

Shades of Gray: Internal Control Reporting by Chinese U.S.-listed Firms

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Shades of Gray: Internal Control Reporting by Chinese U.S.-listed Firms

Chinese firms listing in the U.S. via reverse mergers (CRMs) have dominated prior media, regulator and research attention. Yet CRMs have effectively ceased, leaving Chinese firms listing via initial public offerings (CIPOs) as the relevant remaining class of Chinese firms listing on U.S. exchanges. This study documents salient differences between CIPOs, CRMs and U.S.-domiciled U.S.-listed firms by examining Sarbanes-Oxley Act Section 302 and 404(b) ineffective internal control (IIC) and related disclosures that underlie financial reporting quality, with three main sets of findings. First, both CIPOs and CRMs are more likely to report IICs than U.S.-domiciled counterparts. Second, both CIPOs and CRMs are more likely to under-report IICs than U.S.-domiciled counterparts (CIPO for only 302 disclosures). Third, CIPOs are both less likely to report and less likely to under-report IICs than CRMs. These findings clarify and recast prior characterizations of the internal controls underlying the reporting quality of Chinese U.S.-listed firms.

Keywords: Sarbanes-Oxley Act; International Cross-Listing; China; Internal Controls; Chinese U.S.-listed Firms; Reverse Mergers

JEL Classifications: G18, G34, G38, M41, M42, M48

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1. INTRODUCTION

Chinese U.S.-listed firms have attracted considerable media, regulator and research attention amid allegations of financial reporting weaknesses.¹ To date, attention has focused on Chinese firms listing in the U.S. via reverse mergers (CRMs)² rather than via initial public offerings (CIPOs). Yet CIPOs merit separate consideration for several reasons. First, prior findings regarding the financial reporting of CRMs may not generalize to CIPOs due to differences in firm characteristics and listing scrutiny. Second, new CRM listings have virtually ceased as CIPO listings continue, leaving CIPOs as the relevant remaining class of Chinese U.S. listers (Shih 2015; Thomas and Barreto 2014). Third, the market value of CIPOs far exceeds that of CRMs.³ Finally, whereas prior evidence finds CRM financial reporting concerns “spilled over” to CIPOs (Ang, Jiang, and Wu 2014; Darrough et al. 2015), little evidence exists regarding internal control differences that may help explain these findings. This study compares the internal control reporting of CIPOs with that of CRMs and U.S. domiciled U.S.-listed firms to document salient shades of gray in internal controls that extend and re-cast prior findings regarding the financial reporting quality of Chinese U.S.-listed firms.

We examine both Sarbanes-Oxley Act (SOX) Section 302 and Section 404(b) ineffective internal control reports (hereafter 302 and 404(b), respectively, and IICs collectively), which allows for assessments of under-reporting and a larger sample size. Whereas 404(b) reports are annual disclosures that are the

¹ Representative headlines include “Chinese stock scams are the latest U.S. import” (Vlastelica & Bases, *Reuters*, May 11, 2011), “China’s U.S.-listed stocks are junk” (Stephen, *Market Watch*, July 10, 2011), “Falling out of love with China” (Sternberg, *Wall Street Journal*, November 17, 2011). In 2010, the PCAOB drew their attention to the auditors of CRMs in both a Staff Audit Practice Alert and through a meeting of the Board’s Standing Advisory Group (PCAOB 2010). See Section 5 for a discussion of heightened scrutiny of Chinese U.S.-listed firms beginning in 2010.

² In our study period, Chinese firms have constituted fully half of U.S. foreign initial public offerings and over 80 percent of foreign reverse merger listings (Gao, Ritter, and Zhu 2013; Givoly, Hayn, and Lourie 2014). A reverse merger occurs when an operational private company acquires a publically listed shell company, with little or no assets, and then injects private company assets into the public shell, effectively circumventing the IPO vetting process. In addition to this lower oversight, reverse mergers are also faster to complete and less expensive than listings via IPOs. See Lee, Li, and Zhang (2015) and Chen, Cheng, Lin, Lin, and Xiao (2016) for further background on reverse mergers. Prior studies that focus primarily on CRMs include Lee et al. (2015), Darrough, Huang, and Zhao (2015), Chen et al. (2016), and Mao and Ettredge (2016).

³ Our sample, which is biased toward including relatively high value CRMs, shows CIPOs to have 8.5 times higher average market value than CRMs, and these size differences preceded the fraud crisis beginning in 2010.

statutory responsibility of external auditors, 302 reports are filed quarterly and are the statutory responsibility of firm managers. 302 reports provide greater coverage of Chinese U.S.-listed firms, since approximately half are non-accelerated SEC filers, and thus exempt from 404(b) reporting examined in most prior studies.

To explain the IIC reporting patterns of CIPOs, CRMs and matched U.S.-domiciled U.S.-listed counterparts, we apply predictions from cultural influence and reputational bonding theory. When applied to Chinese U.S.-listed firms, cultural influence predicts that they will report more IICs, and under-report more IICs, than comparable U.S.-domiciled U.S.-listers.⁴ When applied to CIPOs that self-select to list via more arduous “front door” listing procedures, reputational bonding predicts lower CIPO IIC reporting, and lower under-reporting, in comparison to CRMs that use expedited “back-door” listings. As explained in Section 2, countervailing institutional features of the China context render predictions of reputational bonding more nuanced than for non-Chinese foreign U.S.-listers previously studied.

We control for firm characteristics when testing for IIC reporting and under-reporting using the determinant model of Ashbaugh-Skaife, Collins, and Kinney Jr (2007) (ACK) and matched sample analyses for 2008–2012, with several new findings.⁵ First, consistent with cultural influence predictions, we find that both CIPOs and CRMs are more likely to report IICs than domestic public U.S. firms (H1). Second, using an under-reporting measure following Gong, Ke, and Yu (2013), we find that both CIPOs and CRMs are more likely to under-report IICs than U.S.-domiciled U.S.-listed firms (H2), and CIPOs are only more likely to under-report 302 disclosures consistent with auditor influence on the decision to under-report. Third, we find that CIPOs are less likely than CRMs to report IICs (H3). Fourth, we document that CIPOs are less

⁴As highlighted by the Public Company Accounting Oversight Board (PCAOB) during the scrutiny period, “weak internal controls and lack of robust governance mechanisms have been observed in companies in certain emerging market countries. This may stem from a lack of familiarity in local cultures with certain governance concepts, such as prohibition of self-dealing, even where similar legal concepts exist. For example, such a culture might provide opportunities for management to influence other senior company officials or various third parties to provide false or misleading information to the company's auditors. If criticizing or questioning a figure of authority is contrary to the local culture, the company's employees may be hesitant to express any concerns about management's actions to an auditor. Such an environment can provide additional opportunities for management to override controls or intentionally misstate the financial statements” (page 8, PCAOB SAPA No. 8, 2011). See related discussion in Section 6.

⁵ After 2012, there are few new CRMs, and many existing CRMs ceased to file with the SEC, either by going private or otherwise going “dark”, with Robertson (2015) characterizing CRMs as fading into history.

likely than CRMs to under-report IICs for 404(b) disclosures (H4). Tests for the effect of regulator and media scrutiny on IIC reporting and descriptive data regarding IIC types and auditors provide additional support for these findings. Thus, this study reveals salient differences in internal controls underlying the financial reporting quality of CIPOs versus the previously more studied CRMs, and between CIPOs, CRMs and their U.S.-domiciled U.S.-listed counterparts.

These findings extend several research streams. First, they document clear differences in IIC reporting regarding internal controls that underlie financial reporting quality for previously studied CRMs and CIPOs, which now constitute the relevant remaining class of Chinese foreign listers. Second, evidence of IIC reporting and under-reporting by *both* CIPOs and CRMs compared with matched U.S.-domiciled U.S. listers helps explain prior spillover, short-selling, and incomplete investor discrimination effects (Ang et al. 2014; Darrrough et al. 2015), and helps to answer Ang et al.'s (2014, 2) question of "Why did US investors and analysts indiscriminately dump all Chinese shares?" as investors could not have easily differentiated between "good and bad apples". These findings further help explain Lee et al.'s (2015) findings regarding CRM performance compared with U.S. counterparts since *reported* performance is a function of financial reporting quality. Third, our finding that CRMs are more likely to report IICs complements Srinivasan, Wahid, and Yu's (2014) inference that the use of restatements to infer CRM 302 under-reporting is problematic (Mao and Ettredge 2016). Fourth, our findings have regulatory implications in documenting differences between CIPOs and CRMs in both IIC reporting and under-reporting, and in highlighting the importance of auditor assessments of manager-disclosed IICs in light of 404(b) exemption for foreign non-accelerated filers, particularly for Chinese U.S.-listed firms.

Our results also provide evidence on whether SOX internal control provisions have been effective in meeting their stated goals for Chinese U.S.-listed firms.⁶ In particular, our findings of higher IIC reporting and under-reporting by both CIPOs and CRMs compared with U.S.-domiciled U.S. listers indicate that

⁶ Per PCAOB member Jeannette Frazel, "The Sarbanes-Oxley Act was enacted to provide better protection for investors by improving the reliability of corporate financial reporting and disclosures under the securities laws. Continued research and analysis are important to assess how breakdowns occurred in auditing and governance systems" (2011, 924).

SOX provisions have been to some degree ineffective for Chinese listers. Our auditor evidence complements previously observed associations between auditor quality and internal controls (Ashbaugh-Skaife et al. 2007; Ettredge, Heintz, Li, and Scholz 2011) in justifying PCAOB concerns regarding the audit quality of Chinese U.S.-listed firms (PCAOB 2010). With Chinese firms again exhibiting underperforming shares in the U.S. (Russolillo and Driebusch 2017) and increasingly listing on other stock exchanges, including via reverse mergers on China's own exchanges (Ren 2016; Yu 2016), our findings will help inform research, audits, regulations, and interpretations of the financial reporting of these prominent and controversial listers in the U.S. and globally.

In Section 2, we present the context and theory that motivate our hypotheses. In Section 3, we describe our hypothesis tests. In Section 4, we present sample selection procedures and descriptive statistics, and in Section 5, we discuss the results. Section 6 presents supplementary analyses and Section 7 provides a concluding discussion.

2. BACKGROUND, THEORY AND HYPOTHESES DEVELOPMENT

U.S. listings by Chinese domiciled firms began in earnest in the early 1990s. By the mid-2000s, this “coming out party” (Hennock 2004) had attracted considerable U.S. investor interest in stocks that ostensibly combined China's rapid growth, international diversification and financial reporting overseen by the U.S. Securities and Exchange Commission (SEC). Chinese firms were drawn to U.S. stock markets for capital, liquidity, and listing provisions unavailable in China⁷, and soon constituted fully half of U.S. foreign initial public offerings and over 80 percent of foreign reverse merger listings (Gao et al. 2013; Givoly et al. 2014). Yet these apparent benefits were overtaken in 2010 by media scrutiny and regulator accusations of financial reporting improprieties by Chinese U.S.-listed firms (Holmes 2010), leading the Bloomberg China-U.S. Equity Index to plunge 58.5 percent over a five-and-a-half month period (Yuk and Massoudi

⁷ For example, dual-class shares are not presently permitted by Hong Kong, Shanghai and Shenzhen stock exchanges, which was a deciding factor in Alibaba's decision to list in the U.S. instead of in China.

