration statements. I find that management does build credibility with underwriters evidenced by IPO registrants that disclose ICWs voluntarily are associated with higher IPO offer prices. The results suggest that registrants including voluntary ICW disclosures are more likely to receive an adverse SOX 404 auditor opinion. I find that registrants' voluntary ICW disclosures are informative and are associated with negative cumulative abnormal returns only when an auditor issues an adverse SOX 404 auditor opinion after the disclosure. IPO registrants that voluntarily disclose ICWs and receive unqualified SOX 404 auditor opinions appear to be successful in mitigating negative cumulative abnormal returns. My findings provide evidence that misstatements appear to outpace material weakness disclosures for the sample of IPO registrants. Overall, the findings suggest that managers seek to build credibility through voluntary disclosure of ICWs at the IPO, allowing managers to maximize the rewards at the IPO date (i.e., IPO offer price). However, managers suffer punishment from investors if subsequent events (i.e., SOX 404 material weaknesses) call into question the credibility of the disclosure. The post-IPO financial

reporting quality results are timely and relevant to regulators because the relationship between misstatements and unqualified audit opinions is puzzling. Additionally, the JOBS Act allows IPO registrants to delay SOX 404 compliance for up to five years. Finally, this study's results are important to investors because the purpose of SOX 404 is to provide an advanced warning of financial reporting weaknesses.

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CHAPTER 1. INTRODUCTION

This study examines registrants' incentives to reveal information on lower quality financial reporting before public trading and their post initial public offering (IPO) financial reporting quality. At the time of their IPO, registrants are not required to comply with the internal control reporting requirements of either section 404(a) or 404(b) of the Sarbanes-Oxley Act of 2002 (SOX 404).[1] The delayed compliance for registrants' internal control assessments may increase the likelihood that internal control weaknesses (ICWs) remain when IPOs begin publicly trading. However, some IPO registrants voluntarily disclose information relating to internal controls before their public offering. To date, there has been little research on the incentives IPO registrants have to disclose this information or the effects of the disclosure. I examine whether management includes voluntary ICW disclosures in their IPO registration statements to increase management's disclosure credibility before public trading. I also examine the association between voluntary ICW disclosures and post-IPO financial reporting quality.

Understanding IPO registrants' incentives to disclose ICWs and the effects of the disclosure is important because market participants seeking information on the reliability of IPO's financial statements are likely to use managements' voluntary disclosures because IPO registrants lack a financial reporting history that comes with public trading. I suggest that IPO registrants' disclose ICWs voluntarily to increase management's disclosure credibility. Following Mercer (2004) disclosure credibility is defined as "investors' perceptions of the believability of a particular disclosure." Disclosure

[1] SOX section 404(a) requires management to evaluate internal controls and section 404(b) requires auditors to evaluate internal controls.

credibility reflects not only whether a disclosure is true or false, but also more broadly, whether the disclosure of ICWs fairly represents the registrants' internal control assessment at the IPO date. Key factors to consider when assessing disclosure credibility include management's credibility, situational incentives at the disclosure date, the degree of internal and external assurance, and characteristics of the disclosure itself (Mercer 2004). Because management voluntarily discloses ICWs in the IPO registration statement, external assurance provided by the auditor cannot be examined. Thus, this study focuses on management's voluntary disclosures given the situational incentives for IPO registrants.

Consistent with Mercer (2004), management's disclosure credibility is defined as "management's perceived trustworthiness and competence in financial disclosure." For IPO registrants, management has not engaged in repeated interactions with investors. Instead, management attempts to increase disclosure credibility to maximize rewards and minimize punishments (Leary and Kowalski 1990). Thus, IPO management may voluntarily disclose ICWs because it reveals management's understanding of the risks in the business and whether they are actively managing them (Deumes and Knechel 2008; Barry and Brown 1986). Transparency regarding the financial reporting aspects that need improvement helps IPO management increase their disclosure credibility associated with voluntarily disclosing ICWs in their IPO registration statement.

Ex-ante, registrants have incentives to disclose ICWs voluntarily. The Securities Act of 1933 holds liable all parties participating in the IPO registration for any material misstatements or omissions in the registration statement. Thus, management has an

incentive to build credibility with investors to avoid potential litigation costs (Ashbaugh-Skaife, Collins, and Kinney 2007; Hermanson and Ye 2009; Basu, Krishnan, Lee, and Zhang 2013). Prior research also suggests that bad news disclosures are inherently more credible than good news disclosures (Mercer 2004; Hutton, Miller, and Skinner 2003; Frost 1997; Williams 1996). Thus, voluntary ICW disclosures in an IPO registration statement, arguably bad news, may be seen as more credible and have a positive effect on managements' disclosure credibility.

IPO management also has an incentive to build credibility with underwriters to maximize the IPO offer price. Anecdotal evidence suggests that underwriters expect IPO registrants to complete SOX 404 readiness assessments before pricing the IPO. Thus, if management discloses ICWs in their IPO registration statements, underwriters likely value the lower information asymmetry when assigning offer prices. Concurrent research provides supporting evidence that voluntary disclosures of ICWs and related remediation procedures are associated with less IPO underpricing (Basu et al. 2013). In contrast with Basu et al. (2013) who examine investors' perceptions of registrants' intrinsic value (i.e., underpricing), this study examines the underwriters' assessment of registrants' offer value.

Additionally, voluntary disclosures reduce information asymmetry between IPO management and investors and reduces agency costs (e.g., Diamond and Verrecchia 1991; Kanodia and Lee 1988; Healy and Palepu 2001; Verrecchia 2001; Berger and Hann 2003; Bens and Monahan 2004; Basu et al. 2013). Voluntary disclosures indicate management accepts a greater level of external monitoring which likely improves the

relationship between management and investors. One scenario that can provide insights on the trust built between management and investors is to examine the association between voluntarily disclosed ICWs in IPO registration statements and the likelihood of material weaknesses disclosed in registrants' first SOX 404 auditor opinion and the related market reaction. Prior literature suggests that resource constrained companies (e.g., IPO registrants) are less likely to remediate internal control deficiencies (Bedard, Hoitash, Hoitash, and Westermann 2012; Czerney 2015). Thus, voluntarily disclosed ICWs may persist resulting in material weaknesses disclosed in registrants' first SOX 404 auditor opinions. If management discloses ICWs in their IPO registration statements, investors may reduce punishment when subsequent negative events (i.e., SOX 404 material weaknesses) occur because of the trust gained by managers through voluntary ICW disclosures in the IPO registration statement. By disclosing ICWs the manager informs investors about the business processes that need improvement. However, voluntary earnings forecasts literature suggests investor responses are more pronounced when bad news persists after an early warning (Rees and Sivaramakrishnan 2007). Additionally, prior research finds an association between voluntary disclosure of non-material ICWs and more negative abnormal returns; especially when the voluntary disclosure occurs in the context of previous suspicious events (Kim and Park 2009).

Recent academic research suggests concerns about the reliability of SOX 404 reports for public companies, and whether the effectiveness of SOX 404 is a signal of potential accounting problems (Rice and Weber 2012; Plumlee and Yohn 2010; Li and Wang 2006). Examining a setting of IPOs and future misstatements offers the

opportunity to investigate audit quality in the post-SOX era. A general audit quality framework includes four components: inputs, processes, outputs and opinions, and audit contexts (Francis 2011; Bedard, Johnstone, and Smith 2010; DeFond and Zhang 2014; Knechel, Krishnan, Pevzner, Shefchik, and Velury 2013). I suggest that IPO registrants' voluntarily disclosed ICWs are increased risks that auditors should consider when performing subsequent audits. I examine whether ICWs disclosed at the IPO date lead to misstatements within three years of the IPO date. Thus, I link audit quality to financial reporting quality.

To investigate the incentives for voluntary disclosure and the consequences of the disclosures, I identify IPO registrants that voluntarily disclose ICWs in their registration statements. First, I examine the association between attempts to increase management's disclosure credibility and voluntary ICW disclosures. Prior studies investigating management's voluntary internal control disclosures before the passage of SOX 404 suggest that more credible companies (i.e., *Fortune* 100 companies) are more likely than smaller companies (potentially less credible) to report on internal controls (Raghunandan and Rama 1994; McMullen, Raghunandan, and Rama 1996). Second, I examine the association between voluntary ICW disclosures and IPO offer prices to determine if voluntary disclosure effects IPO offer prices. Third, I examine the association between voluntary ICW disclosures and the likelihood of the identification of SOX 404 material weaknesses in the first post-IPO SOX 404 auditor opinion. Fourth, I examine cumulative abnormal returns during the three-day window surrounding the identification of SOX 404 material weaknesses in the first post-IPO SOX 404 auditor opinion to determine if early

disclosure of ICWs builds credibility with investors. Finally, I examine the association between voluntary ICW disclosures and post-IPO misstatements occurring within three years of the IPO date.

Using a sample of IPO registration statements from 2005 to 2013, I find that IPO registrants with a new CEO, who likely have the greatest incentive to increase their management disclosure credibility, are more likely to disclose ICWs voluntarily. I also find that underwriters assign higher prices to registrants disclosing ICWs suggesting that attempts to increase disclosure credibility are successful in this context. My results suggest that IPO registrants that are voluntarily disclosing ICWs are more likely to report material weaknesses under SOX 404.

Additionally, I find negative abnormal returns for IPO registrants that voluntarily disclosed ICWs and received adverse SOX 404 audit opinions. This result suggests that attempts to establish disclosure credibility fail if remediation of disclosed ICWs does not occur. On the other hand, IPO registrants that voluntarily disclosed ICWs but subsequently remediated the control issue experienced abnormal returns that were not different than those IPO registrants that did not disclose ICWs and received a clean SOX 404 audit opinion. Thus, the IPO registrants that disclose ICWs voluntarily and remediate those before SOX 404 compliance is mandatory appear to be successful in establishing management's disclosure credibility. Finally, the results suggest that the increased risks associated with voluntary disclosure of internal control weaknesses are not adjusted for by auditors when conducting subsequent audits. I also find that registrants whose auditor opinion in the IPO registration statement includes an explanatory paragraph stating that

the auditor did not audit internal controls over financial reporting are more likely to misstate their financial statements in a year in which the internal control over financial reporting opinion is unqualified. This finding suggests that the auditor does appear to have knowledge about internal controls at the IPO date. However, the auditor does not provide advanced warning of continued internal control deficiencies before the post-IPO financial statement misstatements.

This study contributes to five streams of accounting literature. First, this study adds to the research on the effects of SOX by evaluating the market reaction to SOX 404 material weakness disclosures when preceded by voluntary ICW disclosures. Current research focusing on voluntary ICW disclosures uses SOX Section 302 disclosures to investigate whether the information content of the disclosures increases with the severity of the control weakness (Kim and Park 2009; Beneish, Billings, and Hodder 2008; Hammersley, Myers, and Shakespeare 2008). Prior research suggests that the market does not react to SOX 404 disclosures. However, the market does react to SOX 302 disclosures (Kim and Park 2009; Hammersley et al. 2008; Beneish et al. 2008; Franco, Guan, and Lu 2005). Examining voluntary disclosure of ICWs in an IPO setting allows examination of voluntary ICW disclosures that address the integrity of individual registrants' financial reporting processes before SOX 302 and SOX 404 ICW disclosures are required.

Second, this study contributes to the literature on voluntary disclosures. Prior research finds that voluntary management disclosures are useful in the evaluation of IPO companies (Guo, Lev, Zhou 2004; Leone, Rock and Willenborg 2007; Schrand and

Verrecchia 2002; Barth, Landsman, and Taylor 2014). This study extends the disclosure literature by investigating the association between IPO registrants' voluntary disclosures and IPO offer prices. Beyer, Cohen, Lys, and Walther (2010) call for examining a combination of voluntary disclosures and mandatory disclosures. This study provides a setting to examine voluntary ICW disclosures in IPO registration statements and subsequent mandatory disclosures of SOX 404 material weaknesses jointly.

Third, this study contributes to the disclosure literature by providing evidence on whether management's attempts to increase their disclosure credibility by disclosing ICWs results in benefits to the IPO. Given management's incentive to build a reputation with investors, understanding whether voluntary ICW disclosures help registrants maximize rewards and minimize punishments is important.

Fourth, this study contributes to the debate on the relation between ICWs and financial reporting quality. The internal control literature calls for using a range of financial reporting quality proxies and examining the relation between ICWs and financial reporting quality for the smaller company segment in the market (Schneider, Gramling, Hermanson, and Ye 2009). I extend this line of research by using a sample of IPO registrants and misstatements to measure financial reporting quality (DeFond and Zhang 2014).

Fifth, this study contributes to the debate regarding whether SOX 404 is effective in reducing future misstatements. My findings extend the misstatement literature with evidence that voluntary ICW disclosures are not reliable signals of future misstatements. The results suggest the auditing process was not adjusted for increased risk, proxied by

the voluntary disclosure of ICWs or auditors including an explanatory paragraph indicating no opinion on internal control over financial reporting is given. This result complements the prior literature because IPO registrants provide a setting to examine the auditing process and the subsequent output for the entire tenure as a public company.

The remainder of this paper proceeds as follows. Chapter 2 summarizes SOX regulation, voluntary disclosure in the IPO setting, and develops the hypotheses. In Chapter 3, I describe the research design and sample. Chapter 4 provides descriptive statistics and the results of the analyses. In Chapter 5, I discuss additional analyses and results. Chapter 6 provides the conclusion.

CHAPTER 2. BACKGROUND AND HYPOTHESIS DEVELOPMENT

2.1 SOX Regulation

Effective internal control over financial reporting improves management's disclosure credibility to the financial markets (Franzel 2015; PCAOB 2004; COSO 2006). The regulations regarding when and if IPO registrants must comply with SOX 404 have continued to evolve since the SOX 404 legislation enactment.[2] Examining voluntary disclosure of issues related to internal control over financial reporting offers a setting to examine both the incentives to disclose before public trading and the consequence of those disclosures after public trading requires mandatory disclosure. This

[2] November 15, 2004 was the starting date for SOX 404 compliance for companies with market capitalization greater than $75 million. July 15, 2005, was the starting date for SOX 404 compliance for companies with a market capitalization less than $75 million. On September 25, 2010, the SEC permanently exempted companies that are neither accelerated filers nor large accelerated filers from SOX 404. Approximately 4% of IPO registrants filing between January 1, 2005, and December 31, 2013 met the permanent exemption requirements. On April 5, 2012, the SEC enacted the JOBS Act permitting EGC IPO registrants to delay SOX 404 (b) compliance for up to five years.

study examines management's voluntary disclosure of ICWs in IPO registration statements to understand whether these voluntary disclosures benefit IPO registrants.

The academic literature and regulators agree that to moderate investor skepticism about disclosure credibility, internal control disclosures should be meaningful (i.e., companies do not fail to report deficiencies when internal controls are ineffective).[3] However, several commentators have questioned internal control reports' disclosure credibility because of apparent failures to identify ICWs (Whitehouse 2015; Glass Lewis 2007, IMA 2008, SEC 2009). The Securities and Exchange Commission (SEC) states, "a central purpose of the assessment of internal control over financial reporting is to identify material weaknesses that have, by their very definition, more than a remote likelihood of leading to a material misstatement in the financial statements" (SEC 2005; Rice, Weber, Wu 2014). The SOX 404 exemptions for IPO registrants are unusual because material weakness disclosures are more informative for companies that are smaller and likely have higher pre-disclosure information asymmetry (e.g., IPO registrants) and material weakness disclosures are declining (Beneish et al. 2008; Whitehouse 2015).

While SOX 404 is intended to improve public companies' information reliability, compliance costs are often significant (COSO 2006; PCAOB 2004). The Jumpstart Our Business Start-ups (JOBS) Act of 2012 was enacted on April 5, 2012, to ease the transition from a private to a public company (SEC 2012). Title 1 of the JOBS Act allows an exemption from compliance with SOX 404(b) for up to five years for those IPOs

[3] The PCAOB asserts, "For the implementation of Section 404 of the Act to achieve its objectives, the public must have confidence that all material weaknesses that exist as of the company's year-end will be publicly reported" (PCAOB 2004, paragraph 94).

classified as emerging growth companies (EGC). Nearly all IPOs priced after April 5, 2012, utilized the JOBS Act accommodation to defer compliance with SOX 404(b) (Latham and Watkins 2014). Approximately 25 percent of these EGCs voluntarily disclosed a significant deficiency or material weakness in internal controls over financial reporting (Latham and Watkins 2014). None of the EGCs that voluntarily disclosed a significant deficiency or material weakness in internal controls over financial reporting indicated an intention to comply with SOX 404 before the JOBS Act accommodation expired (Latham and Watkins 2013). Market participants seeking insight into the current and future internal control effectiveness of IPO registrants must rely on information other than an explicit opinion from the auditor (Czerney 2015). Thus, it is not apparent why delaying SOX 404 compliance for IPO registrants would not harm their financial reporting quality. This study extends the literature on ICWs by examining IPO registrants' incentives to identify and disclose ICWs voluntarily when entering the financial markets and the voluntary ICW disclosures' effect on post-IPO financial reporting quality.

2.2 Voluntary Disclosure – IPO Setting

SOX 404 requires communicating information to investors about weaknesses in public companies' systems of internal controls that may increase the likelihood of financial statement errors. However, IPO registrants are not required to comply with SOX 404 until the second annual report after the IPO. IPO management may include voluntary disclosures in their IPO registration statements to increase management's disclosure credibility (Guo et al. 2004; Leone et al. 2007). The limited corporate

information environment for IPO registrants inhibits external parties' ability to judge the reliability of management's reported accounting numbers (Aharony, Lin, and Loeb 1993; Friedlan 1994; Fan 2007). Thus, investors may use voluntary disclosure of ICWs to infer management's disclosure credibility.

2.3 Management's Disclosure Credibility

Management's credibility, characteristics of managements' disclosures, and situational incentives at the time of disclosure influence management's disclosure credibility. Social psychology research suggests an important factor in a message's credibility is the credibility of the messenger (Birnbaum and Stegner 1979). Williams (1996) finds that managers can build disclosure reputations that increase the believability of their subsequent disclosures. Experimental research also corroborates that management's credibility is important to disclosure credibility (Hirst, Koonce, and Miller 1999; Hodge, Hopkins, and Pratt 2006). IPO registrants do not have a financial reporting history or repeated interactions with investors at the time of the IPO. Therefore, it is likely crucial at least for some IPO management to establish credibility with financial market participants.

At the most general level, management's motive to establish credibility is the maximization of expected rewards and minimization of expected punishments (Leary and Kowalski 1990; Schlenker 1980). Schlenker (1980) proposed that people maximize their reward-cost ratio dealing with others through self-presentation. People are motivated to assert images with the highest potential value, although other factors also determine people's motivation to portray particular images (Schlenker 1980). I suggest that

voluntary ICW disclosures in an IPO registration statement convey the impression that management is aware of the financial reporting aspects that need improvement. Thus, IPO management can increase the likelihood that they will obtain desired outcomes (e.g., maximize IPO offer price) and avoid undesired outcomes (e.g., Securities Act of 1933 litigation and negative investor reactions to post-IPO negative events) by using voluntary ICW disclosures.