2013). These financial reporting concerns brought Chinese U.S.-listed firms, auditors, exchanges and regulators to loggerheads as Chinese firms' access to capital plummeted (Ang et al. 2014). Related reporting and regulatory responses reverberate to the present, including U.S. de-listings by CRMs, re-listings in China stymied by IPO restrictions and high volatility (Osawa and Wei 2015), a Chinese government-mandated freeze on and subsequent promotion of IPO listings (Chen and Zhang 2017; Ren 2016; Yu 2016), and market interventions leading to a nearly 50 percent drop in the Shanghai index during 2015–16, all of which benefits from evidence regarding internal controls and internal control reporting by CIPOs and CRMs.⁸

CIPO and CRM Literature

Prior evidence regarding the financial reporting quality of Chinese U.S.-listers has focused primarily on CRMs. Chen et al. (2016) find weaker financial reporting quality and corporate governance for CRMs compared with matched U.S. IPOs and CIPOs, but do not examine CIPOs separately. Mao and Ettredge (2016) find CRMs to have a higher likelihood of filing adverse 302 reports but no difference in CRM likelihood to file an adverse 302 report compared with other U.S.-listed firms when internal control weakness exists as proxied by a subsequent restatement. However, Srinivasan et al. (2014) find evidence of opportunistic under-reporting of restatements by foreign listers, which together with a higher baseline of 302 reporting by CRMs, confounds the use of restatements as a benchmark for 302 under-reporting. Lee et al. (2015) find the performance and survival of CRMs to exceed that of U.S. reverse merger firms (USRMs) during three years following listings. However, Lee et al. do not examine CIPOs, and because poor CRM financial reporting quality could have boosted reported performance and delayed de-listings, an alternative explanation is that investors were less able to distinguish good from bad apples as characterized by Ang et al. (2014). As such, little prior evidence exists in the literature regarding the internal controls and financial reporting quality of CIPOs separate from CRMs.

⁸ Representative headlines include “China Reconsiders the Homecoming Party” (Cao and Xie 2016) and “Chinese Regulator Probes Six Companies in IPO Fraud Crackdown” (Gao 2016).

We extend this literature by comparing the 302 and 404(b) IIC disclosures of CIPOs, CRMs, and domestic U.S.-listed matched counterparts, explicitly testing for differences in IIC reporting and under-reporting and for the effects of increased media and regulatory scrutiny. As corroborating evidence, we also document their auditors and types of IICs disclosed. Our study thus helps address whether prior findings for CRMs apply to Chinese U.S.-listed firms that are increasingly CIPOs, and whether differences between CIPOs and CRMs can help explain prior findings and questions regarding the financial reporting of Chinese U.S.-listed firms (e.g., Ang et al. 2014; Darrough et al. 2015).

IIC Reporting Requirements

Sections 302 and 404 of SOX substantially enhanced U.S. financial reporting requirements regarding internal controls (Engel, Hayes, and Wang 2007; Zhang 2007). Specifically, Section 302 requires managers of U.S.-listed firms to assess and report their firms' IICs quarterly to the SEC. Section 404(a) requires managers to annually document, test, conclude, and report on the effectiveness of internal controls. Section 404(b) requires external auditors to assess and attest to their clients' internal controls annually. In this study we examine both 302 reports, which by nature are subject to less auditor oversight, and 404(b) attestation reports, so as to provide evidence regarding external auditor influence.⁹ Legislators and regulators envisioned that the resulting higher quality internal controls induced by SOX Section 302 and 404 reporting would enhance financial reporting quality and regulatory compliance (SOX, 2002). Subsequent research indicates that effective internal controls are associated positively with financial reporting quality (Goh and Li 2011) and accruals quality (Doyle, Ge, and McVay 2007b; Ashbaugh-Skaife, Collins, Kinney, and LaFond 2008). However, differences in cultural, institutional, and legal contexts may

⁹ Although 302 reports are arguably “a function of managers' diligence in identifying weaknesses and in their discretion over disclosure” (Beneish, Billings, and Holder, 2007, p. 668), 302 reports are more timely than 404(a) reports and provide information regarding quarterly internal control issues, which can be remediated by year end, resulting in a clean 404(a) report. In addition, fourth quarter 302 reports are found to be consistent with 404(a) reports in a prior study (Mao and Ettredge 2016) and in this study's sample. Further, regulator guidance in 2007 has provided clarity for 302 reporting and may be the reason for an increase in 302 IIC reporting (Munsif, Raghunandan, and Rama 2013).

induce managers of Chinese U.S.-listed firms to interpret and implement IIC reporting requirements differently than U.S.-domiciled and listed counterparts as we detail next.

Cultural Influences on IIC Reporting

Prior research confirms that national culture is an informal institution that influences financial reporting practices (Salter and Niswander 1995) beyond formal institutional environment effects (Peng, Wang, and Jiang 2008). Specifically, collectivistic cultures like China's (Tu, Lin, and Chang 2011; Hofstede 2007) have been found to have higher differential treatment of in-groups and out-groups. Thus, Chinese managers are more likely to favor the interests of the organization or concentrated owners (their in-group) relative to foreign investors (their out-group), and, they are likely to place less emphasis on the importance of financial disclosures and transparency for such investors as suggested by Chow, Deng, and Ho (2000) and Triandis, Bontempo, Villareal, Asai, and Lucca (1988). Cullen, Parboteeah, and Hoegl (2004) present large-scale multinational survey evidence that national cultural values of individualism and achievement (universalism and pecuniary materialism) reduce (increase) a manager's tendency to justify ethically questionable behaviors; Cullen et al. (2004) find similar effects for the degree of educational attainment. Given that China is generally less individualistic culturally, with less developed investor protection provisions, these prior findings suggest that Chinese managers may be less attuned to SOX's internal control reporting objectives, requirements and enforcement provisions regarding internal control systems and IIC disclosures, which may lead to more underlying IICs and less incentive to report them.

A complementary cultural aspect that can influence IIC reporting is advocacy participation. Advocacy participation refers to a willingness to speak out to effect beneficial change in an organization (Van Dyne and LePine 1998). Although advocacy participation is commonly viewed as constructive in Western organizations (Van Dyne and LePine 1998; Turnipseed and Rassuli 2005), Farh, Chen-Bo, and Organ (2004) find it largely absent in organizational citizenship behaviors in Chinese companies. Farh et al. (2004) argue that China's interpersonal relationships are more characterized by single group networks that make conflict riskier because escalation can lead to social alienation. Relatively lower levels of

advocacy participation in Chinese firms may thus reduce the effectiveness of SOX in incentivizing strong internal controls, again indicating more IICs and less incentive to report them.

Applying these insights from cultural influence research, we propose as a framing hypothesis in alternate form that both CIPOs and CRMs are more likely to report IICs than their U.S.-domiciled counterparts, *ceteris paribus*:

Hypothesis 1. CIPOs and CRMs are more likely to report IICs than U.S.-listed U.S.-domiciled firms.¹⁰

Cultural and Institutional Influences on IIC Under-Reporting

Following from the discussion and evidence above, cultural factors that may lead to weaker internal controls may similarly motivate under-reporting of IICs once discovered, although prior evidence is again limited for CIPOs. For example, Srinivasan et al. (2014) provide evidence that weak home-country investor protections can lead to opportunistic under-restating of financial reports. Using a sample of U.S. firms that restated their financial results, Rice and Weber (2012) show over half under-reported 404(b) IICs, but they did not specifically examine Chinese U.S.-listed firms. Gong et al. (2013) investigate the effect of excess voting rights over cash flow rights of concentrated owners on IIC misreporting by cross-listed firms in weak institutional environments. With only seven Chinese firms in their sample, they do not draw inferences regarding their IIC under-reporting, nor do they examine the effect of their listing methods.

An institutional feature applicable to Chinese U.S.-listers in particular is historically lower enforcement risk due to the barriers U.S. regulators have faced in conducting China-related investigations. This condition is exemplified by the U.S.-China Economic and Security Review Commission's 2005 annual report, which explicitly recommended to the U.S. Congress that the SEC work with foreign regulatory counterparts to enhance enforcement of securities regulations (USCC 2005). However, the SEC took no immediate action to protect investors from the predicted systemic risk amid accumulating complaints

¹⁰ Mao and Ettredge (2016) find CRMs to be more likely to disclose 302 IIC reports than other listed firms. We likewise examine CRMs when testing Hypothesis 1 both to benchmark our findings with prior results and to validate that this relation for 302 disclosures is also associated with 404(b) reports that we also examine.

regarding the financial reporting of Chinese U.S.-listed firms. When the SEC began to discipline Chinese U.S.-listed firms in 2010 (Eden and Holmes 2010), the Chinese Securities Regulatory Commission (CSRC) responded by prohibiting their auditors from providing requested audit documents to SEC fraud investigations, thereby impeding enforcement (Shih 2013). Although the PCAOB and the CSRC signed an agreement in 2013 allowing the PCAOB to access certain audit documents, which are first CSRC-screened, access is still incomplete and tenuous (Commons and Goldman 2014; PCAOB 2016). This resulting weaker enforcement of nominally strong financial reporting requirements for Chinese U.S.-listed firms may have reduced managerial incentives to self-report IICs under Section 302 relative to perceived enforcement exposure under Section 404(b) for their auditors. We utilize these differential reporting incentives between SOX 302 and 404(b) as a design feature below. Applying this reasoning, we provide evidence regarding potential under-reporting of IICs by Chinese U.S.-listed firms by testing the following hypothesis, *ceteris paribus*:

Hypothesis 2. CIPOs and CRMs are more likely to under-report IICs than U.S.-listed U.S.-domiciled firms.

If Chinese U.S.-listed firms under-report extant IICs for whatever reasons, including cultural influence, weaker corporate governance, unfamiliarity with U.S. reporting provisions, and/or perceptions of weak prior enforcement as discussed above, it will bias findings against the hypothesized relations in H1. As such, evidence that supports H2 by construction also provides support for H1.

Reputational Bonding Theory

Reputational bonding theory further supports distinctions between CIPOs and CRMs in internal control system design and reporting. Specifically, Siegel (2005) proposes a variant of institutional bonding that suggests cross-sectional variation in IIC reporting based on the reputational benefits of an IPO listing. Siegel argues that when regulatory stringencies are only weakly enforced, legal bonding is not effective, yet foreign listers can still benefit from cross-listing by building their reputation by self-selecting to make additional disclosures. Thus, whereas the institutional bonding hypothesis framed in legal terms predicts that there may be no difference between CIPO and CRM IIC reporting and under-reporting in the absence

of rigorous enforcement, firms may be motivated by reputational benefits instead. Because IPOs are more visible and include underwriter certification and exchange screening and scrutiny, firms motivated by reputational bonding will more likely self-select to list via IPO than via reverse merger. Consistent with Jensen's (1993) assertion that the two key forces protecting investors are the institutional environment and a firm's internal control systems, CIPOs can thus be expected to implement more effective internal controls and reporting. By comparison, CRMs that have self-selected a less visible and expedited listing method less conducive to reputational signaling will have less incentive toward strong internal controls and transparent IIC disclosures. Thus, reputational bonding suggests that extant research on CRM financial reporting cannot be generalized to CIPOs, and that CIPOs are likely to both have better internal controls and to be less likely to under-report internal controls.