The characteristics of voluntary ICW disclosures also influence management's disclosure credibility. These characteristics include the ICW disclosures' precision, venue, and time horizon, whether supporting information accompanies the disclosure as well as the inherent plausibility of the ICWs disclosed. Prior research provides evidence on an association between disclosure credibility and increased precision (Hirst et al. 1999; Hassell, Jennings, and Lasser 1998; Baginski, Conrad, and Hassell 1993; King, Pownall, and Waymire 1990). Mercer (2004) suggests that companies that operate in uncertain environments gain credibility by conceding these uncertainties and providing less precise forecasts. This acknowledgment of uncertainty suggests that disclosures that conform to the underlying uncertainty are more credible than those that do not. I suggest that disclosing ICW issues in the uncertain IPO environment acknowledges the uncertainty in IPO financial statements and may increase the management's disclosure credibility.

Prior research also provides evidence that management credibility and supporting information matter most when management has incentives to mislead (Mercer 2004). When incentives to mislead are low, disclosures are inherently believable and other

credibility enhancing mechanisms do not provide additional benefits (Mercer 2004). Hutton et al. (2003) find that bad news disclosures are inherently more credible and do not require supporting information to increase credibility. I suggest that voluntary ICW disclosures in IPO registration statements are inherently bad news; therefore, including these disclosures may also increase management's disclosure credibility.

Finally, the inherent plausibility of the information disclosed can influence management disclosure's credibility. Prior literature suggests an association between increased investor skepticism and information that deviates from prior expectations (Koch 2002; Hansen and Noe 1998; Williams 1996; Koehler 1993; Jennings 1987). For example, a disclosure that deviates significantly from investors' expectations will be less credible than one that does not. I suggest that voluntarily disclosing ICWs is more credible because investors are more likely to believe that IPO registrants' financial reporting issues include internal control problems.

Studies that apply persuasion models to financial disclosures suggest that situational incentives influence disclosure credibility (Hutton et al. 2003; Williams 1996; McNichols 1989; Hassell et al. 1988). In the IPO context, IPO management has greater incentives to provide good news rather than bad news disclosures. However, bad news disclosures are expected to be more credible than good news disclosures (Mercer 2004). Voluntarily disclosing ICWs in their registration statement is arguably a bad news disclosure and thus, may improve investors' perception that management is credible and not misleading investors.

Anecdotal evidence suggests that auditors and underwriters expect IPO registrants to complete SOX 404 readiness assessments before pricing the IPO. Upon completion of the SOX 404 readiness assessment, auditors and underwriters are likely to encourage registrants to disclose any identified weaknesses to increase the transparency of the registrants' control environment and convey to the public that they are aware of the financial reporting areas needing improvement. Thus, I expect IPO management is more likely to disclose ICWs voluntarily in IPO registration statements to increase disclosure credibility. I formally state H1, in the alternative form, as follows:

H1: IPO registrants disclose ICWs voluntarily in their IPO registration statements to increase management's disclosure credibility.

2.4 Voluntary ICW Disclosures and IPO Offer Prices

Prior IPO studies have primarily examined the underpricing phenomenon; however, a few studies address the initial pricing of IPOs. Early pricing studies investigated the association between financial information in the registration statement and IPO offer prices (Klein 1996; Purnanandam and Swaminathan 2004; Beatty, Riffe, and Thompson 2000; Loughran and Ritter 2004). Their findings suggest a positive association between IPO offer prices and earnings per share, pro forma book value of equity, the amount of equity retained by previous shareholders, the size of the underwriting firm, auditor reputation, the net proceeds of the offering, the registrants' age, and whether the offering consists of only stock.

Prior accounting research investigating information asymmetry and its related effect on company valuations suggests an association between lower information

asymmetry and higher valuations. Easley and O'Hara (2004) examine the discrepancies between public information and private information and suggest that less informed traders hold fewer assets because they realize they are disadvantaged. Diamond and Verrecchia (1991) claim greater disclosure reduces the adverse price impact of large trades, which, in an IPO registration setting, leads to increased demand and a higher IPO valuation. Therefore, in this study's context, investors who encounter less information asymmetry should expect to pay more for the IPO. Thus, voluntarily disclosing ICWs may increase IPO valuations by reducing information asymmetry in the IPO registration process.

On the other hand, Roosenboom (2007) examines how underwriters value initial public offerings and finds that underwriters consider discounted cash flow and dividend discount models in the valuation process. His findings suggest that underwriters discount IPO offer prices less when the registrants are forecasted to be relatively profitable in the year of going public. IPO discounts are higher with increased risk and valuation uncertainty. Voluntary ICW disclosures may signal increased risk, valuation uncertainty, and affect profitability for more pervasive control problems often categorized as material weaknesses. Thus, voluntarily disclosing ICWs may decrease IPO valuations because the disclosed information signals potential negative consequences associated with cash flows and profitability.

I suggest that IPO registrants have an incentive to disclose ICWs voluntarily to improve disclosure credibility with underwriters. Underwriters certify that the IPO offering price reflects both public and private information about the registrant.

Underwriters risk reputation capital if they price offerings inappropriately, or market participants subsequently conclude that the IPO registrant provided misleading information (Beatty and Ritter 1986; Booth and Smith 1986; Menon and Williams 1991). Because SOX does not require internal control reports for registrants, registrants remaining silent regarding internal controls likely have greater information asymmetry than registrants that voluntarily disclose ICWs; increasing the likelihood that registrants without internal control over financial reporting disclosures could be considered mispriced. However, those ICWs voluntarily disclosed, especially those involving material weaknesses, may reveal bad news associated with future profitability and cash flows likely increasing the registrants' risk profile with the underwriter. Given competing arguments about the association between IPO offer prices and voluntary ICW disclosures, I state H2, in the null form, as follows:

> **H2:** There is no association between registrants' voluntary ICWs disclosures and IPO offer price.

2.5 Voluntary ICW Disclosures and Subsequent SOX 404 Material Weaknesses

Prior research after the passage of SOX 404 suggests public companies that disclose ICWs prior to mandated internal control audits (e.g., in Form 8-K, SOX Section 302 certification) tend to be smaller, younger, financially weaker, more complex, resource constrained, and have more auditor turnovers (Krishnan 2005; Doyle, Ge, McVay 2007; Ashbaugh-Skaife et al. 2007). Several studies present evidence that companies are less likely to remediate ICWs because of resource constraints (Doyle et al. 2007; Ashbaugh-Skaife et al. 2007; Johnstone, Li, and Rupley 2011; Goh 2009; Chan,

Kleinman, and Li 2009; Hammersley, Myers, and Zhou 2012). As IPO registrants transition from going public to being public, the majority can be classified as resource constrained. In a PricewaterhouseCoopers survey, 78% of survey respondents indicated they hired between 1-5 new staff, to increase their SEC reporting capabilities (PricewaterhouseCoopers 2015).[4] The PricewaterhouseCoopers survey results provide evidence that after the IPO, registrants do not have adequate resources to meet SEC reporting demands. Thus, based on prior studies and survey responses it is likely that a positive association between voluntary disclosure of ICWs and post-IPO material weaknesses exists.

Companies with significant financial reporting challenges are fruitful for internal control weakness research (Scheider, Gramling, Hermanson, and Ye 2009). Prior research provides evidence that companies failing to remediate material weaknesses have an increased likelihood experiencing higher audit fees, receiving modified audit opinions and going concern opinions, and more frequent auditor changes (Hammersley et al. 2012). Research examining material weaknesses and earnings quality suggests a positive association between companies that invest in remediating material weaknesses and higher earnings quality. Using the IPO setting is informative about whether voluntarily disclosing deficient internal controls is an early warning of lower post-IPO financial reporting quality because of the lack of resources (e.g., people and/or systems) often required to fix control problems. I formally state H3, in the alternative form, as follows:

[4] PricewaterhouseCoopers LLP collaborated with Oxford Economics on a survey conducted from September to December 2014 for US IPOs since 2012 (PricewaterhouseCoopers 2015).

H3: Voluntary ICW disclosures are associated with a higher likelihood of post-IPO SOX 404 material weaknesses.

2.6 Voluntary ICW Disclosures and Market Reaction to Subsequent SOX 404 Material Weaknesses

Voluntarily disclosing ICWs in IPO registration statements potentially builds trust between management and investors because the voluntary disclosure signals that management is willing to accept a greater level of external monitoring. The majority of research on voluntary disclosure of ICWs establishes an association between SOX 302 material weakness disclosures and a higher cost of equity capital (Cassell, Myers, Zhou 2013; Kim and Park 2009; Beneish et al. 2008; Ashbaugh-Skaife, Collins, and Kinney 2009). These studies focus on companies that have less uncertainty about their financial reporting credibility because the majority of companies were releasing audited financial statements publicly before SOX. This study extends the prior literature by including IPO registrants' voluntary disclosure of ICWs before required compliance with SOX 302 or SOX 404. Examining voluntary disclosure of ICWs in this setting is particularly informative because there is no requirement for internal control opinions for IPO registrants' as of the registration date. (Beatty 1989; Menon and Williams 1991; Willenborg 1999).

IPO management can choose to disclose ICWs in the IPO registration statement to reduce uncertainty. Prior research indicates that investors are uncertain about management's private information and thus they cannot infer from silence that management is withholding negative news (Dye 1985). However, bad news will be

disclosed when the costs of disclosure are low enough or when the uncertainty is high because reducing that uncertainty should benefit the IPO registrant. Managers also incur reputational costs if they fail to disclose negative news promptly (Skinner 1997, 1994). I suggest there is an association between voluntarily disclosing ICWs and management's attempts to increase their disclosure credibility. Thus, IPO management alerts the financial markets of their ICWs upon identification rather than incurring the costs of remaining silent until required compliance.

The post-IPO negative event I examine is the identification of SOX 404 material weaknesses in the first post-IPO SOX 404 auditor opinion. Given that companies are more likely to disclose voluntarily when the disclosure benefits exceed the costs, investors may not react to registrants disclosing SOX 404 material weaknesses in their first post-IPO SOX 404 auditor opinion because investors perceive management as more credible for voluntarily disclosing ICWs in their IPO registration statements. Thus, management reduces future investor punishment by establishing credibility before the bad news was released. I formally state H4, in the null form, as follows:

> **H4:** There is no association between voluntary ICW disclosures and a subsequent market response to negative events.

2.7 Voluntary ICW Disclosures and Subsequent Misstatements

Prior literature suggests that companies with reported ICWs are more likely to have subsequent misstatements (Li and Wang 2006; Nagy 2010; Feng and Li 2010). Li and Wang (2006) find that subsequent misstatements from companies receiving adverse internal control over financial reporting opinions have larger net income effects and

involve more financial statement accounts. Nagy (2010) provides evidence that companies disclosing an internal control material weakness in the previous period are more likely to misstate financial statements in the current period. Feng and Li (2010) suggest SOX 404 enables companies to prevent and detect material misstatements in financial reports in a more timely manner. Additionally, ICWs in specific accounts are positively associated with misstatements in those accounts (Feng and Li 2010).

However, the reliability of SOX 404 reports has been questioned, and the effectiveness of SOX 404 in providing a warning of potential accounting problems remains unclear. For example, the SEC has suggested that the recent decline in reported control weaknesses "could be due to material weaknesses not being identified or reported," as opposed to improvements in the underlying controls (SEC 2009; Whitehouse 2009, 2010, 2015; Rice, Weber, Wu 2014). Practitioners are also concerned about the robustness of enforcement, noting that the SEC eliminated its accounting fraud task force in a recent reorganization (e.g., McKenna 2012).[5]

Recent evidence from academic research highlights similar concerns. Rice and Weber (2012) study a sample of companies with misstatements stemming from underlying ICWs and find that the majority of these companies do not report their weaknesses before the related misstatements. Thus, in many cases, financial statement users are not provided an early warning of the possibility of a material misstatement in the financial statements until after the announcement of such a misstatement.

[5] For example, Jack Ciesielski, owner of research firm R.G. Associates and publisher of The Analyst's Accounting Observer, is quoted in McKenna (2012, 46) arguing, "SEC enforcement of Sarbanes-Oxley has been minimal. Sarbanes-Oxley may have brought us some peace for our time, but without vigilance through long-term enforcement, it can't last."

Additionally, restatements have outpaced reported ICWs in recent years implying that many weaknesses likely go unreported (Plumlee and Yohn 2010).

2.8 Audit Quality Link to Financial Reporting Quality

The unresolved question of why financial statement restatements outpace reported material weaknesses is an intense focus of regulators today. The entire objective of internal control reporting under SOX 404 remains unachieved after a post-enactment decade.[6] As a result, regulators are seeking changes in guidance and standards. For example, the PCAOB recently unveiled a Concept Release on Audit Quality Indicators and it includes financial statement restatements as an indicator (Hanson 2015). A survey of audit partners and investors also confirms that financial statement restatements for errors are a leading indicator of audit quality linked to financial reporting quality (Christensen, Glover, Omer, and Shelley 2015).

Regulators and academics agree that audit quality includes many dimensions such as inputs, processes, outputs and opinions, and post-opinion (Francis 2011; Bedard et al. 2010; DeFond and Zhang 2014; Knechel et al. 2013; Christensen et al. 2015). I suggest that voluntarily disclosed ICWs in an IPO registration statement becomes an audit risk that auditors should consider when performing subsequent audits. Thus, voluntarily disclosed ICWs in an IPO registration statement should be part of subsequent audit processes (e.g., implementation of audit tests by engagement teams) (Francis 2011). This study offers a rare setting for examining the subsequent audit processes for IPO

[6] "The whole point was to provide information in advance of any financial restatement," says Joe Carcello, executive director of the corporate governance center at the University of Tennessee. "If investors never get information in advance, it's not exactly clear what the point of it is." (Whitehouse 2015).

registrants. Using subsequent misstatements for IPO registrants completes the audit quality analysis. This dataset allows one to gain further insight into audit quality because material weaknesses and misstatements are available for the entire tenure of IPO registrants.

This study is relevant to those regulators and academics' concerns that companies are not disclosing internal control material weaknesses. From 2010-2014, the percentage of clean internal control opinions preceding financial statement restatements rose from 74.2% in 2010 to 80.4% in 2014 (Whitehouse 2015).[7] Anecdotal evidence supports the notion that it is difficult for auditors to convince an audit client that a material weakness exists in the absence of a material misstatement (Franzel 2015). Thus, financial reporting quality, measured by financial statement misstatements, appears to relate to the output dimension of audit quality. I formally state H5, in the null form, as follows:

> **H5**: Voluntary ICW disclosures are not associated with the likelihood of post-IPO misstatements.

CHAPTER 3. MEASURES AND MODELS

3.1 Management's Disclosure Credibility Measures

CEOs are often the central strategic decision maker and are assumed to have the greatest influence over discretionary choices (Barker and Mueller 2002). I suggest that new CEOs at the time of the IPO are more likely to include voluntary ICW disclosures to increase their disclosure credibility. On the other hand, prior research indicates long-

[7] "There are a lot of analytics there to suggest that companies are not discussing or acknowledging weaknesses, but instead are relying on the fact that there are no material misstatements, so therefore controls are fine," says Pat Voll, vice president at financial reporting consulting firm RoseRyan. "That's not an appropriate conclusion." (Whitehouse 2015).

tenured CEOs lose touch with their firms' environments and may not make changes to improve the company over time (Miller 1991). Other studies suggest that founder/long-tenured CEOs are more likely concerned with ownership dilution and control issues than financial reporting problems (Jain and Tabak 2008). Thus, long-tenured CEOs may not voluntarily disclose ICWs because they are not concerned about improving financial reporting. On the other hand, new CEOs likely have greater incentives to improve their disclosure credibility to establish their knowledge of company problems with financial reporting.

CEO age is also likely associated with the incentive to establish disclosure credibility (Kim, Bateman, Gilbreath, and Andersson 2009). Older CEOs tend to be more conservative and risk averse (Barker and Mueller 2002; Hambrick and Mason 1984). I suggest that conservatism and risk aversion increase the likelihood that older CEOs will disclose ICWs voluntarily. The Securities Act of 1993 Section 11 provides some of that incentive because it allows investors to initiate lawsuits against registrants, underwriters, or auditors when the stock price is below the offer price because of omissions of material information in the registration statement. Thus, older CEOs are more likely to include voluntary ICW disclosures to reduce personal risks associated with the IPO registration.

3.2 Voluntary ICW Disclosure Incentives

To test H1, I estimate a logistic model to examine the association between voluntary ICW disclosures in IPO registration statements and incentives to increase disclosure. The logit model is as follows:

$$ICW\_REGISTRANT = \beta_0 + \beta_1 NEWCEO + \beta_2 CEOAGE + \beta_3 LN\_MV + \beta_4 LIT + \beta_5 LN\_TA + \beta_6 BIGN + \beta_7 LN\_AGE + \beta_8 VC\_BACKED + \beta_9 PE\_BACKED + \beta_{10} CARVEOUT + \beta_{11} NASDAQ + \beta_{12} GC + \beta_{13} REST\_REGISTRANT + \beta_{14} LN\_BUSSEG + \beta_{15} FOREIGN + \beta_{16} GDWLIP + \beta_{17} WDP + \beta_{18} AUDITOR\_CHG + \varepsilon \quad (1)$$

where ICW_REGISTRANT, the dependent variable in equation (1), is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls (material weakness, significant deficiency, or control deficiency) in its registration statement.

My variables of interest are NEWCEO and CEOAGE. The NEWCEO and CEOAGE are proxies for management credibility. NEWCEO is an indicator variable equal to one (and zero otherwise) if the CEO tenure at the IPO date is zero years, and I expect a positive coefficient for NEWCEO. Prior studies suggest that founder CEOs tend to be more concerned about ownership dilution and control issues than financial reporting issues in IPO transactions which likely reduces their credibility (Jain and Tabek 2008). Thus, companies typically hire new CEOs in IPO transactions (Bruton, Fried, and Hisrich 1997; Bruton, Fried, and Hisrich 2000; Fried and Hisrich 1995; Jain and Tabek 2008). CEOAGE is the CEO's age at the IPO date. Prior research suggests age is correlated with top management credibility (Kim et al. 2009). I expect a positive coefficient because prior research suggests older CEOs are more conservative and risk-averse (Bantel and Jackson 1989; Barker and Mueller 2002; Child 1974; Hambrick and Mason 1984; Joos, Leone, and Zimmerman 2003; Jain and Tabek 2008). Thus, older CEOs are more likely to include voluntary ICW disclosures in IPO registration statements.

The LN_MV and LIT are proxies for litigation risk. LN_MV is the logarithmic transformation of the pre-IPO market value of equity. Venkataraman, Weber, and Willenborg (2008) suggest higher proceeds indicate greater risk exposure, and I expect a positive coefficient. Consistent with Ashbaugh-Skaife et al. (2007), LIT is an indicator variable that equals one (and zero otherwise) if the registrant is in a high litigation risk industry. I define high litigation risk industries following Venkataraman et al. (2008), and I expect a positive coefficient.

The control variables include other registrant characteristics likely associated with the disclosure of ICWs. LN_TA is measured using the logarithmic transformation of total assets. I expect a negative coefficient on because larger companies are more likely to have more financial reporting processes and procedures in place. Larger companies are also more likely to have an adequate number of employees to ensure proper segregation of duties (Czerney 2015; Ashbaugh-Skaife et al. 2007; Doyle et al. 2007; Krishnan 2005). LN_AGE is the logarithmic transformation of the registrant age. A negative coefficient is expected based on the notion that older IPO registrants have stronger internal controls (Doyle et al. 2007). Registrants with pre-tax goodwill impairments (GDWLIP) and other pre-tax write-downs (WDP) are more likely to have internal control weaknesses (Doyle et al. 2007). Thus, I expect positive coefficients on GDWLIP and WDP. To control registrants' complexity, I include the following controls: the logarithmic transformation of the total number of business segments (LN_BUSSEG) and a foreign operations indicator equal to one (and zero otherwise) if the registrant has foreign operations

(FOREIGN). I expect a positive coefficient for both complexity proxies (Goh 2009; Rice and Weber 2012).

The IPO registrants' auditors and other capital providers are likely to have incentives to encourage the registrant to disclose ICWs noted in the IPO registration statement process. Prior research suggests external auditors, especially Big 4 auditors, have strong incentives to avoid potential litigation and reputational loss (Beatty 1989; Beatty and Welch 1996; Hogan 1997; Mayhew and Wilkins 2003; Lou and Vasvari 2013). I include an indicator equal to one (and zero otherwise) if the registrant has a Big N auditor and expect a positive coefficient for BIGN because IPO registrants may be pressured to disclose ICWs identified by their external auditor. I include an indicator equal to one (and zero otherwise) if the registrant has changed auditors since the prior audited financial statement date and expect a positive coefficient for AUDITOR_CHG because IPO registrants with recent auditor changes are more likely to report ICWs (Hermanson, Krishnan, and Ye 2009; Rice and Weber 2012). Venture capitalists are also closely involved in IPO registration statement process and monitor the IPO registrants they have backed (Gompers and Lerner 2004). Thus, I include an indicator equal to one (and zero otherwise) if a registrant has venture capital backing and expect a positive coefficient for VC_BACKED. Private equity firms take an active role in monitoring the IPO registrants that they supply capital (Gompers and Lerner 2000). PE_BACKED is an indicator equal to one (and zero otherwise) if the registrant has private equity backing. I expect a positive coefficient for PE_BACKED. A sponsored spin-off is a company carved out of an established organization and often the former parent will retain partial

ownership in the new registrant (Wallin and Dahlstrand 2006). I suggest the partial ownership interests generate additional monitoring of the IPO registrant. Thus, I include CARVEOUT an indicator equal to one (and zero otherwise) if the registrant is a spinoff from another public company. I expect a positive coefficient.

Willenborg and McKeown (2001) report that many registrants issue shares to the public despite having received going-concern opinions from their auditors. Registrants with going-concern issues are likely subject to higher litigation risk and, therefore, are more likely to disclose ICWs. I include GC an indicator equal to one (and zero otherwise) if the registrant received a going concern audit opinion in the IPO registration statement to control for the differences between registrants with and without going-concern issues. Additionally, I include an indicator variable equal to one (and zero otherwise) if the registrant lists on the NASDAQ exchange, NASDAQ. Another indication of ineffective financial reporting is the occurrence of accounting restatements (Kinney and McDaniel 1989; PCAOB 2007). Thus, I include REST_REGISTRANT an indicator equal to one (and zero otherwise) if the registrant restated financial statements in the IPO registration statement. I winsorize all continuous variables at the 1 percent and 99 percent levels after merging data, calculating lag values, and scaling variables. Appendix B provides a summary of all variables.

3.3 Voluntary ICW Disclosures and IPO Offer Prices

I examine the association between registrants' IPO offer prices and voluntary ICWs disclosures to test H2. To test the relation, I use the following OLS model:

$$LN\_IPO\_PRICE = \beta_0 + \beta_1 ICW + \beta_2 EPS + \beta_3 BV + \beta_4 NET\_PROCEEDS + \beta_5 UW\_SHARE + \beta_6 BIGN + \beta_7 LN\_AGE + \beta_8 LIT + \beta_9 NEWCEO + \beta_{10} CEOAGE + YearFE + \varepsilon \quad (2)$$

where LN_IPO_PRICE, the dependent variable in equation (2), is the logarithmic transformation of the IPO offer price. I choose the IPO offer price because I investigate whether voluntary ICWs disclosures in the IPO registration statement builds credibility with underwriters, who determine the IPO offer price. The variables of interest ICW is one of the four following ICW disclosure measures: ICW_REGISTRANT, MW_ONLY, SD_ONLY, and CD_ONLY. ICW_REGISTRANT is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls (material weakness, significant deficiency, or control deficiency) in its registration statement. MW_ONLY is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed, at least, one material weakness in its registration statement. SD_ONLY is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed, at least, one significant deficiency in its registration statement. CD_ONLY is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed, at least, one control deficiency in its registration statement.

The prior literature suggests positive associations between profitability and the book value of equity provided in IPO registrants' prospectuses and IPO pricing (Klein 1996; Beatty et al. 2000). Thus, I include control variables for registrants' pre-offering earnings per share (EPS) and pre-offering book value of equity (BV). Prior research

suggests a positive association between the proportion of proceeds retained by the issuer and IPO pricing (Beatty et al. 2000); therefore, I include NET_PROCEEDS in the model.

Prior research also suggests a positive association between the proportion of underwriters' market share of IPO proceeds underwritten and IPO pricing (Beatty et al. 2000); therefore, I include the control variable UW_SHARE. Additionally, I control for BIGN and LN_ AGE because prior research suggests that IPO offer prices are associated with information in the prospectus and risk (Klein 1996; Beatty et al. 2000; Menon and Williams 1991; Loughran and Ritter 2004; Beatty and Ritter 1986). Prior research suggests operating in high litigation industries is associated with lower IPO offer prices (Klein 1996); therefore, I expect a negative coefficient for LIT. I do not predict a sign on the coefficient for NEWCEO or CEOAGE because it is not clear whether CEO attributes affect IPO pricing. Year fixed effects are included to control for cross-sectional variation in IPO offer prices over the sample period. I again winsorize all additional continuous variables at the 1 percent, and 99 percent levels after merging data, calculating lag values, and scaling variables. Appendix B provides a summary of all variables.

3.4 Voluntary ICW Disclosures and Subsequent SOX 404 Material Weaknesses

To test H3, I use a Firth logistic model to estimate an increased likelihood of auditor-reported material weaknesses in internal control over financial reporting when IPO registrants voluntarily disclose ICWs in their IPO registration statements (Firth 1993). The logistic model is as follows:

$$ICW\_404 = \beta_0 + \beta_1 ICW\_REGISTRANT + \beta_2 LN\_TA + \beta_3 LACK\_RESOURCES + \beta_4 LN\_BUSSEG + \beta_5 LOSS + \beta_6 CR + \beta_7 INVREC + \beta_8 Z + \beta_9 BIGN + \beta_{10} DIFF\_AUD + \beta_{11} LN\_AGE + \beta_{12} AU9550 + \beta_{13} FOREIGN + \beta_{14} REST\_REGISTRANT + \beta_{14} LN\_FEES + \beta_{16} NAS + YearFE + IndustryFE + \varepsilon \quad (3)$$

where ICW_404, the dependent variable in equation (3), is an indicator variable equal to one (and zero otherwise) if the company's auditor provides an adverse opinion in their first SOX 404 report. The variable of interest is ICW_REGISTRANT, an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls (material weakness, significant deficiency, or control deficiency) in its registration statement.

Prior research suggests that determinants of ICW disclosures and subsequent remediation are registrant size, resource constraints, complexity, and financial distress (Bedard et al. 2012; Hammersley et al. 2012; Johnstone et al. 2011; Goh 2009; Chan et al. 2009; Ashbaugh-Skaife et al. 2007; Doyle et al. 2007; Krishnan 2005). Registrant size is measured using the logarithmic transformation of total assets LN_TA, and a negative coefficient is expected on LN_TA based on prior research (Czerney 2015; Ashbaugh-Skaife et al. 2007; Doyle et al. 2007; Krishnan 2005). I include an indicator variable equal to one (and zero otherwise) if the registrant discloses an ICW in its IPO registration statement related to insufficient personnel with the appropriate level of knowledge, experience, and training, LACK_RESOURCES. I do not predict a sign for the coefficient. An additional measure of resource constraints is the age of the IPO registrant, proxied by LN_AGE. A negative coefficient is expected based on the notion that longer-tenured IPO registrants have stronger internal controls (Doyle et al. 2007). The proxies for registrant complexity are the logarithmic transformation of the total number of business segments LN_BUSSEG, a foreign operations indicator FOREIGN, and an indicator for restated financial statements in the IPO registration statement

REST_REGISTRANT. Following prior research, I expect positive coefficients for all three complexity measures (Johnstone et al. 2011; Goh 2009; Rice and Weber 2012). Financial health is measured using an indicator variable that equals one (and zero otherwise) if the registrant reports a net loss LOSS, the ratio of current assets to current liabilities CR, the ratio of the sum of inventory and receivables to total assets INVREC, and the Altman (2000) financial distress measure Z. Prior research supports expecting a negative coefficient for CR and Z and a positive coefficient for LOSS and INVREC (Czerney 2015; Ashbaugh-Skaife et al. 2007; Doyle et al. 2007).

I include controls for the auditor's ability to identify and issue an adverse internal control over financial reporting opinion. BIGN equals one (and zero otherwise) if the registrant has a Big N auditor. DIFF_AUD is an indicator variable equal to one (and zero otherwise) if the auditor changed since the IPO. Following prior research, I expect a positive coefficient on the auditor change measure (Czerney 2015; Rice and Weber 2012). Auditors are not required to opine on internal controls in IPO registration statements. However, some auditor opinions include an explanatory paragraph stating that the auditor was not engaged to audit internal control over financial reporting, and accordingly does not express an opinion. Therefore, an indicator equal to one (and zero otherwise) if the registrant whose IPO 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 internal control over financial reporting (AU9550) is included as a control. I expect a positive coefficient (Czerney 2015). To control for any potential economic bonding and auditor effort, I

include controls for the ratio of non-audit fees to total fees (NAS) and the logarithmic transformation of the total audit fees LN_FEES. The coefficients on NAS and LNFEES are expected to be negative and positive, respectively (Czerney 2015; Rice and Weber 2012).

The model includes year and industry fixed effects to control for cross-sectional variation in material weaknesses reported over time and across industries. All continuous variables are winsorized at the 1 percent, and 99 percent levels after merging data, calculating lag values, and scaling variables. Appendix B provides a summary of all variables.

3.5 Voluntary ICW Disclosures and Market Reaction to Subsequent SOX 404 Material Weaknesses

To test H4, I examine differential investor response to the release of the first SOX 404 auditor opinion after the IPO. I consider cumulative abnormal returns to earnings announcements using the following OLS model, modified from Kim and Park (2009):

$$CAR(-1,1) = \beta_0 + \beta_1 VICW\_CLEAN + \beta_2 SILENT\_ADVERSE + \beta_3 VICW\_ADVERSE + \beta_4 LN\_TA + \beta_5 BM + \beta_6 ACCEL + \beta_7 LEV + \beta_8 BHR + \beta_9 BIGN + \beta_{10} LN\_GEOSEG + + \beta_{11} FOREIGN + \beta_{12} SALES\_GROWTH + \beta_{13} INVT + \beta_{14} LOSS + \beta_{15} LN\_AGE + \beta_{16} UE + \beta_{17} DIFF\_AUD + YearFE + IndustryFE + \varepsilon \quad (4)$$

where CAR (-1,1), the dependent variable in equation (4), is the market-adjusted cumulative abnormal return (equally weighted index) over days minus 1 and 1, where day 0 is the filing date of the second annual report including the first internal control over financial reporting opinion. The variables of interest are VICW_CLEAN, SILENT_ADVERSE, and VICW_ADVERSE. VICW_CLEAN is an indicator variable

equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls (material weakness, significant deficiency, or control deficiency) in its registration statement and received an unqualified SOX 404 audit opinion in its second annual report. SILENT_ADVERSE is an indicator variable equal to one (and zero otherwise) if the registrant did not voluntarily disclose any deficient internal controls in its registration statement and received an adverse SOX 404 audit opinion in its second annual report. VICW_ADVERSE is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls in its registration statement and received an adverse SOX 404 audit opinion in its second annual report.

Following Kim and Park (2009), I control for the book value of equity to market value of equity ratio, BM. ACCEL is an indicator variable equal to one (and zero otherwise) if the registrant is an accelerated filer (market value of equity > $75 million). Registrants with ICWs tend to be less profitable, smaller, younger, more complex, or growing rapidly (e.g., Ge and McVay 2005; Ashbaugh-Skaife et al. 2007; Doyle et al. 2007). Accordingly, I include an indicator for companies that report a net loss LOSS and the ratio of total debt to assets LEV to control for profitability. I include the logarithmic transformation of total assets LN_TA to control for company size. Additionally, I include the logarithmic transformation of the company's age LN_AGE. I include the logarithmic transformation of the total number of geographic segments LN_GEOSEG and a foreign operations indicator FOREIGN to control for complexity. I include an indicator variable that equals one (and zero otherwise) if the registrants' sales growth is

in the top quintile SALES_GROWTH and the ratio of inventory to total assets INVT to control for growth.

I include a BIGN indicator to control for auditors' ability to identify an adverse internal control over financial reporting opinion. I include the variables BHR and UE to control for information released contemporaneously with SOX 404 auditor opinions. BHR is an indicator variable equal to one (and zero otherwise) if the buy-and-hold market adjusted return over the 120 days before the SOX 404 auditor opinion (i.e., from day -120 to -1) is less than zero. Unexpected earnings UE is calculated as reported IBES earnings minus the median consensus analyst EPS forecast, deflated by stock price. DIFF_AUD is an indicator variable equal to one (and zero otherwise) if the auditor changed since the IPO. I make no prediction for BM, LN_GEOSEG, FOREIGN, SALES_GROWTH, LOSS, LEV, INVT, BHR, UE, and DIFF_AUD. The model includes year and industry fixed effects to control for cross-sectional variation in material weaknesses reported over time and across industries. I winsorize all continuous variables at the 1 percent, and 99 percent levels after merging data, calculating lag values, and scaling variables. Appendix B provides a summary of all variables.

3.6 Voluntary ICW Disclosures and Subsequent Misstatements

To test H5, I estimate a logistic model to examine whether registrants' post-IPO financial reporting quality is associated with voluntarily disclosed ICWs in the IPO registration statement. The logistic model is as follows:

$$DRFQ = \beta_0 + \beta_1 LN\_TA + \beta_2 LN\_BUSSEG + \beta_3 NEG\_ROA + \beta_4 CR + \beta_5 INVREC + \beta_6 Z + \beta_7 BIGN + \beta_8 AUDITOR\_CHG + \beta_9 LIT + \beta_{10} AU9550 + \beta_{11} LN\_AGE + \beta_{12} FOREIGN + \beta_{13} AS5\_404 + \beta_{14} BODSIZE + \beta_{15} DUALCEO + \beta_{16} NAS + \varepsilon \quad (5)$$

where DRFQ, the dependent variable in equation (5), is categorical and has four different groups. The base group is registrants that report no indicators of degrading financial reporting quality (i.e., no ICWs or misstatements). Thus, the base group is registrants that do not voluntarily disclose ICWs in the IPO registration statement, have an unqualified internal control opinion, and report no post-IPO misstatements. The VICW group is registrants that voluntarily disclose ICWs in the IPO registration statement, have an unqualified internal control opinion, and do not have a corresponding misstatement for the year mentioned in the internal control over financial reporting opinion. The VICW_REST group is registrants that voluntarily disclose ICWs in the IPO registration statement, have an unqualified internal control opinion, and have a corresponding misstatement for the year mentioned in the internal control over financial reporting opinion. The REST group is registrants that do not voluntarily disclose ICWs in the IPO registration statement, have an unqualified internal control opinion, and have a corresponding misstatement for the year mentioned in the internal control over financial reporting opinion. Table 1 summarizes the groups. [8]

[INSERT TABLE 1]

Prior literature indicates that registrant characteristics may influence the likelihood of ICW disclosures and subsequent misstatements. LN_TA controls for

[8] IPO registrants that did report internal control deficiencies in accordance with SOX 404 are removed from the sample because those outcome groups have inadequate cell counts (Garson 2012). Fifteen observations reported internal control deficiencies in accordance with SOX 404 only. Nineteen observations reported internal control deficiencies in accordance with SOX 404 and misstated their financial statements. Fifteen observations voluntarily disclosed internal control deficiencies in their IPO registration statements and reported internal control deficiencies in accordance with SOX 404. Eighteen observations voluntarily disclosed internal control deficiencies in their IPO registration statements, reported internal control deficiencies in accordance with SOX 404, and misstated their financial statements.

registrant size and is measured using the logarithmic transformation of total assets. A prediction is not made for the LN_TA coefficient because prior research provides mixed results on the association between company size and misstatements (Cao, Myers, Omer 2012). I include two proxies for registrant complexity; the logarithmic transformation of the total number of business segments (LN_BUSSEG) and a foreign operations indicator (FOREIGN). Evidence from prior studies supports companies' complexity being negatively associated with financial reporting quality (Ge and McVay 2005; Doyle et al. 2007; Ashbaugh-Skaife et al. 2008; Goh 2009; Johnstone et al. 2011; Rice and Weber 2012). Following prior studies, I expect positive coefficients for both complexity measures. I include four financial health proxies. The proxies are an indicator variable that equals one (and zero otherwise) if the registrant reports a negative return on assets NEG_ROA, the ratio of current assets to current liabilities CR, the ratio of the sum of inventory and receivables to total assets INVREC, and the Altman (2000) financial distress measure Z. Prior research predicts negative coefficients for CR and Z and positive coefficients for NEG_ROA and INVREC (Czerney 2015; Cao et al. 2012; Ashbaugh-Skaife et al. 2007; Doyle et al. 2007; Summers and Sweeney 1998). Prior literature finds a negative association between misstatements and company age, suggesting younger companies have less mature financial reporting structures (Doyle et al. 2007). Thus, the logarithmic transformation of a company's age, LN_AGE, is included, and a negative coefficient is expected.

I include indicators for BIGN, AUDITOR_CHG, AU9550, and AS5_404 to control for the auditors' characteristics. I expect a negative coefficient for BIGN and a

positive coefficient for AUDITOR_CHG (Rice and Weber 2012). AU9550 controls for an IPO registration statement's auditor opinion with non-standard language in accordance with AU Section 9550. In this context, the auditor's opinion does not include an opinion on the effectiveness of internal control over financial reporting. AS5_404 controls for having an auditor opinion issued after the passage of Auditing Standard No. 5 (AS 5). I do not predict signs for the coefficients AU9550 or AS5_404. I also include the ratio of non-audit fees to total fees (NAS) to control for the association between financial reporting quality and non-audit fees. The extant evidence is largely mixed, thus, I do not predict a sign for the coefficient on NAS (Cao et al. 2012; Kinney, Palmrose, and Scholz 2004; Ashbaugh, LaFond, and Maydew 2003; Chung and Kallapur 2003; Frankel, Johnson, and Nelson 2002).

I control for total number of members on the board of directors (BODSIZE) and for CEOs who are the board chair (DUALCEO) because these two basic board characteristics are commonly used to proxy for the strength of corporate governance. Consistent with prior literature, I expect positive coefficients for BODSIZE and DUALCEO (Cao et al. 2012; Yermack 1996; Dechow, Sloan, and Sweeney 1996). Consistent with Ashbaugh-Skaife et al. (2007), I control for heightened litigation risk using an indicator variable that equals one (and zero otherwise) if the registrant is in a high litigation risk industry LIT. I define high litigation risk industries consistent with Venkataraman et al. (2008) and I predict a sign on the coefficient. I winsorize all continuous variables at the 1 percent, and 99 percent levels after merging data,

calculating lag values, and scaling variables. Appendix B provides a summary of all variables.