However, there are also countervailing forces related to China that may influence the listing decision of Chinese firms beyond reputational bonding motivations. Specifically, Chinese firms may have compelling alternative reasons for accessing U.S. capital markets, including China's multiple freezes on IPOs (Li 2013), generally slower IPO processing (Ren 2014), and liquidity constraints encountered in China's capital markets (Thomas and Barreto 2014). CRMs also have unique motivations for reverse merger listings that are not related to internal controls: firms in sensitive industries that use variable interest entity (VIE) structures to circumvent restrictions on foreign ownership may choose a reverse merger to avoid making required IPO disclosures that may draw attention from Chinese regulators wary of "creative compliance" with foreign investment laws (Gillis and Lowry 2014). Thus, whereas reputational bonding predicts lower IIC reporting and under-reporting by CIPOs than by CRMs, China's unique market and regulatory motivations make this an empirical question. We assess potential reputational bonding differences between CIPOs and CRMs in IIC reporting and under-reporting using bi-directional hypotheses H3 and H4, respectively, both *ceteris paribus*.

Hypothesis 3. IIC reporting likelihood differs between CIPOs and CRMs.

Hypothesis 4. IIC under-reporting likelihood differs between CIPOs and CRMs.

3. METHOD AND MEASURES

IIC Dependent Variables

We use 302 and 404(b) disclosures to compare the likelihood of CIPOs, CRMs, and U.S.-domiciled firms to report IICs. This contrasts with a focus in prior research on 404(b) reporting by the reasoning that audited reports provide more credible evidence (e.g., Kim, Song, and Zhang, 2011; Rice and Weber 2012; Rice, Weber, and Biyu, 2015). However, little direct evidence exists regarding whether 404(b) disclosures provide more credible evidence of IICs,¹¹ and conversely, Beneish et al. (2008) find information content for *only* 302 reports in market reaction tests of 302 and 404(b) reports. Our sample timeframe is 2008–2012, which by design choice follows an initial learning period and release of clarifying implementation guidance in PCAOB Audit Standard No. 5, released in July of 2007, and SEC Commission Guidance Regarding Management’s Report on Internal Control over Financial Reporting, released in June of 2007 (PCAOB 2007; SEC 2007). The guidance would likely have been understood and adopted by manager and auditor IIC reporting for 2008.

Examining both 302 and 404(b) disclosures provides several design advantages. First, because 302 reporting is quarterly versus annually for 404(b) reporting, 302 reports provide more timely indicators of IICs. Second, a comparison of 302 and 404(b) reports enables a comparison of management versus auditor reporting, thus helping reveal the effects of auditor influence on IIC under-reporting. Tellingly, studies find that for 302 filers, managers tend to report fewer IICs than auditors, and auditors often override management assessments of IICs (Bedard and Graham 2011; Munsif, Raghunandan, and Rama 2013). Third, given the 2010 Dodd-Frank Act’s (Dodd-Frank) provision permanently exempting non-accelerated filers from 404(b) auditor reporting, management reports are the only indicator of IICs for almost half of Chinese U.S.-listed firms. We measure IICs using indicator variables for both 302 and 404(b) disclosures: 302 is an indicator set to “1” when there is a report of IICs under SOX 302 provisions by management during any quarter of a

¹¹ In their review of the first decade of SOX research, Coates and Srinivasan (2014) do not mention any studies comparing 302 and 404(b) disclosures.

fiscal year; *404(b)* is an indicator set to “1” when there is a report of IICs under SOX 404(b) provisions by the auditor during a year.

Tests of IIC Reporting (H1 and H3)

In our empirical tests, we control for firm characteristics that influence IICs in two ways. First, we use a modified ACK internal control deficiency determinant model. Second, we use a matched control sample of firm-years, with matching procedures as described below.

Modified ACK model. We employ the following ACK model to control for determinants related to IICs (see Appendix 1 for variable definitions and constructions):

$$\begin{aligned}
 302 / 404(b) = & \beta_0 + \beta_1 CIPO + \beta_2 CRM + \beta_3 USIPO + \beta_4 USRM + \beta_5 RANKGROWTH & (1) \\
 & + \beta_6 BUSSEGS + \beta_7 FOREIGNSALES + \beta_8 RESTRUCTURE + \beta_9 M\&A \\
 & + \beta_{10} BIG4AUD + \beta_{11} INVENTORY + \beta_{12} LNASSETS + \beta_{13} RANKZ \\
 & + \beta_{14} LOSS + \varepsilon
 \end{aligned}$$

Significant and positive β_1 and β_2 coefficients indicate a higher likelihood of reporting IICs (H1). We assess IIC reporting differences between CIPOs and CRMs (H3) by testing whether β_1 equals β_2 in equation (1) above. We deviate slightly from ACK’s model 1 to reflect our research focus on the IICs of Chinese U.S.-listed firms. Specifically, we add *CIPO* and *CRM* indicators and test for a significantly positive β_1 on *CIPO* and β_2 on *CRM* to test hypothesis H1. Our measures of *CIPO*, *CRM*, *USIPO*, and *USRM* are indicators of listing since 2000, and control for a recent listing effect, reflecting prior evidence that firms that list by IPO tend to differ from those that list by reverse merger (Adjei, Cyree, and Walker 2008; Gleason, Rosenthal, and Wiggins III 2005). ACK employ data from three consecutive firm-years for the *GROWTH*, *RESTRUCTURE*, *M&A*, and *LOSS* measures; to lessen the resulting loss of firm-years, we employ one-year measures (with qualitatively similar findings for three-year measures as in ACK). We omit ACK’s measure of prior year auditor resignation because, in our setting, a large proportion of CIPO and CRM firm-years contain auditor changes commensurate with going public and/or a U.S. listing (Coates and Srinivasan

2014)¹². We add *BIG4AUD* to the ACK model to control for the effects of auditor quality on IICs. Because IICs may be concentrated in industries and on exchanges that may be correlated with our Chinese firm sample, we control for industry and exchange fixed effects. To mitigate the effect of outliers, we winsorize the top and bottom one percent of all continuous variables.

Matched regression. In addition to the ACK model, we employ a matching algorithm to further control for other determinants of IICs. Our algorithm matches each Chinese firm-year with a U.S.-listed domestic firm-year with the same year, listing exchange (NYSE/AMEX, NASDAQ, OTC, pink sheets), industry (Fama-French 48), and then nearest total assets,¹³ without replacement, similar to Lang, Lins, and Miller (2003); Lee et al. (2015) and Chen et al. (2016). We match on exchange because exchange is an endogenous choice that can capture unobservable characteristics such as motivation to avoid listing requirements (in the case of a lower quality exchange), or the desire for visibility or liquidity (in the case of a higher quality exchange) (Baker and Johnson 1990; Corwin and Harris 2001). For example, Choi, Kim, Liu, and Simunic (2009) find that audit quality for cross-listed firms (proxied by audit fee premium) was incrementally higher for those listed on a major exchange, and Shi, Magnan, and Kim (2012) find cross-listers on major exchanges to be more likely to issue management earnings forecasts. We match by industry because firm characteristics, such as fraud incidence (Beasley, Carcello, Hermanson, and Lapides 2000), can vary by industry.

Tests of IIC Under-reporting (H2 and H4)

Past measures of IIC under-reporting include restatements (Rice and Weber 2012; Mao and Ettredge 2016), patterns of reporting (Kim et al. 2011) and predicting IICs using a discriminant model (Gong et al. 2013). The use of restatements in our setting is problematic, as indicated by Srinivasan et al.

¹² Correspondingly, an internal control weakness determinant model by Doyle, Ge, and McVay (2007a), contemporary to ACK, does not include auditor changes in its model.

¹³ The matching algorithm is performed on the 302 filer and 404(b) populations separately. We match by total assets rather than market value of equity given evidence that foreign reverse mergers are discounted (Givoly et al. 2014), and that the spillover effects of alleged accounting scandals to nonaccused Chinese U.S.-listed firms were broad (Ang et al. 2014; Darrough et al. 2015) and persists at least a year (Darrough et al. 2015). We perform a robustness check with qualitatively similar but somewhat weaker results, commensurate with market value of equity providing generally smaller U.S.-domiciled matches.

(2014), who find that U.S.-listed foreign firms are less likely to restate earnings, particularly when they are from weak legal environments. Under-reporting measures based on reporting patterns can be confounded by underlying IIC incidence. For example, a higher (lower) percentage of firms exhibiting years in which 404(b) IICs are preceded by no 302 IICs may simply be due to a higher (lower) incidence of underlying IICs for the subgroup, which mechanically makes this condition more (less) likely, rather than due to management reporting choices. For these reasons, we follow Gong et al. (2013), which investigates IIC reporting by cross-listed firms in two stages. In a first stage, they predict IIC using the coefficients from ACK's estimation. In a second stage, they test for significant effects of ownership structure and institutional environment on predicted IIC reporting. In our first stage, we similarly model the likelihood of having IICs by converting equation (1) into a determinant model by eliminating the variables of interest.¹⁴ Equation (2) is similar to ACK's internal control *discovery* model (their model 1). We also add exchange fixed effects to control for firm characteristics related to exchange:

$$302 / 404(b) = \beta_0 + \beta_1 GROWTH + \beta_2 BUSSEGS + \beta_3 M\&A + \beta_4 RESTRUCTURE \quad (2)$$

$$+ \beta_5 BIG4AUD + \beta_6 LNASSETS + \beta_7 RANKZ + \beta_8 LOSS + \varepsilon$$

Estimating equation (2) for our full sample of 302 and our subsample of 404(b) firm-years, we predict the likelihood of an IIC report for each firm (*UNDERREPORT_IIC*). We then apply a second-stage ordinary least squares regression of *UNDERREPORT_IIC* on incentives to *disclose* IICs. We estimate this second stage on the subset of firms that did not report an IIC (i.e., *302/404(b)* is equal to zero) since we are interested only in firms that under-report.¹⁵ The second-stage model thereby tests for differential under-

¹⁴ We do not use ACK's coefficients as in Gong et al. (2013) because ACK's estimation is for a time period immediately after the passage of SOX during a time of adoption experimentation. Gong et al.'s study is similarly during the period of initial SOX adoption. Because our setting follows the initial adoption period of SOX as a design feature, including the issuance of clarifying guidance (PCAOB 2007), adoption of ACK's coefficients would be inappropriate. Therefore, we run our ACK-based first stage model to obtain *PREDICTED_IIC*.