3.7 Sample

I obtain a sample of IPO registrants from January 1, 2005, to December 31, 2013, and use data from the Audit Analytics, BoardEx, and Compustat databases and supplemental manual screening of the IPO registration statements. The sample period begins on January 1, 2005, because all public companies, regardless of market capitalization, were required to comply with SOX 404 during 2005. The sample period ends on December 31, 2013, because this is the latest data available. The sample includes registrants that originally file their registration statement with the SEC on form S-1 or F-1. To identify registrants that voluntarily disclosed ICWs and included restated financial statements within their IPO registration statements, I manually screen the risk factors, management's discussion and analysis, and audited financial statements sections of IPO registration statements. Refer to Appendix A for examples of voluntary ICW disclosures from IPO companies in this sample. Consistent with prior IPO research, unit offerings, closed-end funds, real estate investment trusts, and American depository receipts are excluded. I begin with an available sample of 1,215 IPO registrants for my multivariate analyses. The sample I use to examine H1 is 608 registrants because 188 registrants do not have the necessary Compustat data and 419 registrants do not have CEO data in BoardEx. I use a sample of 590 registrants to examine H2; I eliminate 18 registrants from the sample used to test H1 because they do not have the data necessary in Compustat to test H2. The sample I use to examine H3 is 785 registrants because 111

registrants do not have the necessary Compustat data and 73 registrants lack the necessary Audit Analytics data. The sample size used to test H4 is 517 registrants because 113 registrants lack the necessary Audit Analytics data, 159 registrants lack the necessary data to compute cumulative abnormal returns, 242 registrants lack the necessary IBES data, seven registrants lack the necessary Compustat data, and four registrants disclose different ICWs in their IPO and adverse SOX 404 auditor opinions. I delete the registrants that disclose different ICWs in their IPO and adverse SOX 404 auditor opinions because I want to determine if the market reactions are related to persistent ICWs. I use a sample of 635 registrants to test H5 because 181 registrants lack the necessary Compustat data, 324 registrants had subsequent misstatements more than three years after the IPO, 67 registrants had SOX 404 material weaknesses related to the same year of the misstatement, and 100 registrants lack the necessary BoardEx data. I delete misstatements if they affect periods that begin more than three years after the IPO because the Securities Act of 1933 litigation window expires three years after the IPO date.

[INSERT TABLE 2]

3.8 Entropy Balancing Adjustment

I use entropy balancing to create a balanced sample of IPO registrants that voluntarily disclosed ICWs and those that did not. Unlike matching based on propensity scores, entropy balancing directly calculates weights to adjust for known sample distributions, integrating covariate balance directly into the weights assigned to control observations (Hainmueller 2012; Hainmueller and Xu 2013). Entropy balancing employs

a maximum-entropy reweighting scheme to create a set of weights such that the treatment and reweighted control samples satisfy constraints that balance the three moments of the distribution of treatment firms with control firms on a large set of covariates. The improved balance in covariate distributions and maximum retention of sample size, in particular, treatment firms are the method's principal advantages. Balance is assessed individually or jointly on mean, variance, and skewness of selected covariates and the procedure can be set to iterate repeatedly until the variance of the weights cannot be reduced further without undermining the balance constraints.

Application of the entropy balance weights to the control sample results in more weight being given to under-represented groups and less weight to over-represented groups, adjusting for unequal probability of sample selection and creates a "pseudo-population" with characteristics in line with the treatment sample. I use an entropy-balanced sample adjusted for differences in the first moment (mean) of the covariate distributions to examine H2 because the model does not converge when balancing on the second and third moments. I use an entropy-balanced sample adjusted for differences in the first (mean) and second (variance) moments of the covariate distributions to examine H4 because the model does not converge when balancing on the third moment.

CHAPTER 4. RESULTS

4.1 Descriptive Statistics

Table 3 presents descriptive statistics for the sample population. Table 3 Panel A identifies the distribution of the sample by industry (17 Fama-French industry classification) (Fama and French 1997) to test the five hypotheses. The largest industry

group is Other in the samples to test each of the five hypotheses. Table 3 Panel B presents the distribution of the sample by year for the voluntary disclosure of ICWs incentives sample. Table 2 Panel C presents the distribution of the sample by year for the IPO offer price sample. Table 3 Panel D presents the distribution of the sample by year for the SOX 404 material weaknesses sample. Table 3 Panel E presents the sample distribution by year for the SOX 404 material weaknesses market reaction sample. Table 3 Panel F presents the distribution of the sample by year for the subsequent misstatement sample. Table 3 Panels B-F indicate lower IPO activity in 2008 and 2009 coinciding with the financial crisis.

[INSERT TABLE 3]

Table 4 presents descriptive statistics for the dependent and independent variables. In the pooled voluntary disclosure of ICWs incentives sample (Panel A), 27 percent of the registrants voluntarily disclosed an ICW in their IPO registration statements ICW_REGISTRANT. The percentage of observations that hired a new CEO at the IPO date is 60 percent, and the mean (median) CEO age at the IPO date is 50.06 (50.00) years, respectively. Approximately 43 percent of IPO registrants operate in high litigation industries LIT, and the mean (median) of LN_MV is 19.87 (19.79), respectively. On average, 13 percent of IPO registrants include restated financial statements in their registration statement REST_REGISTRANT. The mean (median) of LN_AGE, at the IPO date, is 2.24 (2.20) years, respectively. The majority of IPO registrants engage BIGN auditors, and the mean (median) of LN_TA is 5.20 (4.99), respectively.

In the entropy balanced IPO offer price sample (Panel B), the mean (median) IPO price is $15.03 ($14.00), respectively. Approximately 26 percent of the registrants voluntarily disclosed an ICW in their IPO registration statements ICW_REGISTRANT. The mean (median) portion of NET_PROCEEDS retained by the registrant is 0.79 (0.93), respectively. The mean (median) underwriter share of IPO proceeds underwritten, UW_SHARE, is 0.08 (0.05), respectively.

In the pooled SOX 404 material weaknesses sample (Panel C), 32 percent of the registrants voluntarily disclosed an ICW in their IPO registration statements ICW_REGISTRANT. The percentage of observations that recorded a LOSS is 37 percent and the mean (median) registrant age at the first SOX 404 auditor opinion date is 2.06 (2.08) years, respectively. Approximately 46 percent of IPO registrants operate in high litigation industries LIT. On average, 55 percent of IPO registrants have foreign operations FOREIGN. The mean (median) of LN_TA, at the first SOX 404 auditor opinion date, is 5.91 (5.79), respectively. The majority of IPO registrants engage BIGN auditors, and the approximately 63 percent of auditor opinions include an explanatory paragraph stating that the auditor was not engaged to audit internal control over financial reporting, and accordingly does not express an opinion, AU9550.

In the entropy balanced cumulative abnormal returns sample (Panel D), 27 percent of the registrants voluntarily disclosed ICWs in their IPO registration statements and had unqualified SOX 404 opinions VICW_CLEAN. Approximately two percent of registrants voluntarily disclosed ICWs in their IPO registration statements and had adverse SOX 404 opinions VICW_ADVERSE. The percentage of IPO registrants that

are accelerated filers, ACCEL, is 92 percent. The mean (median) number of geographic segments, LN_GEOSEG, is 1.15 (1.10), respectively.

In the pooled subsequent misstatements sample (Panel E), 24 percent of the registrants comprise the voluntarily disclosed ICWs in their IPO registration statements group, VICW. Approximately ten percent of the registrants are in the VICW_REST group that voluntarily disclosed ICWs in IPO registration statements and misstated post-IPO financial statements within three years of the IPO date. The REST group that misstated post-IPO financial statements within three years of the IPO date is approximately 21 percent of the sample. Approximately 43 percent of IPO registrants operate in high litigation industries LIT, and the mean (median) of LN_TA is 6.26 (6.14), respectively. On average, 62 percent of the auditor opinions include an explanatory paragraph stating that the auditor was not engaged to audit internal control over financial reporting, and accordingly does not express an opinion, AU9550. The majority of IPO registrants engage BIGN auditors, and 55 percent of the SOX 404 auditor opinions occurred after the passage of AS 5, AS5_404.

[INSERT TABLE 4]

4.2 Voluntary ICW Disclosure Incentives

I estimate equation (1) to examine the association between management's incentive to increase disclosure credibility and voluntary disclosure of ICWs in IPO registration statements. Table 5 presents the coefficient estimates and z-statistics from estimating equation (1) using logistic regression. NEWCEO and CEOAGE are included in columns (1) and (2) respectively. Column (3) includes both management credibility

proxies simultaneously. The area under the ROC curves in columns (1), (2), and (3) suggests the models are a reasonable fit (0.693, 0.682, and 0.694, respectively), following Lemeshow and Hosmer (1982). Additionally, the Pearson goodness-of-fit statistic fails to reject the null hypothesis that the models are a good fit (0.191, 0.231, and 0.182, respectively). All p-values in the table are one-tailed.[9]

[INSERT TABLE 5]

In column (1) the coefficient for NEWCEO (z-stat, 2.567) is positive and significant suggesting that new CEOs are more likely to disclose ICWs voluntarily in their IPO registration statement. The positive coefficient for LIT (z-stat, 1.753) indicates a positive association between litigation risk and voluntary disclosure of ICWs in IPO registration statements. The negative coefficient for LN_TA (z-stat, -2.419) suggests that larger registrants are less likely to disclose ICWs voluntarily in their IPO registration statements. The positive coefficient for REST_REGISTRANT (z-stat, 5.688), consistent with prior research, (Ashbaugh-Skaife et al. 2007; Kinney and McDaniel 1989), indicates a positive association between IPO registration statements including restated financial statements and voluntarily disclosing ICWs. The positive coefficient for FOREIGN (z-stat, 3.170) suggests that registrants with foreign operations are more likely to voluntarily disclosing ICWs in their IPO registration statements.

In column (2), the coefficient on CEOAGE is not significant suggesting no association between CEOs' conservatism and risk aversion and voluntarily disclosing ICWs. The positive coefficients for LIT (z-stat, 1.675), REST_REGISTRANT (z-stat,

[9] No evidence of degrading collinearity is noted when examining multi-collinearity for all model variables using the Belsley, Kuh, and Welsh (1980) approach.

5.361), and FOREIGN (z-stat, 3.267) continue to suggest a positive association between registrants' litigation risk, prior restated financial statements, and foreign operations and voluntary disclosure of ICWs. The negative coefficient for LN_TA (z-stat, -2.288) continues to suggest that larger registrants are less likely to disclose ICWs voluntarily in their IPO registration statements.

In column (3), the NEWCEO (z-stat, 2.562) coefficient continues to be positive and significant while CEOAGE continues to be insignificant. The coefficients on LIT, LN_TA, REST_REGISTRANT, and FOREIGN are consistent with results in columns (1) and (2). In combination, Table 5 suggests that new CEOs who are likely to have greater incentives to establish disclosure credibility are also more likely to disclose ICWs voluntarily in their IPO registration statements. Litigation risk, prior restatements, and foreign operations are also positively associated with disclosing ICWs in IPO registration statements. Larger registrants are less likely to disclose ICWs in IPO registration statements.

4.3 Voluntary ICW Disclosures and IPO Offer Prices

I estimate equation (2) to examine the association between IPO offer prices and voluntary ICW disclosures. Table 6 presents the coefficient estimates and t-statistics of estimating equation (2) using OLS. I include ICW_REGISTRANT in column (1) and MW_ONLY, SD_ONLY, and CD_ONLY in column (2). All p-values in the table are two-tailed. I do not report the coefficients for the year fixed effects for brevity.[10]

[INSERT TABLE 6]

[10] No evidence of degrading collinearity is noted when examining multi-collinearity for all model variables using the Belsley et al. (1980) approach.

In column (1), the coefficient on ICW_REGISTRANT (t-stat, 2.075) is positive and significant suggesting that underwriters assign a higher IPO offer price to registrants that disclose ICWs. This result suggests that credibility efforts may be successful. Consistent with prior literature the coefficient for EPS (t-stat, 5.251) is positive and significant indicating a positive association between profitable registrants and higher IPO offer prices. The positive and significant coefficient for BV (t-stat, 2.437) suggests a positive association between IPO registrants with a higher book value of equity and higher IPO offer prices. The coefficient for UW_SHARE (t-stat, 4.064) is positive and significant suggesting a positive association between registrants that hire underwriting firms that underwrite a larger proportion of IPOs and higher IPO offer prices. The coefficient for LIT (t-stat, -5.317) is negative and significant suggesting a negative association between IPO registrants operating in high litigation industries and lower IPO offer prices. The coefficient for CEOAGE (t-stat, -3.961) is negative and significant suggesting a negative association between IPO registrants led by older CEOs and lower IPO offer prices. This finding is consistent with prior research suggesting that investor perceptions influence registrants' valuations (Blankespoor, Hendricks, and Miller 2015). Blankespoor et al. (2015) find a negative association between CEO age and investor perceptions of IPO registrants.

I next examine the relation between the types of ICW disclosed in the IPO registration statement and IPO offer prices in column (2). I find a positive and significant coefficient on MW_ONLY (t-stat, 2.788) suggesting a positive association between IPO registrants that disclose material weaknesses and higher IPO offer prices. The

coefficients for EPS, BV, UW_SHARE, LIT, and CEOAGE are consistent with results in Column (1). In combination, Table 6 suggests a positive association between voluntary ICW disclosures and higher IPO offer prices. These results suggest that underwriters are comfortable with efforts to disclose internal control problems early.

4.4 Voluntary ICW Disclosures and Subsequent SOX 404 Material Weaknesses

Table 7 presents the coefficient estimates and z-statistics for the Firth logistic estimation of equation (3) using ICW_404 as the dependent variable. In column (1) ICW_404 is an indicator variable for those companies whose auditors provide an adverse opinion in their first SOX 404 report. All p-values in the table are one-tailed. I do not report the coefficients for the year and industry fixed effects for brevity.[11]

[INSERT TABLE 7]

In column (1), the coefficient for ICW_REGISTRANT (z-stat, 2.509) is positive and significant suggesting registrants that voluntarily disclose internal control deficiencies in their IPO registration statements have a higher likelihood of post-IPO material weaknesses. As expected, the model includes a positive and significant coefficient on LOSS (z-stat, 2.246) suggesting that unprofitable companies have a higher likelihood of post-IPO material weaknesses. Consistent with prior literature, the coefficient on FOREIGN (z-stat, 1.450) is positive and significant suggesting that companies that are more complex have a higher likelihood of post-IPO material weaknesses. In combination, the Table 7 results provide evidence that registrants that

[11] No evidence of degrading collinearity is noted when examining multi-collinearity for all model variables using the Belsley et al. (1980) approach.

voluntarily disclose internal control deficiencies in their registration statements have a higher likelihood of reporting post-IPO SOX 404 material weaknesses.

4.5 Voluntary ICW Disclosures and Market Reaction to Subsequent SOX 404 Material Weakness

I estimate equation (4) to examine the association between cumulative abnormal returns at the SOX 404 audit report filing date and voluntary ICW disclosures in registration statements. Table 8 presents the coefficient estimates and t-statistics from estimating equation (4) using OLS. I do not report the coefficients for the year and industry fixed effects for brevity.[12] All p-values in the table are two-tailed.

[INSERT TABLE 8]

In column (1), the negative coefficient for VICW_ADVERSE (t-stat -1.852) suggests that investors respond negatively when registrants voluntarily disclose ICWs in their IPO registration statement and receive an adverse SOX 404 auditor opinion in the first year of SOX 404 compliance. This finding suggests investors are surprised by an adverse SOX 404 auditor opinion when ICWs are disclosed at the IPO date because investors expect the ICWs to be remediated once disclosed. Prior research suggests that the market does not react to SOX 404 disclosures (Beneish et al. 2008). However, prior studies do find that the market reacts to SOX Section 302 voluntary disclosures of ICWs (Kim and Park 2009; Franco et al. 2005; Hammersley et al. 2008). Specifically, Hammersley et al. (2008) suggest the severity of ICWs, management's conclusion regarding the effectiveness of the controls, the audibility of the ICWs, and the vagueness

[12] No evidence of degrading collinearity is noted when examining multi-collinearity for all model variables using the Belsley et al. (1980) approach.

of the voluntary disclosure is informative in explaining market reactions to ICW disclosures. The sample registrants that received an adverse SOX 404 auditor opinion disclosed the same ICWs in both the IPO registration statement and their annual report associated with the adverse SOX 404 auditor opinion. Thus, the negative reaction associated with VICW_ADVERSE suggests investors perceive the voluntarily disclosed ICWs at the IPO as severe or pervasive because remediation did not occur before the SOX 404 auditor assessment. For those registrants that received unqualified SOX 404 auditor opinions, the cumulative abnormal returns did not differ from IPO registrants that did not disclose ICWs in their registration statements and received an unqualified SOX 404 audit report. This result suggests that subsequent remediation of the disclosed ICW likely improves managements' disclosure credibility. The positive coefficient for ACCEL (t-stat, 1.730) suggests that investors respond positively to those registrants that are accelerated filers. In combination, Table 8 results suggest management's attempts to increase disclosure credibility is unsuccessful when disclosures do not also result in remediation.

4.6 Voluntary ICW Disclosures and Subsequent Misstatements

Table 9 presents the coefficient estimates, z-statistics, and odds ratios from the logistic regression comparing the determinants of IPO registrants that have indicators of degrading financial reporting quality with IPO registrants with no indicators of degrading financial statement quality. The base group is registrants that do not voluntarily disclose ICWs in the IPO registration statement and report no post-IPO internal control deficiencies or misstatements. The remaining three groups are registrants that voluntarily

disclose ICWs in IPO registration statements (VICW), disclose ICWs in IPO registration statements and misstate post-IPO financial statements within three years of the IPO date (VICW_REST), and misstate post-IPO financial statements within three years of the IPO date (REST). Column (1) presents the coefficient estimates, z-statistics, and odds ratios for VICW registrants. Column (2) presents the coefficient estimates, z-statistics, and odds ratios for VICW_REST registrants. Column (3) presents the coefficient estimates, z-statistics, and odds ratios for REST registrants. All p-values in the table are two-tailed.[13]

[INSERT TABLE 9]

In column (1) the coefficient for LN_TA (z-stat, 2.471) is positive and significant suggesting larger registrants compared to the base group are 28.7 percent more likely to voluntarily disclose ICWs in their IPO registration statements. [14] Also, the positive coefficient for INVREC (z-stat, 3.127) suggests that registrants with a higher ratio of accounts receivables and inventory to total assets compared to the base group are 789.8 percent more likely to disclose ICWs voluntarily in their IPO registration statements. The negative coefficient for AU9550 (z-stat, -2.308) suggests that compared to the base group registrants whose IPO audit report included in the IPO registration contains non-standard language in accordance with AU Section 9550 are 38.2 percent less likely to voluntarily disclose ICWs in their IPO registration statements. The positive coefficient for FOREIGN (z-stat, 2.757) suggests that registrants that are more complex compared to

[13] No evidence of degrading collinearity is noted when examining multi-collinearity for all model variables using the Belsley et al. (1980) approach.