¹⁵ Gong et al. (2013) construct a misreport measure (*ICD_MISREPORT*) that includes both under- and over-reporting states of ineffective internal controls (they term internal disclosure controls ICDs). In our notation, their *ICD_MISREPORT* is equal to *UNDERREPORT_IIC* minus *302/404(b)*. Their *ICD_MISREPORT* has a bimodal distribution that ranges between -1 to +1, and they run their analysis with their full sample. Because our treatment firms have dramatically higher likelihood of reporting IICs, in our setting, the construction of Gong et al.'s (2013) *ICD_MISREPORT* measure would generate a significantly more negative *ICD_MISREPORT* measure due to disproportionate Chinese-firm clustering in the first peak of the bimodal distribution (*302/404(b)* equal to 1). Therefore, employing their *ICD_MISREPORT* measure on our whole population would confound our ability to

reporting of only a subset of our treatment firm-years with clean IIC reports, while controlling for other incentives to disclose IICs. Testing hypothesis H2 takes the following form:

$$\begin{aligned} \text{UNDERREPORT_IIC} = & \beta_0 + \beta_1 \text{CIPO} + \beta_2 \text{CRM} + \beta_3 \text{USIPO} + \beta_4 \text{USRM} + \beta_5 \text{BIG4AUD} + \beta_6 \text{DEBT} \quad (3) \\ & + \beta_7 \text{SEO} + \beta_8 \text{ROA} + \beta_9 \text{LITIGATION} + \varepsilon \end{aligned}$$

A significant and positive β_1 and β_2 would support hypothesis H2 for CIPOs and CRMs, respectively. We assess differential CIPO and CRM under-reporting (H4) by testing whether β_1 equals β_2 in our estimates of equation (3). ACK include four measures to model IIC disclosure incentives: we retain their controls for *BIG4AUD* and *LITIGATION*, but omit concentration of institutional ownership and restatements for three reasons. First, concerns regarding these measures as reviewed by Leone (2007); second, to avoid possible differences in institutional ownership among foreign listers; and third, in view of Srinivasan et al.'s (2014) finding of opportunistic under-restating by foreign listers. We also control for firm performance (*ROA*) and add indicators of future year debt issuance and seasoned equity offerings (*DEBT* and *SEO*) to control for incentives to disclose IICs.¹⁶

4. SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

Sample Selection

Our treatment sample of Chinese U.S.-listed firms is comprised of those that first listed in the U.S. either by IPO or by reverse merger during the period 2000–2012. Table 1 summarizes sample firm identification and data collection sources, and resultant firm-year sample sizes, and details of our sample construction are provided in Appendix *Sample selection*.

***** Table 1 about here *****

investigate under-reporting. Since our under-reporting research question involves the second peak of the *ICD_MISREPORT* distribution (*302/404(b)* equal to 0), we investigate only potential under-reporters (where *302/404(b)* equal to 0).

¹⁶ Our results are not sensitive to the inclusion of these additional control variables.

We collected requisite firm-year data from Compustat and Audit Analytics for the years 2008–2012. We did not include firm-years prior to 2008 due to the regulatory clarification process from the time of SOX adoption through the PCAOB’s Audit Standard No. 5 at the end of 2007 (Coates and Srinivasan 2014). Further, we excluded firm-years with less than \$20 million in revenues, firms in financial industries (SIC codes 6000–6999), and the twelve dual-listed firms. Our findings are not sensitive to these selection criteria (see robustness checks in Section 6). Panel B of Table 1 presents our resulting 302 filer sample, which is comprised of 374 firm-years for 111 CIPOs and 448 firm-years for 144 CRMs between 2008–2012, inclusive. The sampling procedure substantially reduces the number of USRM observations due to variable requirements (by 42 percent) and minimum revenue size \$20 million (by 52 percent), which documents fundamental differences between USRMs and CRMs that reinterpret prior findings that use USRMs as a control group (Lee et al. 2015; Mao and Ettredge 2016). Control firms are U.S.-domiciled U.S.-listed firms with available data in the Compustat and Audit Analytics databases. Our 404(b) filer sample, a subsample of the 302 filer sample, is presented in panel C and shows a reduced sample across the board, but notably, the CRM sample has the largest reduction.

Descriptive Statistics

Descriptive statistics are provided in Table 2 for Chinese and U.S.-domiciled firm-years. Panel A contains descriptive statistics and univariate tests¹⁷ of differences for our sample of 302 filer firm-years. The 33.8 percent incidence of 302 IIC disclosures in the Chinese sample is four times the incidence for U.S. domestic 302 filers ($p < 0.01$). Chinese firms also exhibit significantly higher revenue growth, fewer business segments, lower inventory and less foreign income, fewer merger and acquisition and restructuring activities, as well as fewer prior-year losses and higher Altman (1968) Z-scores (where bankruptcy risk is lower as Z-score rises). Only 45.6 percent of Chinese U.S.-listed firms use Big-4 auditors compared with 73.9 percent for U.S.-domiciled firms ($p < 0.01$).

¹⁷ For continuous variables, we perform *t*-tests; for indicator variables, we provide chi-square statistics. We also perform the non-parametric Wilcoxon rank-sum test (untabulated) which shows no difference to the *t*-tests in significance, except the Wilcoxon test significance level for *BUSSEGS* is $p < 0.05$ and $p < 0.10$ for panels B and C, respectively.

Descriptive statistics and univariate tests for the 404(b) filer subsample are provided in panel B (Table 2). The Chinese and U.S. firm-year observations decline by 52 and 20 percent, respectively, thus corroborating our design choice to examine both 302 and 404(b) disclosures. Among 404(b) filers, the Chinese U.S.-listed firm-year incidence of *404(b)* IIC disclosures is five times that for domestic U.S.-listed firm-years, a higher magnitude than the fourfold Chinese firm-year incidence of *302* IIC disclosures over its U.S. counterpart incidence in panel A. In general, the difference in the levels of control variables between the Chinese firm-years and U.S. firm-years remain generally significant.

In panel C (Table 2), we compare CIPOs and CRMs. The incidence of CRM *302* IIC disclosures is three times that of CIPOs ($p < 0.01$), providing univariate support for H3. Our sample CIPO firm-years are on average more than eight times the size of CRMs when measured by *MVE*, but the magnitude of this difference is reduced when measured by total assets (both $p < 0.01$). Compared with CRMs, CIPOs have fewer business segments, less inventory, and higher incidences of *M&A* and *RESTRUCTURE*. *RANKZ* and *GROWTH* are not significantly different between the two groups. Importantly, 90 percent of CIPO firm-years have Big-4 auditors, compared to only 9 percent for CRMs.

Pearson correlations for the 302 and 404(b) filer populations (untabulated¹⁸) show that there is no significant multicollinearity. In summary, the univariate tests in Table 2 indicate that Chinese U.S.-listed firms are more likely to report IICs (H1) and differ significantly in other regards from U.S.-domiciled firms. Further evident are within-group differences by listing method between CIPOs and CRMs, both in IIC reports (H3) and in firm characteristics. We examine IIC disclosures while controlling for differences in firm characteristics in the following section.

***** Table 2 about here *****

¹⁸ All untabulated tests are available from the authors upon request.

5. MAIN RESULTS

Ineffective Internal Control Differences (H1 and H3)

We present tests of hypothesis H1 and H3 in Table 3 by estimating equation (1) with the full sample of 302 filers and 404(b) filers in columns (1)–(3), and with matched samples of 302 filers and 404(b) filers in columns (4)–(6). The dependent variable is *302* for our entire sample in column (1) and is *302* and *404(b)* for the 404(b) filer subsample in columns (2) and (3), respectively. In Table 3 onward, by design, the degree of auditor influence on the IIC reporting generally increases from left to right, columns (1)–(3). Because column (1) includes all 302 filers, both accelerated 404(b) filers and non-accelerated filers not subject to 404(b) auditor attestation, its IIC reports are more likely to reflect management assessments of IICs. Column (2) reflects more auditor influence over IICs than column (1) because, for these 404(b) filers, their 302 assessments are subject to auditor review at fiscal year-end. Column (3) reflects the highest auditor influence since the dependent variable is auditor 404(b) IIC attestation.

For hypothesis H1, Table 3 reveals positive coefficients for *CIPO* in all columns, and statistical significance ($p < 0.01$) for columns (1) and (3)¹⁹, thereby indicating that CIPO firms have a higher likelihood to report IICs than their U.S. domiciled counterparts, after controlling for determinants of IICs. In columns (4)–(6), we present matched sample tests that help control for latent omitted variables, including those related to the self-selection of an exchange.²⁰ Despite a smaller sample size, these results are similar to and sometimes larger than columns (1)–(3); the coefficients on *CIPO* monotonically increase in the matched sample (columns (4) to (6)). The likelihood of CIPOs to report IICs increases in the matched sample for 404(b); the odds ratio for *CIPO* for 404(b) reporting for the full and matched samples are 2.45

¹⁹ Tests in columns 2 and 5 tend to be weaker, perhaps because of a nexus of two conditions: first, they are on a population with larger firms, suggesting lower underlying IIC propensities, than in columns (1) and (4); second, columns (2) and (5) have a dependent variable with less auditor influence than columns (3) and (6). We have uncovered no other alternative explanations.

²⁰ We do not employ a Heckman's self-selection model because the selection model for choosing listing by reverse merger, constructed by Adjei et al. (2008) is likely to be different for Chinese firms and relies heavily on reported financials, the integrity of which is at the heart of our research questions. In our setting, a matched sample is an appropriate method to control for observable characteristics that may influence the listing choice and avenue.

and 5.06, respectively²¹. Thus, CIPOs are twice to five times more likely than U.S.-domiciled U.S.-listed firms to make 404(b) IIC disclosures. The coefficients on CRM are all significantly positive and monotonically increase from columns (1) to (3), (and (4) to (6) for the matched sample), suggesting higher IIC reporting as auditor influence on those reports strengthens.

Control variables generally agree with ACK in terms of direction and significance, with the exception of *RESTRUCTURE* and *M&A*. Two likely reasons for these differences are: First, ACK's setting is in the first year of SOX 302 implementation and thus may reflect unfamiliarity with its requirements and the internal controls it assesses. Second, ACK's dependent variable was the less severe "IC deficiency" report. By comparison, our dependent variable is management's overall report of IICs, and our setting is 2008–2012, which by design choice follows an initial learning period and release of clarifying implementation guidance by the PCAOB and the SEC in the summer of 2007, and should have been understood and adopted by manager and auditor IIC reporting for 2008 (PCAOB 2007; SEC 2007). *BIG4AUD* is generally negative (significant for the full sample of 302 firm-years), in line with prior research indicating that Big-4 auditors incentivize client firms to implement stronger internal controls. A formal test of difference in coefficients for CIPO and CRM is also highly significant ($p < 0.01$) in all columns, thereby lending support to H3.

Overall, the results in Table 3 indicate that CIPOs, as well as CRMs, are more likely to report IICs than U.S.-domiciled U.S.-listed firms (H1), and CIPOs are less likely to report IICs than CRMs (H3). Table 3 also provides suggestive evidence of under-reporting, in that coefficients for *CIPO* and *CRM* are higher when 404(b) (versus 302) is the dependent variable, suggesting increased IIC reporting as the auditor role in IIC reporting increases. Another implication of Table 3's evidence that CIPOs have higher IIC propensities than U.S. domiciled counterparts is that CIPOs are not an appropriate control group for testing CRM financial reporting quality (e.g., Chen et al. 2016; Mao and Ettredge 2016).

²¹ These odds ratios are consistent with the univariate measures of CIPO IIC propensities in Table 2 and Addendum 1 panel A.