[14] The odds ratio is used to determine the likelihood of an outcome with respect to the base group. To determine the likelihood for determinants that are positively related to the outcome, subtract 1 from the odds ratio. For determinants that are negatively related to the outcome, subtract the odds ratio from 1 to determine the likelihood. For example, LN_TA is 28.7 percent more likely to be a VICW outcome (1.287 - 1) = 0.287.

the base group are 93.9 percent more likely to disclose ICWs voluntarily in their IPO registration statements. The positive coefficient for AS5_404 (z-stat, 4.114) suggests that compared to the base group registrants completing their IPO after the passage of AS 5 are 171.5 percent more likely to voluntarily disclose ICWs in their IPO registration statements. The negative coefficient for BODSIZE (z-stat, -3.558) suggests that registrants with larger boards of directors compared to the base group are 23.7 percent less likely to disclose ICWs voluntarily in their IPO registration statements. The negative coefficient for NAS (z-stat, -2.465) suggests that compared to the base group registrants with a greater proportion of non-audit service fees to total fees are 84.7 percent less likely to disclose ICWs voluntarily in their IPO registration statements.

In column (2) the negative coefficient for INVREC (z-stat, -2.286) suggests that registrants with a higher ratio of accounts receivables and inventory to total assets compared to the base group are 91.0 percent less likely to voluntarily disclose ICWs in their IPO registration statements and misstate their financial statements within three years after the IPO. Approximately one percent of registrants stated that accounts receivable and/or inventory were both an ICW in the IPO registration statement and one of multiple accounting rule application failures leading to the misstatement. The positive coefficient for Z (z-stat, 1.705) is not related to the likelihood of disclosing ICWs in their IPO registration statements and misstating their financial statements within three years after the IPO. Also, the negative coefficient on BIGN (z-stat, -2.400) suggests that IPO registrants that hire Big N auditors compared to the base group are 60.0 percent less likely to voluntarily disclose ICWs in their IPO registration statements and misstate their

financial statements within three years after the IPO. The positive coefficient for FOREIGN (z-stat, 1.957) suggests that registrants that are more complex compared to the base group are 191.1 percent more likely to voluntarily disclose ICWs in their IPO registration statements and misstate their financial statements within three years after the IPO. The negative coefficient for AS5_404 (z-stat, -3.048) suggests that compared to the base group those registrants completing their IPO after the passage of AS 5 are 10.1 percent less likely to voluntarily disclose ICWs in their IPO registration statements and misstate their financial statements within three years after the IPO.

In column (3) the negative coefficient for INVREC (z-stat, -1.842) suggests that compared to the base group registrants with a higher ratio of accounts receivables and inventory to total assets are 75.6 percent less likely to misstate their financial statements within three years after the IPO. In both columns 2 and 3 the sign on the coefficient for INVREC is inconsistent with prior literature that suggests INVREC is a significant predictor of misstatements. In a manual screening of the misstatement registrants, one percent of the registrants' misstatements relate exclusively to inventory. Approximately five percent of registrants stated that accounts receivable and/or inventory were one of multiple accounting rule application failures leading to the misstatement. Thus, the likelihood of a misstatement relating to inventory is low in this sample. The positive coefficient for AU9550 (z-stat, 2.006) suggests that compared to the base group registrants whose IPO audit report included in the IPO registration contains non-standard language consistent with AU Section 9550 are 57.4 percent more likely to misstate their financial statements within three years after the IPO. The negative coefficient for

AS5_404 (z-stat, -4.147) suggests that compared to the base group those registrants completing their IPO after the passage of AS 5 are 58.5 percent less likely to misstate their financial statements within three years after the IPO. Given the results in Table 9, I now compare the regression coefficients across the three indicators of degrading financial reporting quality using seemingly unrelated estimation.

4.7 Seemingly Unrelated Estimation of Degrading Financial Reporting Quality Groups

I test for differences in the VICW, VICW_REST, and REST groups of degrading financial reporting quality because some of the control variables are significant for multiple degrading financial reporting quality groups. I examine whether the controls that are significant for multiple degrading financial reporting quality groups are a stronger predictor for inclusion in any one of the three groups. I use seemingly unrelated estimation (SUEST) (Zellner 1962) by estimating equation (5) separately for the three groups and testing the equality of the coefficients. SUEST combines the parameter estimates and covariance matrices of the three models into a single parameter vector and simultaneous covariance matrix, allowing for cross-testing hypotheses. The advantage of this method over a regression that pools the groups is that that it does not assume equal residual variance between the three groups or constrain coefficients to be equal.

[INSERT TABLE 10]

Table 10 presents the coefficient estimates and tests of differences in the coefficients across the groups using SUEST to determine which company characteristics have the largest effect on being in one of the degrading financial reporting quality groups.

Tests of differences between the VICW and VICW_REST groups indicate that LN_TA, INVREC, Z, BIGN, AU9550, FOREIGN, AS5_404, BODSIZE, DUALCEO, and NAS differ between the VICW and VICW_REST groups. Larger companies (LN_TA) and companies with higher inventory and receivables to total assets ratios (INVREC) positively predict the choice to include voluntary ICW disclosures in IPO registration statements. Companies that have foreign operations (FOREIGN) or complete their IPO after AS 5 (AS5_404) positively predict the choice to include voluntary ICW disclosures in IPO registration statements. Companies with more board members (BODSIZE) and companies with a higher proportion of non-audit service fees to total audit fees (NAS) negatively predict the choice to include voluntary ICW disclosures in IPO registration statements. Companies that hire Big N auditors (BIGN) or include an explanatory paragraph disclaiming an auditor opinion on internal control over financial reporting (AU9550) negatively predict the choice to include voluntary ICW disclosures in IPO registration statements.[15]

Statistical tests of the models indicate that LN_TA, INVREC, AU9550, FOREIGN, AS5_404, BODSIZE, and NAS are statistically different between the VICW and REST groups. Larger companies (LN_TA) and companies with higher inventory and receivables to total assets ratios (INVREC) continue to predict the choice to include voluntary ICW disclosures in IPO registration statements. Companies that have foreign operations (FOREIGN) or complete their IPO after AS 5 (AS5_404) continue to predict

[15] Companies' Z scores (Z) and CEOs that are the Chairman of the board of directors (DUALCEO) are statistically significantly different between the VICW and VICW_REST groups. However, neither Z nor DUALCEO are significant predictors of the two groups.

the choice to include voluntary ICW disclosures in IPO registration statements. Companies with more board members (BODSIZE) and companies with a higher proportion of non-audit service fees to total audit fees (NAS) continue to predict the choice to exclude voluntary ICW disclosures in IPO registration statements. Companies that include an explanatory paragraph disclaiming an auditor opinion on internal control over financial reporting (AU9550) continue to predict the choice to exclude voluntary ICW disclosures in IPO registration statements.

Statistical tests of the models indicate that INVREC, BIGN, AS5_404, and BODSIZE are statistically different between the VICW_REST and REST groups. Companies with higher inventory and receivables to total assets ratios (INVREC) or more board members (BODSIZE) negatively predict including voluntary ICW disclosures in IPO registration statements and misstating financial statements within three years of the IPO. Companies that hire Big N auditors (BIGN), or complete their IPO after AS 5 (AS5_404) are less likely to include voluntary ICW disclosures in IPO registration statements and to misstate financial statements within three years of the IPO.

CHAPTER 5. ADDITIONAL ANALYSES

5.1 Self-Selection Correction – IPO Valuation

Because registrants' decisions to voluntarily disclose ICWs is a function of many factors, the choice to disclose ICWs voluntarily is non-random and thus generates the potential for selection bias. To control for this potential selection bias, I estimate the average treatment effect of IPO registrants that disclose ICWs voluntarily in their IPO registration statements on their IPO offer price using ETREGRESS from STATA (Cerulli

2014; Peel 2014). ETREGRESS estimates the average treatment effect on the treated observations (i.e., disclose ICWs voluntarily) when the outcome (i.e., IPO offer price) may not be conditionally independent of the treatment. Using this approach, I first model the choice to disclose ICWs as a function of registrant characteristics, using the following treatment model:

$$\begin{aligned}\text{TREAT (ICW\_REGISTRANT)} = {} & \beta_0 + \beta_1\text{IND\_PRESSURE} + \beta_2\text{NEWCEO} + \\ & \beta_3\text{CEOAGE} + \beta_4\text{LN\_MV} + \beta_5\text{LIT} + \beta_6\text{LN\_TA} + \beta_7\text{BIGN} + \beta_8\text{LN\_AGE} + \\ & \beta_9\text{VC\_BACKED} + \beta_{10}\text{PE\_BACKED} + \beta_{11}\text{CARVEOUT} + \beta_{12}\text{NASDAQ} + \beta_{13}\text{GC} + \\ & \beta_{14}\text{REST\_REGISTRANT} + \beta_{15}\text{LN\_BUSSEG} + \beta_{16}\text{FOREIGN} + \beta_{17}\text{GDWLIP} + \\ & \beta_{18}\text{WDP} + \beta_{19}\text{AUDITOR\_CHG} + \varepsilon \end{aligned} \quad (6)$$

The dependent variable in equation (6), ICW_REGISTRANT, is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls (material weakness, significant deficiency, or control deficiency) in its registration statement. The treatment model includes an instrumental variable that affects the binary decision to obtain treatment (Maddala 1983). I use industry pressure (IND_PRESSURE) as the instrumental variable in the treatment equation because the proportion of IPO registrants in the same industry that voluntarily disclose ICWs in their registration statements should not affect the IPO offer price; however, it is associated with the decision to voluntarily disclose ICWs. I calculate IND_PRESSURE as ratio of the number of registrants voluntarily disclosing ICWs in their registration statements for each Fama-French industry classification minus one divided by the total number of IPO registrants in the industry. The (untabulated) correlation between IND_PRESSURE and choosing to voluntarily disclose ICWs (ICW_REGISTRANT), is 0.13 and is significant

(p-value = <0.001), while the (untabulated) correlation between IND_PRESSURE and LN_IPO_PRICE is -0.23 (p-value = <0.001).[16]

The decision to disclose ICWs voluntarily is a function of various registrant characteristics; therefore, in the treatment model, I control for registrant characteristics that potentially affect IPOs' choices to disclose ICWs voluntarily. I control for NEWCEO, CEOAGE, LN_MV, LIT, LN_TA, BIGN, LN_AGE, VC_BACKED, PE_BACKED, CARVEOUT, NASDAQ, GC, REST_REGISTRANT, LN_BUSSEG, FOREIGN, GDWLIP, WDP, AUDITOR_CHG because prior research suggests that the choice to voluntarily disclose ICWs in IPO registration statements is associated with CEO characteristics, litigation risk, the registrants' auditors and capital providers, and other registrant characteristics (Jain and Tabek 2008; Venkataraman et al. 2008; Ashbaugh-Skaife et al. 2007; Doyle et al. 2007; Krishnan 2005; Goh 2009; Rice and Weber 2012; Beatty 1989; Beatty and Welch 1996; Hogan 1997; Mayhew and Wilkins 2003; Lou and Vasvari 2013; Gompers and Lerner 2000; Wallin and Dahlstrand 2006; Willenborg and McKeown 2001; Kinney and McDaniel 1989). The predictions for the control variables in equation (6) are consistent with those documented in the Voluntary ICW Disclosure Incentives section above. Appendix B provides a summary of all variables.

[16] The correlations suggest endogeneity between the instrumental variable (IND_PRESSURE) and the second stage outcome (LN_IPO_PRICE). Accordingly, I use a series of methods for treatment-effects estimation under treatment endogeneity that use only conditional-moment restrictions (Cerulli 2014; Peel 2014).

In the outcome model, I examine the average treatment effect of those registrants that disclose ICWs voluntarily on registrants' IPO valuations. I use the following OLS model:

$$\begin{aligned} LN\_IPO\_PRICE = {} & \beta_0 + \beta_1 ICW\_REGISTRANT + \beta_2 EPS + \beta_3 BV + \\ & \beta_4 NET\_PROCEEDS + \beta_5 UW\_SHARE + \beta_6 BIGN + \beta_7 LN\_AGE + \beta_8 LIT + \\ & \beta_9 NEWCEO + \beta_{10} CEOAGE + \beta_{11} LAMDA + YearFE + \varepsilon \end{aligned} \quad (7)$$

where LN_IPO_PRICE, the dependent variable in equation (7), is the logarithmic transformation of the IPO offer price. The variable of interest, ICW_REGISTRANT, is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls (material weakness, significant deficiency, or control deficiency) in its registration statement.

I control for EPS, BV, NET_PROCEEDS, UW_SHARE, BIGN, LN_AGE, LIT, NEWCEO, and CEOAGE because prior research suggests that IPO offer prices are associated with information in the prospectus and risk (Klein 1996; Beatty et al. 2000; Blankespoor et al. 2015). The predictions for the control variables in the model are consistent with those documented in the Voluntary Disclosure of ICWs and IPO Offer Prices section above. I include the LAMDA from equation (6) to control for the potential selection bias related to the association between the choice to include voluntary ICW disclosures in IPO registration statements and IPO offer prices. I also include year fixed effects to control for cross-sectional variation in IPO offer prices by year. Appendix B provides a summary of all variables.

Table 11 presents the results of estimating equation (6) predicting the likelihood of a registrant including voluntary ICW disclosures in their IPO registration statements. All p-values in the table are one-tailed.[17]

[INSERT TABLE 11]

The coefficient for IND_PRESSURE (z-stat, 1.922), is positive and significant suggesting that the probability that a registrant includes voluntary ICW disclosures increases as the proportion of other registrants within the same industry increases. I also find positive and significant coefficients for the NEWCEO (z-stat, 2.320), LN_MV (z-stat, 1.780), REST_REGISTRANT (z-stat, 5.068), and FOREIGN (z-stat, 2.913) control variables. These coefficients suggest that the probability that a registrant includes voluntary ICW disclosures increases as the registrants' market value of equity increases as well as when registrants hire a new CEO, restate prior financial statements, and have foreign operations. I find a negative and significant coefficient for LN_TA (z-stat, -1.894) suggesting larger registrants are less likely to include voluntary ICW disclosures.

Table 12 presents the results of estimating equation (7) using the logarithmic transformation of the IPO offer price as the dependent variable and whether the registrants voluntarily disclosed ICWs in their registration statements. Because I do not make directional predictions, all p-values in the tables are two-tailed. The coefficients on the year fixed effects are not reported for brevity.[18] Column (1) presents the results on the

[17] I also examine multi-collinearity for this equation using the Belsley et al. (1980) approach and find no evidence of degrading collinearity.

[18] I also examine multi-collinearity for this equation using the Belsley et al. (1980) approach and find no evidence of degrading collinearity.

association between registrants' IPO offer prices and disclosing ICWs voluntarily in IPO registration statements.

[INSERT TABLE 12]

In column (1), the coefficient for ICW_REGISTRANT (t-stat, 2.353) is positive and suggests that disclosing ICWs voluntarily in IPO registration statements is associated with higher IPO offer prices. The coefficients for EPS (t-stat, 5.419), BV (t-stat, 3.032), and UW_SHARE (t-stat, 4.943) are positive and significant. Thus, having higher earnings per share, a higher book value of equity and being represented by underwriters' with a higher proportion of market share of IPOs positively affects registrants' IPO valuations (Klein 1996; Beatty et al. 2000). The coefficients for LIT (t-stat, -5.814) and CEOAGE (t-stat, -2.926) are negative and significant. Thus, those registrants that operate in high litigation industries and hire older CEOs have lower IPO offer prices, which is consistent with prior literature. The LAMDA (t-stat, -1.859) is negative and significant suggesting that a standard OLS model would produce downwardly biased estimates (Cong and Drukker 2000). The estimated correlation (rho) between the treatment (ICW_REGISTRANT) and the outcome equation residual is -0.340. This suggests that when unobservable factors increase an IPO offer price, the registrants' propensity to voluntarily disclose ICWs decreases (and vice versa). In combination, these results suggest that IPO offer prices are higher for those registrants that disclose ICWs voluntarily.

5.2 Voluntary ICW Disclosures and Subsequent SOX 404 Material Weaknesses

To supplement my primary analyses, I perform one additional analysis for the subsequent SOX 404 material weakness sample. The primary analysis includes a control for the registrants' Z-scores. After I winsorize the Z variable, the range of Z-scores remains skewed. In my additional analysis (untabulated), I remove the Z control variable and re-estimate equation (3). When re-estimating equation (3), I continue to find a positive and significant coefficient on ICW_REGISTRANT (coefficient, 0.848; z-stat, 2.486), LOSS (coefficient, 0.904; z-stat, 2.488), and FOREIGN (coefficient, 0.751; z-stat, 1.929). I continue to find a negative and significant coefficient on LIT (coefficient, -0.661; z-stat, -1.871. These results suggest that my subsequent SOX 404 material weakness sample results are not a function of registrants' Z-scores.

5.3 Voluntary ICW Disclosures and Subsequent Misstatements

To supplement my primary analyses, I perform one additional analysis for the indicators of degrading financial reporting quality sample. The primary analysis includes a control for the registrants' Z-scores. After I winsorize the Z variable, the range of Z-scores remains skewed. In my additional analysis (untabulated), I remove the Z control variable and re-estimate equation (5).

For the VICW group, I continue to find a positive and significant coefficient on LN_TA (coefficient, 0.249; z-stat, 2.440), INVREC (coefficient, 2.168; z-stat, 3.106), FOREIGN (coefficient, 0.655; z-stat, 2.734), and AS5_404 (coefficient, 1.017; z-stat, 4.197). I continue to find a negative and significant coefficient on AU9550 (coefficient, -

0.475; z-stat, -2.282), BODSIZE (coefficient, -0.272; z-stat, -3.582), and NAS (coefficient, -1.860; z-stat, -2.542).

For the VICW_REST group, I find a positive and significant coefficient on FOREIGN (coefficient, 1.107; z-stat, 2.398), LN_BUSSEG (coefficient, 0.664; z-stat, 1.744), and LIT (coefficient, 1.260; z-stat, 2.672). I find a negative and significant coefficient on CR (coefficient, -0.218; z-stat, -1.910), INVREC (coefficient, -4.054; z-stat, -2.816), BIGN (coefficient, -1.597; z-stat, -3.364), and AS5_404 (coefficient, -0.691; z-stat, -1.697).

For the REST group, I continue to find a positive and significant coefficient on AU9550 (coefficient, 0.446; z-stat, 1.975). I continue to find a negative and significant coefficient on INVREC (coefficient, -1.393; z-stat, -0.069) and AS5_404 (coefficient, -0.895; z-stat, -4.237). These results suggest that my indicators of degrading financial reporting quality results are not a function of registrants' Z-scores.

CHAPTER 6. CONCLUSION

In this study, I first examine whether IPO registrants are more likely to disclose ICWs to increase management's disclosure credibility. The results suggest that IPO registrants with new CEOs who likely have greater incentives to increase disclosure credibility are more likely to include voluntary ICW disclosures in their registration statements.

Then, I examine the association between IPO management's voluntary disclosure of ICWs and IPO offer prices. The results suggest that offer prices of IPO registrants that voluntarily disclose ICWs are higher than those of IPO registrants that do not disclose.

Thus, the voluntary ICW disclosures are informative, and underwriters do not view the disclosures negatively.

Next, I examine the association between IPO management's voluntary disclosure of ICWs and subsequent SOX 404 material weaknesses. The results suggest an association between voluntary ICW disclosures and a higher likelihood of reported material weaknesses in the first SOX 404 auditor opinion. The majority of registrants that voluntarily disclosed ICWs in their IPO registration statement and received adverse SOX 404 auditor opinions reported similar ICWs in both SEC filings. Thus, the results provide evidence of an association between IPO registrants who include voluntary ICW disclosures in their registration statements and lower financial reporting quality after their offerings.