***** Table 3 about here *****

Under-reporting of IICs (H2 and H4)

We next provide evidence on whether Chinese U.S.-listed firms are more likely to under-report IICs than U.S.-domiciled U.S.-listed counterparts. Table 4 presents results for tests of IIC under-reporting (H2 and H4) using a two-stage regression for our matched sample, and findings are qualitatively similar for the unmatched dataset. In the first stage estimation (untabulated), the results for matched firms exhibit substantively similar signs and significance as in Table 3, except *BIG4AUD* becomes consistently significantly negative ($p < 0.01$)²². Table 4 presents the results of the second-stage regressions, using the predicted IICs from the first stage as the dependent variable in estimations of equation (3) with the subsample of matched firms with clean IIC reports. Thus, the intercepts represent the average *PREDICTED_IIC*. Hypothesis H2 predicts positive coefficients on *CIPO* and *CRM*; estimates in columns (1)–(3) reveal that in the matched sample of 302 filers, CIPOs under-report 302 IICs ($p < 0.01$). CRM is positive and statistically significant in all three columns. Overall, the results in Table 4 lend support to H2.

For H4 tests of differential under-reporting by CIPOs and CRMs, results differ for 302 and 404(b) filers. For 302 filers, the magnitude of the under-reporting is not significantly different between CIPOs and CRMs; however, for the 404(b) filers, the coefficient for *CIPO* is significantly less than *CRM*, thereby supporting H4. Table 4 also helps confirm that the findings in Table 3 are not due to over-reporting. In untabulated results, we find further that under-reporting is not isolated within years before the heightened scrutiny period (2010–2012); rather, under-reporting is statistically significant in the scrutiny period despite the heightened attention. *BIG4AUD* is also significantly negative with a Big-4 auditor reducing *PREDICTED_IIC* by 12 to 20 percent on average, which we consider in the supplementary analysis section.

²² Our likelihood ratios and Wald statistics for the first-stage compare favorably with ACK. Although pseudo-R-square statistics exist for logistic regression, they are not adequate measures model fit (Hosmer, Lemeshow, and Sturdivant 2013). Our pseudo-R-squares are equal or higher than those in other studies that use a prediction from a determinant model for a second-stage analysis (see for example Campa and Kedia (2002); Masulis, Wang, and Xie (2012); Fang, Maffett, and Zhang (2015)).

The under-reporting of IICs by both CIPOs (for the 302 filer matched sample) and CRMs and the insignificant difference between their under-reporting for 302 disclosures may help explain why investors and regulators failed to distinguish “good apples” from “bad apples”, their resulting high stock price synchronicity, and remedial regulatory actions that failed to distinguish between them (Ang et al. 2014; Darrough et al. 2015)

***** Table 4 about here *****

The Effect of Scrutiny on IIC Reporting

We next examine as a corroborative test of H1 and H2 the effect of heightened media and regulatory scrutiny of Chinese U.S.-listed firms in 2010–2012. Notwithstanding possible perceptions of low enforcement risk among Chinese U.S. listers, prior findings indicate public scrutiny promotes corporate governance and disclosure (Abrahamson and Park 1994; Yue, Richardson, and Thornton 1997; Bednar, Boivie, and Prince 2013). Particularly relevant to this study is Rice and Weber (2012), who investigate 404(b) reporting for a set of firms with restatements related to internal control material weaknesses (hereafter, ICMWs), which are reported as part of the internal control audit. Rice et al. find that firms with prior accounting problems or poor financial health are more likely to report 404(b) ICMWs, which they interpret as increased reporting by a subset of firms subjected to additional scrutiny, but they do not separately examine Chinese U.S.-listed firms.

Chinese U.S.-listed firms experienced higher scrutiny starting the summer of 2010. On June 28, 2010, Muddy Waters released the first of several reports on Orient Paper Inc. (NYSE ONP), with a strong sell recommendation warning of significant revenue and asset overstatement and misappropriation of raised capital (Block and Regan 2010). Within weeks, the PCAOB signaled its concerns regarding Chinese U.S.-listed firms in a Staff Audit Practice Alert, leading to a wave of 60 fraud allegations for CRMs²³ and further regulatory scrutiny (PCAOB 2011; SEC 2011). The advent of intense scrutiny of the financial reporting

²³ As identified by Darrough et al. (2015), comprised of CRMs subject to SEC enforcement actions, class-action lawsuits, or media-reported fraud allegations.

practices of Chinese U.S.-listed firms by the media and regulators for the period 2010–2012 provides a unique intervention, facilitated by comparisons of SOX 302 and 404(b) disclosures, to apply difference-in-difference comparisons to address whether heightened scrutiny is an alternative explanation for test results for H1 in Table 3. Differential reporting pre- and post- scrutiny can also provide insight regarding under-reporting results for H2. Following Darrouh et al. (2015), who test for stock market spillover effects among Chinese U.S. listers during this increased scrutiny period, we add to equation (1) a *SCRUTINY* indicator for the years 2010–2012 and its interaction with *CIPO* and *CRM*:

$$\begin{aligned}
 302 / 404(b) = & \beta_0 + \beta_1 CIPO + \beta_2 CRM + \beta_3 USIPO + \beta_4 USRM + \beta_5 GROWTH + \beta_6 BUSSEGS & (4) \\
 & + \beta_7 M\&A + \beta_8 RESTRUCTURE + \beta_9 BIG4AUD + \beta_{10} LNASSETS + \beta_{11} RANKZ \\
 & + \beta_{12} LOSS + \beta_{13} SCRUTINY + \beta_{14} CIPO \times SCRUTINY \\
 & + \beta_{15} CRM \times SCRUTINY + \varepsilon
 \end{aligned}$$

Results are presented in Table 5. If the interaction term *CIPO* × *SCRUTINY* from equation (4) is positive and statistically significant, for 302 and 404(b), this indicates either more truthful reporting in later years or over-reporting in later years. In column (1), the *CIPO* × *SCRUTINY* coefficient is significant and positive ($p < 0.05$) while *CIPO* is insignificant. In column (3), with 404(b) as the dependent variable, the interaction is no longer significant, and *CIPO* is positive and significant ($p < 0.01$). *CRM* × *SCRUTINY* shows a decreasing pattern from columns (1) to (3), with the scrutiny effect being strongest in 302 reports for 302 filer population ($p < 0.01$), and both significance and coefficient size dropping from columns (1) to (3). The coefficient on *CRM* is positive and significant (all $p < 0.01$), and monotonically increasing from column (1) to (3). Taken together, the regressions reported in Table 5 provide evidence that the managements of both CIPOs and CRMs responded to regulatory and media scrutiny by reporting more IICs; whereas there is no significant effect for CIPO 404(b) auditor attestation, CRM 404(b) IIC reports also increased during the scrutiny period. These results are not consistent with an over-reporting explanation for our findings in Table 3; rather, they are consistent with CIPO managers and CRM managers and auditors under-reporting IICs before 2010 when there was less scrutiny. The negative, significant coefficient on *SCRUTINY* is

consistent with a general time-trend of reduced IIC reporting for all filers (Ye, Hermanson, and Krishnan 2013).

***** Table 5 about here *****

Thus, results in Tables 4 and 5 for the scrutiny period serve to corroborate prior evidence that Chinese U.S.-listed firms under-report IICs, particularly 302 IICs and CRMs. The 302 under-reporting indicated in Tables 4 and 5 further suggests that the 404(b) exemption may have led to less diligent financial reporting, at least for Chinese U.S. listers.

6. SUPPLEMENTARY ANALYSIS

Chinese U.S.-listed Firm Auditors

We next provide corroborative descriptive evidence comparing CIPO and CRM auditors. Table 6 presents the signing auditors' engagement frequencies and total fees of Chinese U.S.-listed firms during our study period. In panel A, the Big 4 (in bold) dominate the CIPO audit market, accounting for 90 percent of the engagements and 98 percent of the fees in our sample. In panel B, CRM auditors and fees differ starkly, as only 9 percent of CRMs have Big-4 auditors, and Ernst & Young LLP and PricewaterhouseCoopers LLC rank below the top-15 CRM auditors by the number of engagements. Big4 auditors represent 26 percent of CRM fees, consistent with auditing more complex and/or larger CRM clients. This evidence of Big-4 audit differences between CIPOs and CRMs is consistent with prior findings that Big-4 auditors are associated with stronger internal controls²⁴ and of lower IIC reporting and under-reporting for CIPOs versus CRMs.

***** Table 6 about here *****

²⁴ We thank a reviewer for pointing out that our findings do not address the direction of causality; it is possible that Big 4 auditors choose clients with strong internal controls.

Internal Control Material Weakness Types

In untabulated results, we further examine differences in ICMW types. When an IIC is reported, management or the auditor (for 302 and 404(b), respectively) is required to disclose what material weakness(es) triggered the filing (SEC 2003), which are codified into over 80 discrete types by AuditAnalytics™. Univariate tests of differences between CIPOs, CRMs and their matched U.S. counterparts reveal significant differences between CIPOs, CRMs, and their matched U.S. domestic counterparts. In particular, a strong tendency is indicated for Chinese U.S.-listed firms to report ICMW types that relate to general financial reporting quality (codes 40, 50, and 68) and personnel and segregation of duties (code 51) for both CIPO and CRMs. Prior research shows that such company-level ICMWs are associated with less remediation (Johnstone, Li, and Rupley 2011), lower accruals quality (Doyle et al. 2007b) and more negative stock market reactions (Hammersley, Myers, and Shakespeare 2008). Consistent with our findings for H3, CRMs report more types of ICMW than CIPOs—notably, accounts receivable issues (code 15) and related party issues (code 38), both of which suggest tunneling via related parties.²⁵ Importantly, revenue recognition issues are not significantly different between Chinese firms and their U.S. matched counterparts in 302 or 404(b) ICMWs, suggesting that classical earnings management problems may not be a dominant financial reporting issue among Chinese U.S.-listed firms compared with U.S.-domiciled counterparts, and that internal controls may serve as an apt and more applicable measure of financial reporting quality for Chinese U.S.-listed firms than accrual-based measures. CIPOs have significantly fewer restatements amongst both 302 and 404(b) filers, and the percentage of CRMs restating is nominally higher but not statistically significant. The significantly higher ICMWs coupled with the significantly lower restatements for CIPOs suggest that restatements may not be an appropriate measure to capture under-reporting of IICs as used in Mao and Ettredge (2016).

²⁵ These additional codes become insignificant for the *404(b)* population, which is likely a combination of the association between internal control weakness and firm size, and the reduction in sample size. Tests on all ICMW types between CIPOs, CRMs, and their matched counterparts are available from the authors on request.

Robustness Checks

To ensure that our results are robust to sample selection, measurement, and estimation choices, we perform several sensitivity checks. When we reduce the required minimum revenue from \$20 million to \$10 and \$1 million, include dual-listed Chinese firms and other omitted Chinese firm observations (as detailed in Table 1), and omit firms trading OTC and on pink sheets, our results are qualitatively similar. *CIPO* becomes significant in Table 4 in all columns when we examine only firms on major exchanges.

Our results also are not sensitive to our implementation of the ACK discovery model in three regards. First, our findings are similar when we use three-year measures as in ACK, even though the sample size is reduced. Second, our results are not sensitive to the use of alternative measures for ACK controls, such as if we dichotomize *M&A* and *RESTRUCTURE* equal to 1 if greater than 1 or 5 percent of total assets. Third, ACK do not include a Big-4 auditor measure in their discovery model. Although we assert that *BIG4AUD* may affect both the discovery of IICs and their under-reporting, our results are qualitatively unchanged when we remove *BIG4AUD* from our discovery models (equations (1)–(3)).

As noted in Section 3, we perform an alternate match using *MVE* for size and find slightly attenuated but qualitatively similar results. For our under-reporting analysis, we have listing controls in the second stage. When we include them in the first stage, the results are also substantively similar. When we estimate the under-reporting analysis on the full sample of 302 and subsample of 404(b) firm-years, the results are qualitatively similar, except *CIPO* becomes significant for the regressions for 404(b) filers. While clustering standard errors is contraindicated for logistic regression, as a further check, we perform a linear probability model, clustering by firm (and by firm-year) and the results are consistent with our tabulated logistic regressions.

7. DISCUSSION AND SUMMARY

Chinese firms listing their shares in U.S. via “back door” reverse mergers (CRMs) have dominated prior media, regulator and research attention amid charges of financial reporting weaknesses. Yet CRMs

have effectively ceased, leaving Chinese firms listing via IPOs (CIPOs) as the relevant remaining class of Chinese firms listing on U.S. stock exchanges. Because CIPOs are generally larger and subject to stricter scrutiny in their listings, problems plaguing CRM financial reporting may not generalize to this “front door” class of firms. Yet little prior evidence exists regarding the internal controls underlying the financial reporting quality of CIPOs. This study addresses this gap by examining both SOX Section 302 and 404(b) ineffective internal control reports and related disclosures to compare CIPOs with CRMs and domestic U.S.-listed firms, with three main sets of findings. First, both CIPOs and CRMs have a higher propensity to report IICs than U.S.-domiciled counterparts. Second, both CIPOs and CRMs are more likely to under-report IICs than U.S.-domiciled counterparts, with only CIPOs having higher under-reporting propensities for 302 disclosures consistent with enhanced oversight by their auditors for 404(b) disclosures. Third and importantly, CIPOs are both less likely to report and less likely to under-report IICs than CRMs. These findings document salient differences between CIPOs and CRMs. Additional corroborative evidence of differences between CIPOs and CRMs is provided by their auditors, types of IICs disclosed, and by reporting responses during a period of heightened media and regulatory scrutiny.

These results extend and reinterpret prior research. Specifically, the documented higher likelihood of IIC reporting and under-reporting by CIPOs and CRMs compared with U.S.-domiciled U.S.-listed firms reveal a partial pooling equilibrium wherein it would be difficult for investors to distinguish between firms with strong versus weak financial reporting systems among Chinese U.S.-listed equities. This helps to explain the stock spillover effects observed in Darrough et al. (2015) and help answer Ang et al.’s (2014, 2) question of “Why did US investors and analysts indiscriminately dump all Chinese shares?”. This partial pooling also helps explain the survival and uplisting findings of Lee et al. (2015).

Our finding of a higher likelihood of IICs for CIPOs and CRMs also informs interpretations of performance measures such as ROA since the integrity of financial measures relies on internal controls. Our evidence of higher IIC reporting and under-reporting propensities for CRMs, in particular, may help explain Lee et al.’s finding of increasing auditor adverse opinions for CRMs over the three years following their listing. Lee et al. further find CRMs to have fewer adverse audit opinions than USRMs in their first

year of listing, a difference that weakens and disappears within three years, consistent with IIC weaknesses, and the under-reporting of them by undermining auditors' short-term ability to discern going concern risk.²⁶

Our findings also extend the findings of Chen et al. (2016) and Lee et al. by moving the conversation of Chinese U.S.-listed firms beyond CRMs, and highlighting CIPOs as a distinct class of foreign U.S. listers. Chen et al. emphasize the reverse merger listing method as evidence of weak bonding, which they view as a major explanation for CRM financial reporting issues. Whereas we agree that bonding is a likely partial explanation, we also provide evidence supportive of what they call a "China effect", i.e., a broad issue with internal control compliance, consistent with specific cultural influences relevant to the implementation of internal control systems and attendant IIC disclosures. Whereas we identify various aspects of cultural influence, such as in-group versus out-group behavior and lack of advocacy participation, that motivate our findings, we are not able to detect through these tests which cultural influences are tied to ineffective internal controls and their reporting. Given the globalization of capital markets, an understanding of cultural aspects which may impede financial reporting systems is an important direction of future research.

Our findings of higher likelihood of reporting and under-reporting of IICs for both CIPOs and CRMs compared with U.S. domiciled firms, along with ICMW restatement propensities discussed in section 6, reinterpret findings in Mao and Ettredge (2016). While Mao and Ettredge fail to find lower 302 IIC reporting for CRMs before restatements, their test is not specified for testing under-reporting for two reasons. First restatements are a biased measure of weak internal controls in this setting. We find that CRMs have of higher likelihood to report IICs and no higher incidence of restating in our ICMW analysis, suggesting that CRMs are likely to restate less than is warranted. This evidence is consistent with Srinivasan et al.'s (2014) finding of opportunistic under-restating of financials by foreign U.S.-listers, especially from

²⁶ Further, our sample selection highlights a key issue of Lee et al.'s design choice of CRM and USRM comparisons, with 52 percent of USRM firm-years not meeting our \$20 million revenue threshold. Summary statistics in their Table 2, panel B confirm that CRMs are compared to very small risky USRM firms that differ significantly from CRMs in every control variable prior to their performance comparison period.

weak rule of law countries. Second, CRMs have a three-fold higher likelihood of reporting IICs, making a 302 IIC report mechanically more likely for all CRMs. Both the under-restatements and the higher propensity to have IICs bias against finding a pattern of no 302 report, then a restatement. Thus while it is not surprising that Mao and Ettredge did not find fewer 302 reports for CRMs who restated, these biases in the methodology do not allow their tests to provide evidence against CRM under-reporting internal control issues.

Our findings regarding IIC reporting and under-reporting among 404(b)-exempt filers provides new evidence to the debate regarding the necessity of auditor attestation under 404(b). Whereas Kinney and Shepardson (2011); Dowdell, Herda, and Notbohm (2014) provide evidence consistent with 404(b) not being necessary beyond management IC reports, Holder, Karim, and Robin (2013) find evidence consistent with 404(b) improving financial reporting quality. Our study is focused on Chinese U.S.-listed firms, a class of firms with suspect financial reporting and we find evidence consistent with 404(b) reporting providing a disciplining effect on management reporting on IICs. Further research can help identify other segments of non-accelerated filers who are more susceptible to under-reporting of IICs in the absence of 404(b).

Finally, our findings suggest that a review of the 404(b) exemption for non-accelerated foreign filers is appropriate, as well as continuing regulatory monitoring and enforcement as pledged by the SEC (White 2013; Ceresney 2015). With this in mind, future research can examine ineffective internal controls over financial reporting for other foreign U.S.-listers. Despite an initial inclination for U.S.-listed Chinese firms to de-list or go private in response to U.S. media and regulatory scrutiny in 2010–2012 (Hansen and Öqvist 2013), U.S. IPOs by Chinese firms have rebounded in recent years (Shih 2015). Chinese firms have also increasingly listed on Chinese exchanges via reverse mergers (Ren 2016). Given China's recent stock market history, related regulatory interventions, IPO and foreign listing incentives (Aredy 2015; Chen and Zhang 2017), the financial reporting quality and underlying internal controls Chinese listed firms thus continue to be a priority for regulators, investors, and other market stakeholders globally, including in China.

Appendix

Sample selection

Our sample selection first involves identifying IPO and RM events for the period of 2000-2012, removing foreign firms that are not Chinese, and then identifying IPO and RM firms who are reporting for our sample period 2008–2012. Following Lee et al. (2015) and Darrough et al. (2015), our CRM and IPO sample is limited to reverse mergers completed during 2000–2012 for three reasons: First, CRMs were few but increasing before 2004 (Chen et al. 2016; Darrough et al. 2015). Second, PrivateRaise’s coverage is incomplete before 2000. Third, the listing method (IPO or reverse merger) effects may not be time-invariant; that is, the listing effect might fade over time due to survivorship bias and corporate evolution.

CIPO and USIPO firm data for the period 2000–2012 were obtained from the Thomson Reuters SDC IPO database™, where the primary exchange nation was the U.S. and the domicile nation was China or the U.S., respectively. We use Macquarie Capital Services Chinese dual-listed firm report (Gillis and Lynch 2012) and manually reviewed SEC filings to classify each SDC Chinese IPO (via direct listing or American Deposit Receipts, referring to both methods as IPO) as solely listed in the U.S. (CIPO) or as dual-listed elsewhere. This process yielded 12 dual-listed firms and 124 CIPOs.

The CRM sample derives primarily from a search of shell reverse merger transactions in PrivateRaise™, the most comprehensive vendor of reverse merger data, with comprehensive coverage since 2008 and selective coverage for the period 1999–2007. PrivateRaise’s “nation” variable indicates where the majority of the operations were located at the time of the reverse merger. Using this variable, we identified 168 CRMs and 167 USRMs. We use Thomson Reuter’s SDC International Merger database (SDC)™ and a Bloomberg listing of CRMs to ensure a more complete identification; there was a high degree of overlap, but this step further identified 6 and 14 CRMs using SDC and Bloomberg, respectively (Gammeltoft 2011).

As a final step to enhance inclusiveness, we further considered Compustat’s LOC code. Because the LOC code is scalar, we manually checked each identified firm’s SEC filings to determine if they had Chinese operations during our study period (2008–2012). This final step resulted added five and eleven firms to our CIPO and CRM samples, respectively.

Appendix (continued)

Variable definitions

DEPENDENT VARIABLES

- 302* = Indicator equal to 1 if a 302 report of IIC is reported in at least one quarter of the year, and 0 otherwise.
- 404(b)* = Indicator equal to 1 if a 404(b) report of IIC is reported, and 0 otherwise.
- UNDERREPORT_IIC* = Residual of estimated probability of *302/404(b)*=1 from equation (5) for firms with *302/404(b)* = 0.

INDEPENDENT VARIABLES

- CHINA* = Indicator equal to 1 if a Chinese U.S.-listed firm, and 0 otherwise.
- IPO* = Indicator equal to 1 if became listed through an initial public offering in 2000 or later, and 0 otherwise.
- RM* = Indicator equal to 1 if became listed through a reverse merger in 2000 or later, and 0 otherwise.
- CIPO* = Indicator equal to 1 if a Chinese U.S.-listed firm listed through an initial public offering in 2000 or later, and 0 otherwise.
- CRM* = Indicator equal to 1 if a Chinese U.S.-listed firm listed through a reverse merger in 2000 or later, and 0 otherwise.
- USIPO* = Indicator equal to 1 if a domestic firm listed through an initial public offering in 2000 or later, and 0 otherwise.
- USRM* = Indicator equal to 1 if a domestic firm listed through a reverse merger in 2000 or later, and 0 otherwise.
- REV%CHG* = Percentage change in total revenue from the prior year.
- RANKGROWTH* = Decile rank of *REV%CHG*.
- BUSSEGS* = Number of total business segments.
- FOREIGNSALES* = Indicator equal to 1 if the firm reported foreign revenue, and 0 otherwise.
- RESTRUCTURE* = Indicator equal to 1 if the firm reported restructuring charges, and 0 otherwise.
- M&A* = Indicator equal to 1 if the firm an acquisition, and 0 otherwise.
- BIG4AUD* = Indicator equal to 1 if the auditor was Deloitte & Touch LLP, Ernst & Young LLP, KPMG LLP, or PricewaterhouseCoopers LLP, and 0 otherwise.
- INVENTORY* = End of year total inventory scaled by the end of year total assets.
- LNMARKETVAL* = Natural logarithm of the end of year market value of equity.
- LNASSETS* = Natural logarithm of the end of year total assets.
- ALTMANZ* = Index of bankruptcy risk as defined in Altman (1968).
- RANKZ* = Decile rank of *ALTMANZ*.
- LOSS* = Indicator equal to 1 if the firm reported a negative income, and 0 otherwise.
- DEBT* = Indicator equal to 1 if the firm issued new debt in the next fiscal year, and 0 otherwise.
- SEO* = Indicator equal to 1 if the firm completed a seasoned equity offering in the next fiscal year, and 0 otherwise (See Cohen and Zarowin (2010) for construction).
- ROA* = Net income divided by total assets at fiscal year-end.