Then, I examine the extent to which voluntary disclosure of ICWs builds disclosure credibility with investors when subsequent negative events occur (i.e., SOX 404 material weakness). Interpreting the results requires caution about the ability to control for contaminating information released contemporaneously, and about the reliance on analysts' expectations of earnings. Subject to these limits, the evidence suggests that IPO registrants' voluntary ICW disclosures are informative because negative cumulative abnormal returns only occur for unremediated disclosed ICWs.

Finally, I examine the determinants of IPO registrants that have indicators of degrading financial reporting quality. The results suggest that voluntarily disclosing ICWs is not exclusively associated with misstatements occurring within three years of the IPO date. Approximately 62 percent of the sample have registration statements' auditor

opinions that include an explanatory paragraph disclaiming an opinion on internal control over financial reporting. The results suggest registrants' whose auditor opinions include this explanatory paragraph are more likely to have post-IPO misstatements even when the auditor issued an unqualified SOX 404 opinion in the year of misstatement. This finding suggests no adjustments in audit procedures in years after the IPO to account for the increased risk related to internal controls. Overall, my findings provide evidence that misstatements appear to outpace material weakness disclosures for the sample of IPO registrants.

This study contributes to several literature. First, this study extends the research on the effects of SOX by establishing an association between the market reactions to SOX 404 material weakness disclosures preceded by management's voluntary ICW disclosures. Second, it offers additional evidence on the value of voluntary disclosures for IPO registrants. Third, it broadens the disclosure literature by providing evidence that new CEOs have greater incentives to include voluntary disclosures. This setting is particularly informative because it provides insights about the integrity of individual registrants' financial reporting processes and management's disclosure credibility before SOX 302 and SOX 404 ICW disclosures are required. Fourth, it contributes to the audit literature by providing evidence of an association between voluntary disclosure of ICWs and a decrease in financial reporting quality. Fifth, it complements the extant literature on ICWs and misstatements by suggesting that misstatements are outpacing material weakness disclosures.

The results are timely and relevant to regulators because the relationship between misstatements and unqualified audit opinions is puzzling. Additionally, the JOBS Act regulation allows IPO registrants to delay SOX 404 compliance for up to five years. Finally, this study's results are important to investors because the purpose of SOX 404 is to provide advanced warning of financial reporting weaknesses.

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APPENDIX A
EXAMPLES OF VOLUNTARY ICW DISCLOSURES

We have had a material weakness in our internal control over financial reporting. In connection with the preparation of our financial statements as of and for the year ended December 31, 2010, our independent registered public accounting firm identified a material weakness in internal control over financial reporting with respect to: (i) the period of time over which initiation fees were recognized; (ii) the amortization period associated with data acquisition costs; (iii) expenses related to warrants issued in connection with our 2008 debt facility; and (iv) the recognition of sales tax expense in certain states, and in each case we adjusted the results of prior periods. Specifically:

- We had previously amortized initiation fees from our members over the length of the member contract, and we now amortize initiation fees over the expected life of the member based on our experience.
- We had previously amortized data acquisition costs that we acquired over ten years, and we now amortize data acquisition costs over three years.
- We had previously valued the warrant to purchase common stock issued to our lender in connection with our 2008 debt facility at a fixed amount negotiated with the lender. We revalued the warrant at its fair value at the time of grant.
- We had not previously recognized state sales tax expense, and we now have adopted appropriate provisions in that regard.

Under standards established by the Public Company Accounting Oversight Board, a deficiency in internal control over financial reporting exists when the design or operation of a control does not allow management or personnel, in the normal course of performing their assigned functions, to prevent or detect misstatements on a timely basis. A material weakness is a deficiency or combination of deficiencies in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected and corrected on a timely basis. While we believe that we have remediated the material weakness identified by our independent registered public accounting firm, we cannot assure that there will not be additional material weaknesses and significant deficiencies that our independent registered public accounting firm or we will identify. If we identify such issues or if we are unable to produce accurate and timely financial statements, our stock price may be adversely affected and we may be unable to maintain compliance with listing requirements of our stock exchange.

In addition, we will need to evaluate our internal controls over financial reporting in connection with Section 404 of the Sarbanes Oxley Act in our annual report for 2011, and our auditors will be required to attest to our internal controls over financial reporting starting with our annual report for 2012. This assessment will need to include disclosure of any material weaknesses in our internal control over financial reporting identified by our management, as well as our auditors' attestation report on our internal controls over

financial reporting. We are just beginning the costly and challenging process of compiling the system and processing documentation needed to comply with such requirements. We may not be able to complete our evaluation, testing and any required remediation in a timely fashion. If we identify one or more material weaknesses in our internal control over financial reporting during the evaluation and testing process, we will be unable to assert that our internal control over financial reporting is effective. If we are unable to assert that our internal control over financial reporting is effective, or if our auditors are unable to express an opinion on the effectiveness of our internal control over financial reporting, we could lose investor confidence in the accuracy and completeness of our financial reports, which could have a material adverse effect on the price of our common stock.

~Angie's List, Inc. November 17, 2011

The audit of our financial statements for each of the years ended December 31, 2002, 2003 and 2004, identified material weaknesses in our internal control over financial reporting, and if not corrected, these material weaknesses could result in a material misstatement of our results of operations or financial condition, which could harm our business and reputation and cause the price of our common stock to decline.
In connection with the audit of our financial statements for each of the years ended December 31, 2002, 2003 and 2004, our independent registered public accounting firm identified material weaknesses in our internal control over financial reporting with respect to:

- our financial closing and reporting process;
- our inventory costing and tracking methodology;
- our documentation supporting our accounting records; and
- our contemporaneous documentation of significant, non-routine transactions.

A material weakness is a reportable condition in which the design or operation of one or more accounting controls and procedures does not reduce to a relatively low likelihood the risk that a material misstatement of the annual or interim financial statements will not be prevented or detected within a timely period by employees in the normal course of performing their assigned functions.

The material weakness in our financial closing and reporting process resulted from a combination of the following factors:

- our failure to accurately account for complex transactions;
- our failure to monitor and apply new and emerging accounting principles generally accepted in the U.S., or GAAP;
- our lack of formal processes related to the consolidation of financial information and the financial statement preparation process; and
- our failure to reconcile our accounts in a timely and accurate manner.

The material weakness in our inventory tracking and costing methodology related to the method by which we had accounted for certain inventory related costs in each of 2002, 2003 and 2004. In these years, we did not appropriately capitalize these costs in inventory which resulted in adjustments to our financial statements. In addition, we also did not have a formal process for tracking our inventory.

The material weakness with respect to our accounting records related to our lack of supporting documentation that should have been readily available to evidence routine transactions, principally in 2002 and 2003.

The material weakness in the documentation of significant and non-routine transactions related specifically to a lack of contemporaneous documentation for certain of our equity compensation arrangements in 2002 through 2004 and our acquisition of Foam Creations in 2004.

We are in the process of addressing each of these material weaknesses. However, because these material weaknesses exist, there is a heightened risk that a material misstatement of our annual or interim financial statements will not be prevented or detected. In addition, the remediation steps we have taken, are taking, or plan to take may not effectively remediate the material weaknesses, in which case our accounting controls and procedures in these particular areas will continue to be ineffective.

Furthermore, once we become a public company, we will be required to comply with the requirements of Section 404 of the Sarbanes-Oxley Act of 2002 for the year ended December 31, 2007 and subsequent periods. See "—We will be required to meet periodic reporting requirements under SEC rules and regulations, and we will incur significant time and expense in documenting, testing and certifying our internal control over financial reporting, and any deficiencies in our internal controls could adversely affect our business." In the event that we
do not adequately remedy these material weaknesses, our business, reputation and financial condition may be adversely affected, there may be a negative reaction in the financial markets due to a loss of confidence in the reliability of our financial statements, which could cause the
price of our common stock to decline.

~ Crocs, Inc. February 8, 2006

Our management and auditors have identified material weaknesses in our internal controls that, if not properly remediated, could result in material misstatements in our financial statements and the inability of our management to provide its report on the effectiveness of our internal controls as required by the Sarbanes-Oxley Act of 2002, for years ending December 31, 2008 and thereafter, either of which could cause investors to lose confidence in our reported financial information and have a negative effect on the trading price of our stock.

We are not currently required to comply with Section 404 of the Sarbanes-Oxley Act of 2002 and are therefore not required to make an assessment of the effectiveness of our internal control over financial reporting. Further, our independent registered public accounting firm has not been engaged to express, nor have they expressed, an opinion on the effectiveness of our internal control over financial reporting. However, in connection with our fiscal 2006 financial statement audit, our accounting firm informed us that they had identified material weaknesses in our internal controls as defined by the American Institute of Certified Public Accountants.
The material weaknesses reported relate to having insufficient personnel resources with sufficient technical accounting expertise within our accounting function.

We are taking remedial measures to improve the effectiveness of our internal controls. Specifically, we will be:

- strengthening our internal staffing to accommodate public company requirements; and
- engaging an outside compliance consulting firm to advise us on improving our internal controls and systems.

The existence of material weaknesses is an indication that there is a more than remote likelihood that a material misstatement of our financial statements will not be prevented or detected in a future period, and the process of designing and implementing effective internal controls and procedures is a continuous effort that requires us to expend significant resources to maintain a system of internal controls that is adequate to satisfy our reporting obligations as a public company. We cannot assure you that the measures to be taken in the future will remediate the material weaknesses noted by our independent public accounting firm or that we will implement and maintain adequate controls over our financial processes and reporting in the future. In addition, we cannot assure you that additional material weaknesses or significant deficiencies in our internal controls will not be discovered in the future. If we fail to develop and maintain effective controls and procedures, we may be unable to provide the required financial information in a timely and reliable manner or otherwise comply with the standards applicable to us as a public company and we may not be able to provide a report on the effectiveness of our internal controls for the year ending December 31, 2008, or later. Any failure by us to timely provide the required financial information or provide a report on the effectiveness of our internal controls could materially and adversely impact our financial condition and the market value of our securities.

~ NeurogesX Inc. May 2, 2007

If we fail to remediate deficiencies in our internal control over financial reporting or are unable to implement and maintain effective internal control over financial reporting in the future, the accuracy, and timeliness of our financial reporting may be adversely affected.

In connection with the audits of our financial statements for 2009, 2010, and 2011, we identified a material weakness in the design and operating effectiveness of our internal control over financial reporting. A material weakness is a deficiency, or a combination of deficiencies, that creates a reasonable possibility that a material misstatement of a company's annual or interim financial statements will not be prevented or detected on a timely basis. The material weakness that we identified resulted from a lack of sufficient number of qualified personnel within our accounting function that possessed an appropriate level of expertise to effectively perform the following functions:

- identify, select, and apply GAAP sufficiently to provide reasonable assurance that transactions were being appropriately recorded; and
- design control activities over the financial flows and reporting processes necessary to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements.

We are taking numerous steps that we believe will address the underlying causes of the control deficiencies described above, primarily through the hiring of additional accounting and finance personnel with technical accounting and financial reporting experience, development and implementation of policies, and improved processes and documented procedures. If we fail to effectively remediate deficiencies in our control environment or are unable to implement and maintain effective internal control over financial reporting to meet the demands that will be placed upon us as a public company, including the requirements of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, we may be unable to accurately report our financial results, or report them within the timeframes required by law or exchange regulations.

Even if we are able to report our financial statements accurately and in a timely manner, if we do not make all necessary improvements to address the material weakness, continued disclosure of a material weakness will be required in future filings with the Securities and Exchange Commission, or SEC, which could cause our reputation to be harmed and our stock price to decline.

We have not performed an evaluation of our internal control over financial reporting, such as required by Section 404 of the Sarbanes-Oxley Act, nor have we engaged our independent registered public accounting firm to perform an audit of our internal control over financial reporting as of any balance sheet date or for any period reported in our financial statements. Had we performed such an evaluation or had our independent registered public accounting firm performed an audit of our internal control over financial reporting, control deficiencies, including material weaknesses and significant deficiencies, in addition to those discussed above, may have been identified. In addition, we are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act, and as such we may elect to avail ourselves of the exemption from the requirement that our independent registered public accounting firm audit our internal control over financial reporting under Section 404 of the Sarbanes-Oxley Act until we cease to be an

"emerging growth company." See "—We are an "emerging growth company," and any decision on our part to comply only with certain reduced reporting and disclosure requirements applicable to emerging growth companies could make our common stock less attractive to investors," for additional risks relating to our "emerging growth company" status.

~Trulia, Inc. September 20, 2012

APPENDIX B
VARIABLE DEFINITIONS

Dependent Variables	
ICW_REGISTRANT	Indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls (material weakness, significant deficiency, or control deficiency) in its registration statement.
IPO_PRICE	Offer price per share.
LN_IPO_PRICE	Logarithmic transformation of the IPO_PRICE.
ICW_404	Indicator variable equal to one (and zero otherwise) if the company's auditor provides an adverse opinion in their first SOX 404 report.
CAR(-1,1)	Market-adjusted cumulative abnormal return (equally weighted index) over days minus 1 and 1, where day 0 is the filing date of the second annual report including the first internal control over financial reporting opinion.
DFRQ	Categorical dependent variable in equation (5).
VICW	Indicator variable equal to one (and zero otherwise) if the registrant voluntarily discloses ICWs in the IPO registration statement, has an unqualified internal control over financial reporting opinion, and does not have a corresponding misstatement for the year mentioned in the internal control over financial reporting opinion.
VICW_REST	Indicator variable equal to one (and zero otherwise) if the registrant voluntarily discloses ICWs in the IPO registration statement, has an unqualified internal control over financial reporting opinion, and has a corresponding misstatement for the year mentioned in the internal control over financial reporting opinion.
REST	Indicator variable equal to one (and zero otherwise) if the registrant does not voluntarily disclose ICWs in the IPO registration statement, has an unqualified internal control of financial reporting opinion, and has a corresponding misstatement for the year mentioned in the internal control over financial reporting opinion.
Variable of Interest	
NEWCEO	Indicator variable equal to one (and zero otherwise) if the CEO tenure at the registrant is zero years at the IPO date.
CEOAGE	CEO age at the IPO date.

ICW	One of the four following ICW disclosure measures: ICW_REGISTRANT, MW_ONLY, SD_ONLY, and CD_ONLY.
MW_ONLY	Indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed, at least, one material weakness in its registration statement.
SD_ONLY	Indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed, at least, one significant deficiency in its registration statement.
CD_ONLY	Indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed, at least, one control deficiency in its registration statement.
VICW_CLEAN	Indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls (material weakness, significant deficiency, or control deficiency) in its registration statement and received an unqualified SOX 404 audit opinion in its second annual report.
SILENT_ADVERSE	Indicator variable equal to one (and zero otherwise) if the registrant did not voluntarily disclosed any deficient internal controls in its registration statement and received an adverse SOX 404 audit opinion in its second annual report.
VICW_ADVERSE	Indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls in its registration statement and received an adverse SOX 404 audit opinion in its second annual report.
IND_PRESSURE	Ratio of the number of registrants voluntarily disclosing ICWs in their registration statements for each Fama-French industry classification minus one divided by the total number of IPO registrants in the industry.
Independent Variables	
LN_TA	Logarithmic transformation of total assets.
LN_MV	Logarithmic transformation of the pre-IPO market value of equity.
LIT	Indicator variable equal to one (and zero otherwise) if the registrant operates in a high litigation risk industry; high litigation risk industries are identified based on four-digit SIC following Venkataraman et al. (2008).

BIGN	Indicator variable equal to one (and zero otherwise) if the registrant has a Big N auditor obtained from the most recent audited financial statements prior to the IPO.
LN_AGE	Logarithmic transformation of the registrant age.
VC_BACKED	Indicator variable equal to one (and zero otherwise) if the registrant is has venture capital backing.
PE_BACKED	Indicator variable equal to one (and zero otherwise) if the registrant has private equity backing.
CARVEOUT	Indicator variable equal to one (and zero otherwise) if the registrant is a spinoff from a public company.
NASDAQ	Indicator variable equal to one (and zero otherwise) if the registrant lists on the NASDAQ exchange.
GC	Indicator variable equal to one (and zero otherwise) if the registrant received a going concern opinion in the IPO registration statement.
REST_REGISTRANT	Indicator variable equal to one (and zero otherwise) if the registrant restated financial statements in the IPO registration statement.
LN_BUSSEG	Logarithmic transformation of the total number of business segments.
FOREIGN	Indicator variable equal to one (and zero otherwise) if the registrant has foreign operations.
GDWLIP	Pre-tax goodwill impairments.
WDP	Pre-tax write-downs.
AUDITOR_CHG	Indicator variable equal to one (and zero otherwise) if the registrant has changed auditors since the prior audited financial statement date.
EPS	Income before operations divided by the common shares used to calculate earnings per share fully diluted obtained from the most recent audited financial statements prior to the IPO.
BV	Ratio of total common/ordinary equity, obtained from the most recent audited financial statements prior to the IPO, divided by the number of shares offered in the registration statement and this ratio is multiplied by 1,000.
NET_PROCEEDS	Portion of the IPO proceeds retained by the issuer divided by the total IPO proceeds.

UW_SHARE	Ratio of the cumulative offer proceeds underwritten by the lead underwriter during the sample period divided by the aggregate offer proceeds for the entire sample.
LACK_RESOURCES	Indicator variable equal to one (and zero otherwise) if the registrant discloses an ICW in its IPO registration statement related to an in sufficient complement of personnel with the appropriate level of knowledge, experience, and training.
LOSS	Indicator variable equal to one (and zero otherwise) if the registrant has a net loss.
CR	Ratio of current assets to current liabilities.
INVREC	Ratio of the sum of inventory and receivables to total assets.
Z	Altman (2000) Z score.
DIFF_AUD	Indicator variable equal to one (and zero otherwise) if the auditor changed from the IPO.
AU9550	Indicator variable equal to one (and zero otherwise) if the registrant's IPO 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 internal control over financial reporting.
LN_FEES	Logarithmic transformation of the total audit fees.
NAS	Ratio of non-audit fees to total fees.
BM	Ratio of book value of equity to market value of equity.
ACCEL	Indicator variable equal to one (and zero otherwise) if the registrant is an accelerated filer as defined by the SEC (market value of equity > $75 million).
LEV	Ratio of the total debt to total assets.
BHR	Indicator variable equal to one (and zero otherwise) if the buy-and-hold abnormal return over the 120 days before the SOX 404 auditor opinion (i.e., from day -120 to -1) is less than zero.
LN_GEOSEG	Logarithmic transformation of the total number of geographic segments.
SALES_GROWTH	Indicator variable equal to one (and zero otherwise) if the registrants' sales growth is in the top quintile.

INVT	Ratio of inventory to total assets.
UE	Reported IBES earnings minus the median consensus analyst EPS forecast, deflated by stock price.
NEG_ROA	Indicator variable equal to one (and zero otherwise) if if the registrant reports a negative return on assets.
AS5_404	Indicator variable equal to one (and zero otherwise) if if the registrant's auditor opinion is issued after the passage of AS 5.
BODSIZE	Total number of members on the board of directors.
DUALCEO	Indicator variable equal to one (and zero otherwise) if the CEO is also the board chair.
LAMBDA	Inverse-Mills ratio.