LITIGATION = Indicator equal to 1 if in a litigious industry (SIC code within 2833–2836, 3570–3577, 3600–3674, 5200–5961, 7370) and 0 otherwise.

SCRUTINY = Indicator equal to 1 if the fiscal year was 2010 through 2012, and 0 otherwise.

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Table 1 Sample compositionPanel A: Sample firm identification (see Appendix for sample selection details)

	Chinese IPO	US IPO	Chinese Reverse Merger	U.S. Reverse Merger
DealFlow			168	167
Added from SDC	124	1,190	6	
Added from Bloomberg			14	
Added from Compustat	5		11	1
Total sample firms identified	129	1,190	199	167

Panel B: 302 filer sample firm-year composition

	Chinese IPO	US IPO	Chinese Reverse Merger	U.S. Reverse Merger	Other Available Firm Years	Total Firm Years
Compustat firm-years (2008–2012)	459	4,229	696	410	28,352	34,146
Less:						
Firm-years with missing Audit Analytics data	(19)	(128)	(40)	(29)	(7,322)	(7,538)
Firm-years with missing Compustat data	(15)	(1,130)	(104)	(143)	(6,554)	(7,946)
Firm-years with Revenue < \$20M	(26)	(379)	(101)	(213)	(3,327)	(4,046)
Financial firm-years (SIC code 6000–6999)	(25)	(151)	(3)	0	(284)	(463)
Other deleted firm-years ²⁶	0	0	0	0	(112)	(112)
Sample firm-years	374	2,441	448	25	10,753	14,041
Sample firms with available data	111	692	144	15	3,234	3,607
<u>Panel C: 404(b) filer subsample composition</u>						
Sample firm-years	265	2,037	128	8	8,596	11,034
Sample firms with available data	87	579	52	6	2,103	2,827

²⁶ “Other deleted firm-years” is comprised of 58 Chinese dual-listed firm-years wherein the U.S. listing is not the primary listing, 21 Chinese other firm-years, and firm-years for firms listed in avenues other than NYSE, AMEX, NASDAQ, OTC, or pink sheets.

Table 2 Descriptive statistics and univariate tests

Panel A: Firm-years for 302 filers

(n=822 Chinese firm-years and 13,219 U.S. firm-years)

	Tests of Differences						
	Mean	T	Chi	Std. dev.	Q1	Median	Q3
302 REPORT OF IIC							
<i>Chinese firm-years</i>	0.338		***	0.473	0.000	0.000	1.000
<i>U.S. firm-years</i>	0.083			0.276	0.000	0.000	0.000
RANKGROWTH							
<i>Chinese firm-years</i>	6.122	***		3.245	4.000	8.000	9.000
<i>U.S. firm-years</i>	4.400			2.816	2.000	4.000	7.000
BUSSEGS							
<i>Chinese firm-years</i>	1.786	***		1.349	1.000	1.000	3.000
<i>U.S. firm-years</i>	2.042			1.584	1.000	1.000	3.000
INVENTORY							
<i>Chinese firm-years</i>	0.079	***		0.093	0.004	0.049	0.128
<i>U.S. firm-years</i>	0.112			0.125	0.008	0.073	0.173
MVE^a							
<i>Chinese firm-years</i>	554.4	***		2,362.7	45.1	130.8	377.6
<i>U.S. firm-years</i>	3,291.2			9,177.5	117.6	504.2	1,999.7
ASSETS^a							
<i>Chinese firm-years</i>	450.1	***		746.2	103.4	201.1	447.9
<i>U.S. firm-years</i>	3,605.7			9,174.6	153.4	557.7	2,319.3
RANKZ							
<i>Chinese firm-years</i>	5.704	***		2.426	4.000	6.000	8.000
<i>U.S. firm-years</i>	5.014			2.462	3.000	5.000	7.000
FOREIGNSALES							
<i>Chinese firm-years</i>	0.313	***		0.464	0.000	0.000	1.000
<i>U.S. firm-years</i>	0.553			0.497	0.000	1.000	1.000
RESTRUCTURE							
<i>Chinese firm-years</i>	0.017	***		0.129	0.000	0.000	0.000
<i>U.S. firm-years</i>	0.349			0.477	0.000	0.000	1.000
M&A							
<i>Chinese firm-years</i>	0.298	***		0.458	0.000	0.000	1.000
<i>U.S. firm-years</i>	0.398			0.489	0.000	0.000	1.000
BIG4AUD							
<i>Chinese firm-years</i>	0.456	***		0.498	0.000	0.000	1.000
<i>U.S. firm-years</i>	0.739			0.439	0.000	1.000	1.000
LOSS							
<i>Chinese firm-years</i>	0.265	***		0.442	0.000	0.000	1.000
<i>U.S. firm-years</i>	0.317			0.465	0.000	0.000	1.000

Panel B: Firm-years for 404(b) filers

(n=393 Chinese firm-years and 10,641, U.S. firm-years)

	Tests of Differences						
	Mean	T	Chi	Std. dev.	Q1	Median	Q3
404(b) REPORT OF IIC							
<i>Chinese firm-years</i>	0.188		***	0.391	0.000	0.000	0.000
<i>U.S. firm-years</i>	0.037			0.188	0.000	0.000	0.000
RANKGROWTH							
<i>Chinese firm-years</i>	6.260	***		3.095	4.000	8.000	9.000
<i>U.S. firm-years</i>	4.453			2.739	2.000	4.000	7.000
BUSSEGS							
<i>Chinese firm-years</i>	1.819	***		1.306	1.000	1.000	3.000
<i>U.S. firm-years</i>	2.109			1.653	1.000	1.000	3.000
INVENTORY							
<i>Chinese firm-years</i>	0.062	***		0.088	0.000	0.023	0.093
<i>U.S. firm-years</i>	0.101			0.112	0.008	0.068	0.158
MVE^a							
<i>Chinese firm-years</i>	1,004.6	***		3,347.0	143.4	303.5	787.3
<i>U.S. firm-years</i>	4,260.9			11,486.1	259.2	791.8	2,731.3
ASSETS^a							
<i>Chinese firm-years</i>	734.7	***		964.3	215.9	396.6	822.5
<i>U.S. firm-years</i>	4,521.7			10,564.3	300.9	890.3	3,209.4
RANKZ							
<i>Chinese firm-years</i>	5.875	***		2.402	4.000	6.000	8.000
<i>U.S. firm-years</i>	5.172			2.383	3.000	5.000	7.000
FOREIGNSALES							
<i>Chinese firm-years</i>	0.382	***		0.486	0.000	0.000	1.000
<i>U.S. firm-years</i>	0.597			0.491	0.000	1.000	1.000
RESTRUCTURE							
<i>Chinese firm-years</i>	0.023	***		0.150	0.000	0.000	0.000
<i>U.S. firm-years</i>	0.388			0.487	0.000	0.000	1.000
M&A							
<i>Chinese firm-years</i>	0.422			0.495	0.000	0.000	1.000
<i>U.S. firm-years</i>	0.443			0.497	0.000	0.000	1.000
BIG4AUD							
<i>Chinese firm-years</i>	0.751	***		0.433	1.000	1.000	1.000
<i>U.S. firm-years</i>	0.850			0.357	1.000	1.000	1.000
LOSS							
<i>Chinese firm-years</i>	0.272			0.446	0.000	0.000	1.000
<i>U.S. firm-years</i>	0.271			0.445	0.000	0.000	1.000

^aWinsorized, in millions. T and Chi are a *t*-test of difference in means and a chi-square test significance, respectively. Symbols ***, **, * indicate significance at 1, 5, and 10 percent or less. Variable definitions are provided in the Appendix.

Table 2 (continued)

Panel C: CIPO and CRM firm-years
(374 Chinese firm-years and 448 U.S. firm-years)

	<u>Tests of Differences</u>						
	Mean	T	Chi	Std. dev.	Q1	Median	Q3
302 REPORT OF IIC							
<i>CIPO firm-years</i>	0.155		***	0.362	0.000	0.000	0.000
<i>CRM firm-years</i>	0.491			0.500	0.000	0.000	1.000
GROWTH							
<i>CIPO firm-years</i>	6.115			3.223	4.000	8.000	9.000
<i>CRM firm-years</i>	6.127			3.267	4.000	8.000	9.000
BUSSEGS							
<i>CIPO firm-years</i>	1.660	**		1.181	1.000	1.000	2.000
<i>CRM firm-years</i>	1.891			1.468	1.000	1.000	3.000
INVENTORY							
<i>CIPO firm-years</i>	0.049	***		0.073	0.000	0.012	0.079
<i>CRM firm-years</i>	0.104			0.101	0.023	0.078	0.155
MVE^a							
<i>CIPO firm-years</i>	1,069.3	***		3,431.2	114.8	321.6	1,042.2
<i>CRM firm-years</i>	124.5			146.3	28.7	68.0	161.3
ASSETS^a							
<i>CIPO firm-years</i>	740.7	***		986.8	198.7	374.0	863.4
<i>CRM firm-years</i>	207.4			283.4	72.9	126.8	235.0
RANK-Z							
<i>CIPO firm-years</i>	5.770			2.479	4.000	6.000	8.000
<i>CRM firm-years</i>	5.650			2.383	4.000	6.000	8.000
FOREIGN							
<i>CIPO firm-years</i>	0.369		***	0.483	0.000	0.000	1.000
<i>CRM firm-years</i>	0.266			0.442	0.000	0.000	1.000
RESTRUCTURE							
<i>CIPO firm-years</i>	0.032		***	0.176	0.000	0.000	0.000
<i>CRM firm-years</i>	0.004			0.067	0.000	0.000	0.000
M&A							
<i>CIPO firm-years</i>	0.433		***	0.496	0.000	0.000	1.000
<i>CRM firm-years</i>	0.185			0.389	0.000	0.000	0.000
BIG4AUD							
<i>CIPO firm-years</i>	0.898		***	0.303	1.000	1.000	1.000
<i>CRM firm-years</i>	0.087			0.282	0.000	0.000	0.000
LOSS							
<i>CIPO firm-years</i>	0.313		***	0.464	0.000	0.000	1.000
<i>CRM firm-years</i>	0.225			0.418	0.000	0.000	0.000