Table 1
Degrading Financial Reporting Quality Indicators Sample Composition

Group	Description	Observations	Sample %
0	No indicators of degrading financial reporting quality (Base Group)	288	45.35
1	VICW	151	23.78
2	VICW_REST	63	9.92
3	REST	133	20.94

Table 2
Sample Selection

Panel A: Voluntary Disclosure of ICWs Incentives

	Description	Voluntary Disclosure of ICWs
1	Beginning population[19]	1215
2	Drop observations missing Compustat data for year-end before IPO	(188)
3	Drop observations missing BoardEx CEO data	(419)
4	Ending sample	608

Panel B: Voluntary Disclosure of ICWs and IPO Offer Prices

	Description	SOX 404 Auditor Opinions
1	Beginning population	608
2	Drop observations missing Compustat data	(18)
3	Ending sample	590

Panel C: Voluntary Disclosure of ICWs and SOX 404 Material Weaknesses

	Description	SOX 404 Auditor Opinions
1	Beginning population[20]	1042
2	Drop observations missing Compustat data	(111)
3	Drop observations missing Audit Analytics data for second annual report filing after the IPO	(146)
4	Ending sample	785

[19] The sample is restricted to registrants that originally file their registration statement with the SEC on form S-1 or F-1 and have subsequent Audit Analytics and Compustat data available. Detailed sample procedures provided upon request.

[20] The sample is restricted to registrants that have Compustat total assets available for the second annual report after the IPO registration statement. Detailed sample procedures provided upon request.

Table 2 (continued)
Sample Selection

Panel D: Voluntary Disclosure of ICWs and SOX 404 Material Weaknesses Market Reaction

	Description	SOX 404 Auditor Opinions
1	Beginning population[21]	1042
2	Drop observations missing Compustat data	(7)
3	Drop observations missing Audit Analytics data for second annual report filing after the IPO	(113)
4	Drop observations with missing CAR data	(159)
5	Drop observations with missing IBES data	(242)
6	Drop observations with different ICWs disclosed in IPO and adverse SOX 404 auditor opinion	(4)
7	Ending sample	517

Panel E: Voluntary Disclosure of ICWs and Subsequent Misstatements

	Description	SOX 404 Auditor Opinions
1	Beginning population[22]	1307
2	Drop observations missing Compustat data	(181)
3	Drop observations with misstatement occurring more than three years after the IPO	(324)
4	Drop observations with SOX 404 material weakness related to the same year of the misstatement	(67)
5	Drop observations missing BoardEx data	(100)
6	Ending sample	635

[21] The sample is restricted to registrants that have Compustat total assets available for the second annual report after the IPO registration statement. Detailed sample procedures provided upon request.
[22] The sample is restricted to registrants that have Audit Analytics data available after the IPO registration statement. Detailed sample procedures provided upon request.

Table 3
Sample Composition

Panel A: Classification by Industry

FF Code	Industry	H1	H2	H3	H4	H5
1	Food	8	7	15	7	4
2	Mining and minerals	9	9	11	5	5
3	Oil and petroleum products	50	48	68	44	55
4	Textiles, apparel, and footwear	6	6	9	5	5
5	Consumer durables	8	8	9	5	7
6	Chemicals	11	11	15	9	10
7	Consumer drugs, soap, perfumes, and tobacco	21	21	41	23	19
8	Construction and construction materials	5	4	9	6	10
9	Steel works	3	3	6	2	2
10	Fabricated products	1	1	2	2	-
11	Machinery and business equipment	66	65	103	61	91
12	Automobiles	5	4	6	3	5
13	Transportation	19	18	50	32	38
14	Utilities	10	9	18	12	30
15	Retail stores	34	33	46	18	35
16	Financial institutions	87	84	32	74	13
17	Other	265	259	345	209	306
	Total	608	590	785	517	635

Table 3 (continued)
Sample Composition

Panel B: Classification by Year – Voluntary Disclosure of ICWs Incentives			
		ICW_REGISTRANT	
IPO Year	**N**	**n=1**	**Sample %**
2005	106	23	21.70%
2006	112	27	24.11%
2007	101	29	38.61%
2008	19	7	36.84%
2009	33	11	33.33%
2010	84	24	28.57%
2011	71	22	30.99%
2012	71	18	25.35%
2013	11	1	9.09%
Panel C: Classification by Year – Voluntary Disclosure of ICWs and IPO Offer Price			
		ICW_REGISTRANT	
Fiscal Year	**N**	**n=1**	**Sample %**
2005	103	22	21.36%
2006	107	24	22.43%
2007	100	28	28.00%
2008	18	6	33.33%
2009	31	11	35.48%
2010	83	24	28.92%
2011	68	22	32.35%
2012	70	18	25.71%
2013	10	1	10.00%

Table 3 (continued)
Sample Composition

Panel D: Classification by Year – Voluntary Disclosure of ICWs and SOX 404 Material Weaknesses

		ICW_REGISTRANT	
Fiscal Year	**N**	**n=1**	**Sample %**
2005	1	0	00.00%
2006	98	23	23.47%
2007	147	45	30.61%
2008	142	48	33.80%
2009	25	9	36.00%
2010	42	17	40.48%
2011	100	42	42.00%
2012	87	30	34.48%
2013	86	26	30.23%
2014	57	12	21.05%

Panel E: Classification by Year – Voluntary Disclosure of ICWs and SOX 404 Material Weaknesses Market Reaction

		ICW_REGISTRANT	
Fiscal Year	**N**	**n=1**	**Sample %**
2006	86	17	19.77%
2007	141	41	29.08%
2008	125	41	32.80%
2009	22	6	27.27%
2010	41	13	31.71%
2011	92	34	36.96%
2012	10	3	30.00%

Table 3 (continued)
Sample Composition

Panel F: Voluntary Disclosure of ICWs and Subsequent Misstatements			
		ICW_REGISTRANT	
Fiscal Year	**N**	**n=1**	**Sample %**
2005	19	4	21.05%
2006	41	10	24.39%
2007	57	16	28.07%
2008	66	23	34.85%
2009	66	23	34.85%
2010	88	33	37.50%
2011	92	30	32.61%
2012	103	38	36.89%
2013	102	36	35.29%
2014	1	1	100.00%

Table 4
Descriptive Statistics

Panel A: Voluntary Disclosure of ICWs Incentives

Variable	N	Mean	Median	Std Dev	Min	Q1	Q3	Max
ICW_REGISTRANT	608	0.27	0.00	0.44	0.00	0.00	1.00	1.00
NEWCEO	608	0.60	1.00	0.49	0.00	0.00	1.00	1.00
CEOAGE	608	50.06	50.00	7.65	27.00	45.00	55.50	70.00
LN_MV	608	19.87	19.79	1.02	17.05	19.24	20.44	24.63
LIT	608	0.43	0.00	0.50	0.00	0.00	1.00	1.00
LN_TA	608	5.20	4.99	1.84	(1.80)	3.85	6.39	11.82
BIGN	608	0.76	1.00	0.42	0.00	1.00	1.00	1.00
LN_AGE	608	2.24	2.20	1.10	0.00	1.61	2.89	5.11
VC_BACKED	608	0.41	0.00	0.49	0.00	0.00	1.00	1.00
PE_BACKED	608	0.32	0.00	0.47	0.00	0.00	1.00	1.00
CARVEOUT	608	0.08	0.00	0.26	0.00	0.00	0.00	1.00
NASDAQ	608	0.60	1.00	0.49	0.00	0.00	1.00	1.00
GC	608	0.16	0.00	0.37	0.00	0.00	0.00	1.00
REST_REGISTRANT	608	0.13	0.00	0.33	0.00	0.00	0.00	1.00
LN_BUSSEG	608	1.32	1.10	0.50	0.69	1.10	1.10	3.18
FOREIGN	608	0.47	0.00	0.50	0.00	0.00	1.00	1.00
GDWLIP	608	(2.18)	0.00	25.13	(509.35)	0.00	0.00	0.00
WDP	608	(1.83)	0.00	36.11	(899.00)	0.00	0.00	0.00
AUDITOR_CHG	608	0.60	1.00	0.49	0.00	0.00	1.00	1.00

Table 4 (continued)
Descriptive Statistics

Panel B: Voluntary Disclosure of ICWs and IPO Offer Price

Variable	N	Mean	Median	Std Dev	Min	Q1	Q3	Max
IPO_PRICE	590	15.03	14.00	6.39	5.00	11.00	18.00	43.00
LN_IPO_PRICE	590	2.63	2.64	0.40	1.39	2.40	2.89	4.08
ICW_REGISTRANT	590	0.26	0.00	0.44	0.00	0.00	1.00	1.00
MW_ONLY	590	0.15	0.00	0.36	0.00	0.00	0.00	1.00
SD_ONLY	590	0.03	0.00	0.18	0.00	0.00	0.00	1.00
CD_ONLY	590	0.01	0.00	0.08	0.00	0.00	0.00	1.00
EPS	590	0.32	0.08	11.51	(5.35)	(0.55)	0.55	7.93
BV	590	0.00	(0.00)	0.04	(0.05)	(0.01)	0.01	0.13
NET_PROCEEDS	590	0.79	0.93	0.21	0.00	0.70	0.93	0.98
UW_SHARE	590	0.08	0.05	0.08	0.00	0.01	0.16	0.21
BIGN	590	0.76	1.00	0.43	0.00	1.00	1.00	1.00
LN_AGE	590	2.20	2.20	1.09	0.00	1.61	2.83	5.11
LIT	590	0.44	0.00	0.50	0.00	0.00	1.00	1.00
NEWCEO	590	0.60	1.00	0.50	0.00	0.00	1.00	1.00
CEOAGE	590	49.89	50.00	7.51	35.00	44.00	55.00	68.00

Table 4 (continued)
Descriptive Statistics

Panel C: Voluntary Disclosure of ICWs and SOX 404 Material Weaknesses

Variable	N	Mean	Median	Std Dev	Min	Q1	Q3	Max
ICW_404	785	0.06	0.00	0.23	0.00	0.00	0.00	1.00
ICW_REGISTRANT	785	0.32	0.00	0.47	0.00	0.00	1.00	1.00
LN_TA	785	5.91	5.79	1.41	0.44	4.99	6.78	11.13
LACK_RESOURCES	785	0.17	0.00	0.37	0.00	0.00	0.00	1.00
LN_BUSSEG	785	1.24	1.10	0.54	0.29	1.00	1.10	3.14
LOSS	785	0.37	0.00	0.47	0.00	0.00	1.00	1.00
CR	785	3.60	2.52	3.66	0.31	1.48	4.30	23.94
INVREC	785	0.17	0.13	0.15	0.00	0.05	0.24	0.92
Z	785	128.02	4.07	501.97	0.87	2.20	13.17	3446.98
BIGN	785	0.86	1.00	0.35	0.00	1.00	1.00	1.00
DIFF_AUD	785	0.17	0.00	0.37	0.00	0.00	0.00	1.00
LIT	785	0.46	0.00	0.37	0.00	0.00	1.00	1.00
LN_AGE	785	2.06	2.08	1.16	0.00	1.39	2.71	5.11
AU9550	785	0.63	1.00	0.48	0.00	0.00	1.00	1.00
FOREIGN	785	0.55	1.00	0.48	0.00	0.00	1.00	1.00
REST_REGISTRANT	785	0.16	0.00	0.37	0.00	0.00	0.00	1.00
LN_FEES	785	13.68	13.72	0.84	10.52	13.18	14.16	16.68
NAS	785	0.14	0.11	0.14	0.00	0.02	0.23	0.70

Table 4 (continued)
Descriptive Statistics

Panel D: Voluntary Disclosure of ICWs and SOX 404 Material Weaknesses Market Reaction

Variable	N	Mean	Median	Std Dev	Min	Q1	Q3	Max
CAR	517	(0.01)	(0.00)	0.09	(0.62)	(0.04)	0.03	0.57
VICW_CLEAN	517	0.27	0.00	0.45	0.00	0.00	1.00	1.00
SILENT_ADVERSE	517	0.03	0.00	0.16	0.00	0.00	0.00	1.00
VICW_ADVERSE	517	0.02	0.00	0.15	0.00	0.00	0.00	1.00
LN_TA	517	6.05	5.94	1.38	2.52	5.04	6.99	11.88
BM	517	0.14	0.07	0.78	0.01	0.04	0.15	1.19
ACCEL	517	0.92	1.00	0.27	0.00	1.00	1.00	1.00
LEV	517	0.17	0.05	0.22	0.00	0.00	0.33	0.78
BHR	517	0.50	0.00	0.50	0.00	0.00	1.00	1.00
LN_GEOSEG	517	1.15	1.10	0.96	0.00	0.00	1.79	3.76
FOREIGN	517	0.56	0.00	0.50	0.00	0.00	1.00	1.00
SALES_GROWTH	517	0.20	0.00	0.40	0.00	0.00	0.00	1.00
INVT	517	0.06	0.01	0.10	0.00	0.00	0.08	0.49
LOSS	517	0.31	0.00	0.46	0.00	0.00	1.00	1.00
LN_AGE	517	2.26	2.30	1.09	0.00	1.79	2.89	5.11
UE	517	(0.01)	0.00	0.05	(0.34)	(0.00)	0.00	0.08
DIFF_AUD	517	0.08	0.00	0.28	0.00	0.00	0.00	1.00

Table 4 (continued)
Descriptive Statistics

Panel E: Voluntary Disclosure of ICWs and Subsequent Misstatements

Variable	N	Mean	Median	Std Dev	Min	Q1	Q3	Max
VICW	635	0.24	0.00	0.43	0.00	0.00	0.00	1.00
VICW_REST	635	0.10	0.00	0.30	0.00	0.00	0.00	1.00
REST	635	0.21	0.00	0.41	0.00	0.00	0.00	1.00
LN_TA	635	6.26	6.14	1.58	0.62	5.18	7.31	12.02
LN_BUSSEG	635	1.32	1.10	0.57	0.69	1.00	1.61	3.18
NEG_ROA	635	0.40	0.00	0.49	0.00	0.00	1.00	1.00
CR	635	3.10	2.10	3.27	0.06	1.38	3.46	19.92
INVREC	635	0.18	0.14	0.16	0.00	0.06	0.26	0.80
Z	635	142.28	4.31	631.27	0.56	2.23	13.00	4666.33
BIGN	635	0.85	1.00	0.36	0.00	1.00	1.00	1.00
AUDITOR_CHG	635	0.06	0.00	0.23	0.00	0.00	0.00	1.00
LIT	635	0.43	0.00	0.50	0.00	0.00	1.00	1.00
AU9550	635	0.62	1.00	0.49	0.00	0.00	1.00	1.00
LN_AGE	635	2.24	2.19	1.17	0.00	1.61	2.83	4.83
FOREIGN	635	0.43	0.00	0.50	0.00	0.00	1.00	1.00
AS5_404	635	0.55	1.00	0.50	0.00	0.00	1.00	1.00
BODSIZE	635	8.03	8.00	1.57	5.00	7.00	9.00	12.00
DUALCEO	635	0.43	0.00	0.49	0.00	0.00	1.00	1.00
NAS	635	0.16	0.12	0.16	0.00	0.03	0.25	0.85

Table 5
Logistic Regression of Voluntary ICW Disclosure Incentives

$ICW\_REGISTRANT = \beta_0 + \beta_1 NEWCEO + \beta_2 CEOAGE + \beta_3 LN\_MV + \beta_4 LIT + \beta_5 LN\_TA + \beta_6 BIGN + \beta_7 LN\_AGE + \beta_8 VC\_BACKED + \beta_9 PE\_BACKED + \beta_{10} CARVEOUT + \beta_{11} NASDAQ + \beta_{12} GC + \beta_{13} REST\_REGISTRANT + \beta_{14} LN\_BUSSEG + \beta_{15} FOREIGN + \beta_{16} GDWLIP + \beta_{17} WDP + \beta_{18} AUDITOR\_CHG + \varepsilon$

	(1)	(2)	(3)
NEWCEO	0.554		0.554
	(2.567)***		(2.562)***
CEOAGE		-0.002	-0.001
		(-0.178)	(-0.085)
LN_MV	-0.026	0.025	-0.028
	(-0.108)	(0.107)	(-0.116)
LIT	0.243	0.229	0.241
	(1.773)**	(1.675)**	(1.755)**
LN_TA	-0.229	-0.216	-0.229
	(-2.419)***	(-2.288)**	(-2.415)***
BIGN	-0.302	-0.365	-0.300
	(-1.211)	(-1.479)	(-1.202)
LN_AGE	0.010	-0.011	0.011
	(0.108)	(-0.114)	(0.113)
VC_BACKED	0.060	0.085	0.057
	(0.189)	(0.268)	(0.179)
PE_BACKED	0.344	0.303	0.343
	(1.242)	(1.103)	(1.237)
CARVEOUT	0.094	0.164	0.095
	(0.243)	(0.430)	(0.246)
NASDAQ	0.022	-0.044	0.022
	(0.093)	(-0.182)	(0.093)
GC	0.017	0.048	0.016
	(0.061)	(0.174)	(0.060)
REST_REGISTRANT	1.533	1.411	1.531
	(5.688)***	(5.361)***	(5.651)***
LN_BUSSEG	0.178	0.174	0.178
	(0.816)	(0.806)	(0.815)
FOREIGN	0.668	0.684	0.669
	(3.170)***	(3.267)***	(3.171)***
GDWLIP	-0.004	-0.005	-0.004
	(-1.197)	(-1.285)	(-1.199)
WDP	-0.015	-0.022	-0.015
	(-0.392)	(-0.562)	(-0.393)
AUDITOR_CHG	0.235	0.284	0.235
	(1.126)	(1.370)	(1.124)

INTERCEPT	-5.923 (-2.351)***	-5.176 (-1.942)**	-5.842 (-2.169)**
ROC	0.693	0.682	0.694
GOF Chi^2 (p-value)	0.191	0.231	0.182
Pseudo R-squared	0.094	0.084	0.094
N	608	608	608

Notes: Coefficient estimates are from the logistic model estimation of equation (1) and z-statistics are in parentheses. ***, **, and * denote statistical significance at the 0.01 [or 1 percent], 0.05 [or 5 percent], and 0.10 [or 10 percent] levels (one-tailed), respectively, and are derived from test statistics based on normal standard errors. The dependent variable, ICW_REGISTRANT is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls (material weakness, significant deficiency, or control deficiency) in its registration statement. The variables of interest are NEWCEO and CEOAGE. NEWCEO is an indicator variable equal to one (and zero otherwise) if the CEO tenure at the registrant is zero years at the IPO date. CEOAGE is CEO age at the IPO date. All continuous variables are winsorized at the 1 and 99 percent levels. Appendix B provides a summary of all variables.

Table 6
OLS Regression of Voluntary ICW Disclosures and IPO Offer Prices

$LN\_IPO\_PRICE = \beta_0 + \beta_1 ICW + \beta_2 EPS + \beta_3 BV + \beta_4 NET\_PROCEEDS + \beta_5 UW\_SHARE + \beta_6 BIGN + \beta_7 LN\_AGE + \beta_8 LIT + \beta_9 NEWCEO + \beta_{10} CEOAGE + YearFE + \varepsilon$

	(1)	(2)
ICW_REGISTRANT	0.061	
	(2.075)**	
MW_ONLY		0.092
		(2.788)***
SD_ONLY		0.055
		(0.878)
CD_ONLY		0.200
		(1.516)
EPS	0.059	0.057
	(5.251)***	(5.109)***
BV	1.898	1.887
	(2.437)**	(2.425)**
NET_PROCEEDS	-0.051	-0.053
	(-0.774)	(-0.803)
UW_SHARE	0.823	0.783
	(4.064)***	(3.869)***
BIGN	0.032	0.033
	(0.936)	(0.960)
LN_AGE	0.016	0.018
	(1.100)	(1.235)
LIT	-0.174	-0.177
	(-5.317)***	(-5.408)***
NEWCEO	-0.059	-0.055
	(-1.368)	(-1.265)
CEOAGE	-0.008	-0.008
	(-3.961)***	(-4.051)***
INTERCEPT	3.076	3.078
	(23.780)***	(23.905)***
Year Fixed Effects	Yes	Yes
R-squared	0.240	0.248
N	590	590

Notes: Coefficient estimates are from the OLS model estimation of equation (2) and t-statistics are in parentheses. ***, **, and * denote statistical significance at the 0.01 [or 1 percent], 0.05 [or 5 percent], and 0.10 [or 10 percent] levels (two-tailed), respectively, and are derived from test statistics based on normal standard errors. The dependent variable, LN_OFFER_PRICE, is the logarithmic transformation of the IPO_PRICE. The variables of interest ICW is one of the four following ICW disclosure measures: ICW_REGISTRANT, MW_ONLY, SD_ONLY, and CD_ONLY. ICW_REGISTRANT is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls (material weakness, significant deficiency, or control deficiency) in its registration statement. MW_ONLY is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed at least one material weakness in its registration statement. SD_ONLY is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed at least one significant deficiency in its registration statement. CD_ONLY is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed at least one control deficiency in its registration statement. All continuous variables are winsorized at the 1 and 99 percent levels. Appendix B provides a summary of all variables.

Table 7
Firth Logistic Regression of Voluntary ICW Disclosures and Subsequent SOX 404 Material Weaknesses

$ICW\_404 = \beta_0 + \beta_1 ICW\_REGISTRANT + \beta_2 LN\_TA + \beta_3 LACK\_RESOURCES + \beta_4 LN\_BUSSEG + \beta_5 LOSS + \beta_6 CR + \beta_7 INVREC + \beta_8 Z + \beta_9 BIGN + \beta_{10} DIFF\_AUD + \beta_{11} LN\_AGE + \beta_{12} AU9550 + \beta_{13} FOREIGN + \beta_{14} REST\_REGISTRANT + \beta_{15} LN\_FEES + \beta_{16} NAS + YearFE + IndustryFE + \varepsilon$

	(1)
ICW_REGISTRANT	1.061
	(2.509)***
LN_TA	-0.053
	(-0.266)
LACK_RESOURCES	-0.120
	(-0.265)
LN_BUSSEG	0.202
	(0.619)
LOSS	0.792
	(2.246)***
CR	0.035
	(0.882)
INVREC	0.451
	(0.392)
Z	-0.000
	(-0.728)
BIGN	-0.115
	(-0.232)
DIFF_AUD	0.518
	(0.785)
LN_AGE	0.038
	(0.242)
AU9550	0.391
	(1.134)
FOREIGN	0.564
	(1.450)*
REST_REGISTRANT	-0.204
	(-0.463)
LN_FEES	0.069
	(0.218)
NAS	-1.042
	(-0.805)
INTERCEPT	-3.720
	(-0.995)
Year Fixed Effects	Yes

Industry Fixed Effects	Yes
N	785

Notes: Coefficient estimates are from the Firth logistic model estimation of equation (3) and z-statistics are in parentheses. ***, **, and * denote statistical significance at the 0.01 [or 1 percent], 0.05 [or 5 percent], and 0.10 [or 10 percent] levels (one-tailed), respectively, and are derived from test statistics based on normal standard errors. The dependent variable, ICW_404, is an indicator variable equal to one (and zero otherwise) if the company's auditor provides an adverse opinion in their first SOX 404 report. The variable of interest, ICW_REGISTRANT, is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls (material weakness, significant deficiency, or control deficiency) in its registration statement. All continuous variables are winsorized at the 1 and 99 percent levels. Appendix B provides a summary of all variables.

Table 8
OLS Regression of Voluntary ICW Disclosures and Subsequent SOX 404 Material Weaknesses' Cumulative Abnormal Returns

$CAR(-1,1) = \beta_0 + \beta_1 VICW\_CLEAN + \beta_2 SILENT\_ADVERSE + \beta_3 VICW\_ADVERSE + \beta_4 LN\_TA + \beta_5 BM + \beta_6 ACCEL + \beta_7 LEV + \beta_8 BHR + \beta_9 BIGN + \beta_{10} LN\_GEOSEG + \beta_{11} FOREIGN + \beta_{12} SALES\_GROWTH + \beta_{13} INVT + \beta_{14} LOSS + \beta_{15} LN\_AGE + \beta_{16} UE + \beta_{17} DIFF\_AUD + YearFE + IndustryFE + \varepsilon$

	(1)
VICW_CLEAN	-0.008
	(-0.981)
SILENT_ADVERSE	-0.040
	(-1.600)
VICW_ADVERSE	-0.041
	(-1.852)*
LN_TA	-0.003
	(-0.577)
BM	0.028
	(0.840)
ACCEL	0.031
	(1.730)*
LEV	0.024
	(1.018)
BHR	-0.004
	(-0.475)
BIGN	-0.016
	(-1.276)
LN_GEOSEG	0.007
	(1.328)
FOREIGN	0.007
	(0.722)
SALE_GROWTH	0.009
	(0.727)
INVT	0.013
	(0.247)
LOSS	-0.009
	(-0.933)
LN_AGE	0.005
	(1.226)
UE	0.121
	(1.316)
DIFF_AUD	0.011
	(0.705)
INTERCEPT	-0.040
	(-0.956)

Year Fixed Effects	Yes
Industry Fixed Effects	Yes
R-squared	0.052
N	517

Notes: Coefficient estimates are from the OLS model estimation of equation (4) and t-statistics are in parentheses. ***, **, and * denote statistical significance at the 0.01 [or 1 percent], 0.05 [or 5 percent], and 0.10 [or 10 percent] levels (two-tailed), respectively, and are derived from test statistics based on normal standard errors. The dependent variable, CAR (-1,1), is the market-adjusted cumulative abnormal return (equally weighted index) over days minus 1 and 1, where day 0 is the filing date of the annual financial statements including an internal control over financial reporting opinion. The variables of interest are VICW_CLEAN, SILENT_ADVERSE, and VICW_ADVERSE. VICW_CLEAN, is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls (material weakness, significant deficiency, or control deficiency) in its registration statement and received an unqualified SOX 404 audit opinion in its second annual report. SLIENT_ADVERSE is an indicator variable equal to one (and zero otherwise) if the registrant did not voluntarily disclosed any deficient internal controls in its registration statement and received an adverse SOX 404 audit opinion in its second annual report. VICW_ADVERSE is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls in its registration statement and received an adverse SOX 404 audit opinion in its second annual report. All continuous variables are winsorized at the 1 and 99 percent levels. Appendix B provides a summary of all variables.

Table 9
Logistic Regression of Degrading Financial Reporting Quality Indicators

$DFRQ = \beta_0 + \beta_1 LN\_TA + \beta_2 LN\_BUSSEG + \beta_3 NEG\_ROA + \beta_4 CR + \beta_5 INVREC + \beta_6 Z + \beta_7 BIGN + \beta_8 AUDITOR\_CHG + \beta_9 LIT + \beta_{10} AU9550 + \beta_{11} LN\_AGE + \beta_{12} FOREIGN + \beta_{13} AS5\_404 + \beta_{14} BODSIZE + \beta_{15} DUALCEO + \beta_{16} NAS + \varepsilon$

	(1)	(2)	(3)
	VICW	*VICW_REST*	*REST*
LN_TA	0.253	-0.071	-0.028
	(2.471)**	-(0.519)	(-0.280)
	[1.287]	[-0.931]	[-0.973]
LN_BUSSEG	0.131	0.320	-0.090
	(0.668)	(1.118)	(-0.431)
	[1.140]	[1.377]	[-0.914]
NEG_ROA	-0.166	-0.453	0.134
	(-0.707)	(-1.398)	(0.585)
	[-0.847]	[-0.635]	[1.143]
CR	-0.040	-0.067	0.011
	(-0.842)	(-1.247)	(0.344)
	[-0.961]	[-0.935]	[1.011]
INVREC	2.186	-2.405	-1.409
	(3.127)***	(-2.286)**	(-1.842)*
	[8.898]	[-0.090]	[-0.244]
Z	0.000	0.000	-0.000
	(0.922)	(1.705)*	(-1.095)
	[1.000]	[1.000]	[-1.000]
BIGN	-0.123	-0.916	0.139
	(-0.379)	(-2.400)**	(0.432)
	[-0.884]	[-0.400]	[1.149]
AUDITOR_CHG	-0.308	-0.309	-0.011
	(-0.630)	(-0.529)	(-0.026)
	[-0.735]	[-0.734]	[-0.989]
LIT	0.210	0.416	-0.307
	(0.855)	(1.270)	(-1.306)
	[1.233]	[1.515]	[-0.736]
AU9550	-0.481	-0.349	0.453
	(-2.308)**	(-1.182)	(2.006)**
	[-0.618]	[-0.705]	[1.574]
LN_AGE	-0.121	-0.010	0.083
	(-1.367)	(-0.072)	(0.908)
	[-0.886]	[-0.990]	[1.086]
FOREGIN	0.662	0.648	0.066
	(2.757)***	(1.957)*	(0.281)

	[1.939]	[1.191]	[1.068]
AS5_404	0.999	-0.899	-0.879
	(4.114)***	(-3.048)***	(-4.147)***
	[2.715]	[-0.407]	[-0.415]
BODSIZE	-0.270	-0.145	-0.093
	(-3.558)***	(-1.474)	(-1.331)
	[-0.763]	[-0.865]	[-0.911]
DUALCEO	-0.302	-0.417	0.142
	(-1.414)	(-1.408)	(0.669)
	[-0.739]	[-0.659]	[1.152]
NAS	-1.875	-0.335	0.401
	(-2.465)**	(-0.381)	(0.626)
	[-0.153]	[-0.715]	[1.494]
INTERCEPT	-1.169	0.829	-0.220
	(-1.426)	(0.781)	(-0.285)
	[-0.311]	[2.291]	[-0.803]
ROC	0.746	0.723	0.633
GOF Chi^2 (p-value)	0.341	0.832	0.259
Pseudo R-squared	0.119	0.086	0.048
N	635	635	635

Notes: Coefficient estimates are from the logistic regression estimation of equation (5) and z-statistics are in parentheses. ***, **, and * denote statistical significance at the 0.01 [or 1 percent], 0.05 [or 5 percent], and 0.10 [or 10 percent] levels (two-tailed), respectively, and are derived from test statistics based on robust standard errors. Odds ratios are in brackets. See Table 1 for observation totals for the outcomes. The dependent variable, DFRQ, is one of the three following categorical variables: VICW, VICW_REST, and REST. VICW is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily discloses ICWs in the IPO registration statement, has an unqualified internal control over financial reporting opinion, and does not have a corresponding misstatement for the year mentioned in the internal control over financial reporting opinion. VICW_REST is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily discloses ICWs in the IPO registration statement, has an unqualified internal control over financial reporting opinion, and has a corresponding misstatement for the year mentioned in the internal control over financial reporting opinion. REST is an indicator variable equal to one (and zero otherwise) if the registrant does not voluntarily disclose ICWs in the IPO registration statement, has an unqualified internal control of financial reporting opinion, and has a corresponding misstatement for the year mentioned in the internal control over financial reporting opinion. All continuous variables are winsorized at the 1 and 99 percent levels. Appendix B provides a summary of all variables.

Table 10
Tests of Coefficients in Separate Regressions of Degrading Financial Reporting Quality Groups

$DFRQ = \beta_0 + \beta_1 LN\_TA + \beta_2 LN\_BUSSEG + \beta_3 NEG\_ROA + \beta_4 CR + \beta_5 INVREC + \beta_6 Z + \beta_7 BIGN + \beta_8 AUDITOR\_CHG + \beta_9 LIT + \beta_{10} AU9550 + \beta_{11} LN\_AGE + \beta_{12} FOREIGN + \beta_{13} AS5\_404 + \beta_{14} BODSIZE + \beta_{15} DUALCEO + \beta_{16} NAS + \varepsilon$

	(1) VICW	(2) VICW_REST	(3) REST	(1) vs (2) Sig Diff	(1) vs (3) Sig Diff	(2) vs (3) Sig Diff
LN_TA	1.287**	-0.931	-0.973	6.23‡‡	6.13‡‡	0.45
LN_BUSSEG	1.140	1.377	-0.914	1.96	0.46	1.32
NEG_ROA	-0.847	-0.635	1.143	2.68	0.65	1.78
CR	-0.961	-0.935	1.011	2.30	0.99	1.06
INVREC	8.898***	-0.090***	-0.244*	18.61‡‡‡	13.45‡‡	14.79‡‡
Z	1.000	1.000	-1.000	4.82‡	1.74	3.29
BIGN	-0.884	-0.400**	1.149	6.65‡‡	0.21	6.00‡‡
AUDITOR_CHG	-0.735	-0.734	-0.989	0.74	0.39	0.24
LIT	1.233	1.515	-0.736	3.25	2.01	2.71
AU9550	-0.618**	-0.705	1.574*	9.07‡‡	7.22‡‡	4.29
LN_AGE	-0.886	-0.990	1.086	2.57	2.74	0.84
FOREIGN	1.939***	1.191*	1.068	14.29‡‡‡	9.70‡‡	4.18
AS5_404	2.715***	-0.407***	-0.415***	22.18‡‡‡	27.47‡‡‡	32.66‡‡‡
BODSIZE	-0.763***	-0.865*	-0.911	14.70‡‡‡	15.71‡‡‡	5.61‡
DUALCEO	-0.739	-0.659	1.152	4.82‡	1.93	2.15
NAS	-0.153***	-0.715	1.494	8.21‡‡	7.68‡‡	0.56

Notes: Coefficient estimates are from the logistic regression estimation of equation (5). ***, **, and * denote statistical significance at the 0.01 [or 1 percent], 0.05 [or 5 percent], and 0.10 [or 10 percent] levels (two-tailed), respectively, and are derived from test statistics based on robust standard errors. See Table 1 for observation totals for the outcomes. The dependent variable, DFRQ, is one of the three following categorical variables: VICW, VICW_REST, and REST. VICW is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily discloses ICWs in the IPO registration statement, has an unqualified internal control over financial reporting opinion, and does not have a corresponding misstatement for the year mentioned in the internal control over financial reporting opinion. VICW_REST is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily discloses ICWs in the IPO registration statement, has an unqualified internal control over financial reporting opinion, and has a corresponding misstatement for the year mentioned in the internal control over financial reporting opinion. REST is an indicator variable equal to one (and zero otherwise) if the registrant does not voluntarily disclose ICWs in the IPO registration statement, has an unqualified internal control of financial reporting opinion, and has a corresponding misstatement for the year mentioned in the internal control over financial reporting opinion. Coefficient "sig diff" reported at significance levels of ‡‡‡, ‡‡, and ‡ denote statistical significance at the 0.01 [or 1 percent], 0.05 [or 5 percent], and 0.10 [or 10 percent] levels based on chi-square distribution using seemingly unrelated estimation (SUEST). Appendix B provides a summary of all variables.

Table 11
Etregress Treatment Model: Probability of Voluntary ICW Disclosures

TREAT (ICW_REGISTRANT) = $\beta_0 + \beta_1$IND_PRESSURE + β_2NEWCEO + β_3CEOAGE + β_4LN_MV + β_5LIT + β_6LN_TA + β_7BIGN + β_8LN_AGE + β_9VC_BACKED + β_{10}PE_BACKED + β_{11}CARVEOUT + β_{12}NASDAQ + β_{13}GC + β_{14}REST_REGISTRANT + β_{15}LN_BUSSEG + β_{16}FOREIGN + β_{17}GDWLIP + β_{18}WDP + β_{19}AUDITOR_CHG + ε

	(1)
IND_PRESSURE	1.656
	(1.922)*
NEWCEO	0.296
	(2.320)***
CEOAGE	0.000
	(-0.059)
LN_MV	0.144
	(1.780)*
LIT	-0.047
	(-0.326)
LN_TA	-0.106
	(-1.894)*
BIGN	-0.239
	(-1.600)
LN_AGE	-0.006
	(-0.103)
VC_BACKED	-0.047
	(-0.244)
PE_BACKED	0.090
	(0.534)
CARVEOUT	0.114
	(0.500)
NASDAQ	0.038
	(0.264)
GC	0.002
	(0.009)
REST_REGISTRANT	0.860
	(5.068)***
LN_BUSSEG	0.146
	(1.105)
FOREIGN	0.363
	(2.913)***
GDWLIP	-0.003
	(-1.212)
WDP	-0.005
	(-0.200)

AUDITOR_CHG	0.121
	(0.977)
INTERCEPT	-3.978
	(-2.480)***
Wald Chi^2	195.270
Prob > Chi^2	0.000
N	590

Notes: Coefficient estimates are from the linear regression model augmented with an endogenous binary-treatment variable estimation of equation (6) and z-statistics are in parentheses. ***, **, and * denote statistical significance at the 0.01 [or 1 percent], 0.05 [or 5 percent], and 0.10 [or 10 percent] levels (one-tailed), respectively, and are derived from test statistics based on normal standard errors. The dependent variable, ICW_REGISTRANT is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls (material weakness, significant deficiency, or control deficiency) in its registration statement. The variable of interest is IND_PRESSURE, which is the ratio of the number of registrants voluntarily disclosing ICWs in their registration statements for each Fama-French industry classification minus one divided by the total number of IPO registrants in the industry. All continuous variables are winsorized at the 1 and 99 percent levels. Appendix B provides a summary of all variables.

Table 12
Etregress Outcome Model: OLS Regression of Voluntary ICW Disclosures and IPO Offer Prices

$LN\_IPO\_PRICE = \beta_0 + \beta_1 ICW\_REGISTRANT + \beta_2 EPS + \beta_3 BV + \beta_4 NET\_PROCEEDS + \beta_5 UW\_SHARE + \beta_6 BIGN + \beta_7 LN\_AGE + \beta_8 LIT + \beta_9 NEWCEO + \beta_{10} CEOAGE + \beta_{11} LAMDA + YearFE + \varepsilon$

	(1)
ICW_REGISTRANT	0.251
	(2.353)**
EPS	0.055
	(5.419)***
BV	2.271
	(3.032)***
NET_PROCEEDS	-0.009
	(-0.226)
UW_SHARE	0.996
	(4.943)***
BIGN	0.034
	(0.918)
LN_AGE	0.018
	(1.301)
LIT	-0.194
	(-5.814)***
NEWCEO	-0.060
	(-1.450)
CEOAGE	-0.006
	(-2.926)***
LAMDA	-0.121
	(-1.859)*
INTERCEPT	2.878
	(22.843)***
Year Fixed Effects	Yes
Wald Chi^2	195.270
Prob > Chi^2	0.000
N	590

Notes: Coefficient estimates are from the linear regression model augmented with an endogenous binary-treatment variable estimation of equation (7) and t-statistics are in parentheses. ***, **, and * denote statistical significance at the 0.01 [or 1 percent], 0.05 [or 5 percent], and 0.10 [or 10 percent] levels (two-tailed), respectively, and are derived from test statistics based on normal standard errors. The dependent variable, LN_OFFER_PRICE, is the logarithmic transformation of the IPO_PRICE. The variable of interest, ICW_REGISTRANT, is an indicator variable equal to one (and zero otherwise) if the registrant voluntarily disclosed any deficient internal controls (material weakness, significant deficiency, or control deficiency) in its registration statement. All continuous variables are winsorized at the 1 and 99 percent levels. Appendix B provides a summary of all variables.