Table 3 Logistic regression tests of IIC differences

	(1)	(2)	(3)	(4)	(5)	(6)
Population	302 Filers	404(b) Filers	302 Filers	404(b) Filers	302 Filers	404(b) Filers
Dependent variable	302	302	404(b)	302	302	404(b)
<i>CIPO (H1)</i>	0.831*** (0.160)	0.344 (0.240)	0.896*** (0.260)	0.555** (0.238)	0.742* (0.431)	1.622*** (0.540)
<i>CRM (H1)</i>	1.924*** (0.123)	2.135*** (0.217)	2.424*** (0.233)	1.772*** (0.195)	2.215*** (0.436)	2.753*** (0.537)
<i>USIPO</i>	-0.094 (0.090)	0.031 (0.103)	-0.015 (0.134)	-0.744** (0.352)	-0.724 (0.594)	-0.642 (0.806)
<i>USRM</i>	0.487 (0.461)	-0.179 (1.166)	0.175 (1.246)			
<i>RANKGROWTH</i>	0.035*** (0.011)	-0.002 (0.014)	0.024 (0.018)	0.051** (0.023)	-0.031 (0.043)	-0.017 (0.048)
<i>BUSSEGS</i>	0.029 (0.022)	0.049* (0.027)	0.072** (0.035)	0.068 (0.049)	0.294*** (0.091)	0.267*** (0.096)
<i>FOREIGNSALES</i>	0.099 (0.070)	0.056 (0.092)	-0.017 (0.115)	-0.183 (0.149)	-0.523* (0.276)	-0.578* (0.306)
<i>RESTRUCTURE</i>	0.027 (0.077)	0.036 (0.094)	0.090 (0.121)	0.000 (0.240)	0.400 (0.409)	0.943* (0.506)
<i>M&A</i>	-0.061 (0.071)	-0.065 (0.087)	0.036 (0.111)	-0.145 (0.161)	-0.888*** (0.302)	-0.433 (0.317)
<i>BIG4AUD</i>	-0.269*** (0.084)	-0.211** (0.105)	-0.310** (0.130)	-0.158 (0.200)	-0.097 (0.357)	-0.288 (0.397)
<i>INVENTORY</i>	0.202 (0.327)	1.609*** (0.506)	1.163* (0.641)	0.669 (0.646)	2.751** (1.284)	2.180 (1.452)
<i>LNASSETS</i>	-0.190*** (0.026)	-0.263*** (0.036)	-0.317*** (0.047)	-0.081 (0.077)	-0.219 (0.152)	-0.276 (0.169)
<i>RANKZ</i>	-0.094*** (0.015)	-0.096*** (0.019)	-0.117*** (0.024)	-0.137*** (0.033)	-0.243*** (0.065)	-0.181** (0.071)
<i>LOSS</i>	0.535*** (0.075)	0.624*** (0.096)	0.564*** (0.123)	0.462*** (0.175)	0.343 (0.334)	0.233 (0.369)
Constant	-1.021*** (0.380)	-1.285** (0.522)	-1.950*** (0.606)	-1.339** (0.521)	-0.727 (1.142)	-1.315 (1.284)
<i>CIPO = CRM (H3)</i>	31.56***	32.08***	20.45***	27.28***	11.89***	6.199**
Observations	14,041	11,034	11,034	1,580	750	750
Exchange dummies	YES	YES	YES	YES	YES	YES
Industry dummies	YES	YES	YES	NO	NO	NO
Likelihood ratio, χ^2	1242.3***	589.7***	487.5***	296.2***	159.2***	131.1***
Wald, χ^2	1024.5***	466.8***	427.1***	232.9***	109.0***	93.5***
Pseudo R-squared	0.138	0.106	0.126	0.174	0.267	0.257

Logistic regressions of equation (1) on different samples with the dependent variable *302* in columns (1), (2), (4), and (5); the dependent variable is *404(b)* for columns (3) and (6). The samples are as follows: column (1) is our 302 filer sample; columns (2) and (3) are the 404(b) filer subsample; column (4) includes all CIPOs and CRMs and their matched firms; and columns (5) and (6) are a 404(b) filer matched subsample. Significance tests are Wald Chi-square tests except for CIPO=CRM, which presents the *F*-statistic for a Wald test of equal coefficients. Symbols ***, **, * indicate significance at 1, 5, and 10 percent or less. Exchange indicators are NASDAQ, OTC, and PINK (intercept contains NYSE/AMEX). Fama-French 48 industry indicators are included and are individually dropped in the case of perfect multicollinearity. Variable definitions are provided in the Appendix.

Table 4 Under-reporting of IICs, subsample of Chinese U.S.-listed firms and their matches

Population	(1)	(2)	(3)
Dependent variable for each column is <i>UNDERREPORT_IIC</i>	302 Filers	404(b) Filers	
	302	302	404(b)
<i>CIPO (H3)</i>	0.036*** (0.004)	0.001 (0.007)	0.006 (0.005)
<i>CRM (H3)</i>	0.043*** (0.009)	0.051** (0.021)	0.054*** (0.016)
<i>USIPO</i>	0.013* (0.007)	0.011 (0.012)	0.010 (0.009)
<i>BIG4AUD</i>	-0.194*** (0.007)	-0.133*** (0.018)	-0.121*** (0.014)
<i>DEBT</i>	0.005 (0.008)	-0.020* (0.011)	-0.013* (0.007)
<i>SEO</i>	0.017 (0.011)	0.046* (0.026)	0.054** (0.021)
<i>ROA</i>	-0.132*** (0.016)	-0.270*** (0.037)	-0.150*** (0.027)
<i>LITIGATION</i>	-0.011** (0.005)	-0.019** (0.007)	-0.021*** (0.005)
Constant	0.308*** (0.007)	0.230*** (0.018)	0.194*** (0.015)
<i>CIPO = CRM (H4)</i>	0.509	5.932**	9.209***
Observations	1,219	648	670
R-squared	0.627	0.400	0.453

Ordinary least squares estimations of equation (3) on the subsample of CRM and CIPOs and their matches that disclose clean IIC reports, with robust standard errors reported below the coefficient estimates. The dependent variable is a prediction of the existence an IIC from equation (2) (the estimation of equation (2) is provided in Addendum 3). Column (1) includes all CIPOs and CRMs and their matched firms who report a clean 302 report; and columns (2) and (3) are the 404(b) filers from the matched sample who report a clean 302 and 404(b) report, respectively. Significance based on *t*-statistics are presented except for CIPO=CRM, which presents the *F*-statistic for a Wald test of equal coefficients. Symbols ***, **, * indicate significance at 1, 5, and 10 percent or less. Variable definitions are provided in the Appendix.

Table 5 Effect of scrutiny on reporting of IICs

	(1)	(2)	(3)
Population	302 Filers	404(b) Filers	
Dependent variable	302	302	404(b)
<i>CIPO</i>	0.343 (0.302)	0.280 (0.372)	1.060*** (0.384)
<i>CRM</i>	1.244*** (0.178)	1.611*** (0.314)	1.997*** (0.335)
<i>USIPO</i>	-0.078 (0.090)	0.050 (0.103)	-0.018 (0.134)
<i>USRM</i>	0.542 (0.465)	-0.128 (1.198)	0.147 (1.251)
<i>SCRUTINY</i>	-0.300*** (0.066)	-0.298*** (0.083)	-0.002 (0.108)
<i>CIPOxSCRUTINY</i>	0.750** (0.344)	0.157 (0.464)	-0.278 (0.484)
<i>CRMxSCRUTINY</i>	1.180*** (0.216)	0.950** (0.391)	0.733* (0.405)
<i>RANKGROWTH</i>	0.038*** (0.011)	-0.001 (0.014)	0.026 (0.018)
<i>BUSSEGS</i>	0.028 (0.022)	0.048* (0.027)	0.072** (0.035)
<i>FOREIGNSALES</i>	0.107 (0.070)	0.071 (0.092)	-0.020 (0.115)
<i>RESTRUCTURE</i>	0.022 (0.078)	0.023 (0.094)	0.092 (0.121)
<i>M&A</i>	-0.059 (0.072)	-0.065 (0.087)	0.034 (0.111)
<i>BIG4AUD</i>	-0.266*** (0.084)	-0.218** (0.106)	-0.312** (0.130)
<i>INVENTORY</i>	0.214 (0.328)	1.606*** (0.506)	1.168* (0.641)
<i>LNASSETS</i>	-0.192*** (0.027)	-0.258*** (0.036)	-0.318*** (0.047)
<i>RANKZ</i>	-0.091*** (0.015)	-0.100*** (0.019)	-0.116*** (0.024)
<i>LOSS</i>	0.510*** (0.076)	0.582*** (0.097)	0.568*** (0.124)
Constant	-0.875** (0.384)	-1.088** (0.519)	-1.906*** (0.605)
Observations	14,041	11,034	11,034
Exchange/Industry dummies	YES/YES	YES/YES	YES/YES
Likelihood ratio, χ^2	1283.5***	605.8***	491.3***
Wald, χ^2	1050.7***	481.4***	432.0***
Pseudo R-squared	0.146	0.115	0.130

Logistic regressions of equation (4), with the dependent variable 302 in columns (1) and (2) and 404(b) for column (3). Column (1) is our 302 filer sample and columns (2) and (3) are the 404(b) filer subsample. Significance tests are Wald Chi-square tests except for CIPOxSCRUTINY= CRMxSCRUTINY, which is the *F*-statistic for a Wald test of equal coefficients. Symbols ***, **, * indicate significance at 1, 5, and 10 percent or less. Exchange indicators are NASDAQ, OTC, and PINK. Fama-French 48 industry indicators are included and are individually dropped in the case of perfect multicollinearity. Variable definitions are provided in the Appendix.

Table 6 Auditors of Chinese U.S.-listed firms

Panel A: Chinese IPO firm-years (n=374)

<i>Count</i>				<i>Fee</i>				<i>Average fee</i>	<i>Total fees</i>	<i>% of</i>
<i>Auditor name</i>		<i>Freq</i>	<i>% Freq</i>	<i>Auditor name</i>		<i>per Audit</i>	<i>(in \$1,000)</i>	<i>(in \$1,000)</i>	<i>total fees</i>	
1	Deloitte & Touche LLP	153	40.9%	1	Deloitte & Touche LLP	1,066.0		163,099.5	41.4%	
2	PricewaterhouseCoopers LLP	84	22.5%	2	PricewaterhouseCoopers LLP	1,428.3		119,973.4	30.4%	
3	Ernst & Young LLP	59	15.8%	3	Ernst & Young LLP	918.8		54,209.1	13.8%	
4	KPMG LLP	41	11.0%	4	KPMG LLP	1,173.8		48,125.3	12.2%	
5	GHP Horwath PC	6	1.6%	5	GHP Horwath PC	214.3		1,286.0	0.3%	
6	Kabani & Company Inc	5	1.3%	6	BDO China Dahua CPA Co Ltd	622.5		1,245.0	0.3%	
7	Grant Thornton LLP	4	1.1%	7	Grant Thornton LLP	284.6		1,138.5	0.3%	
8	Friedman LLP	3	0.8%	8	BDO China Shu Lun Pan CPAs LLP	418.3		836.6	0.2%	
8	Crowe Horwath LLP	3	0.8%	9	Kabani & Company Inc	142.6		713.0	0.2%	
9	Sherb & Co LLP	2	0.5%	10	BDO China Li Xin Da Hua CPA Co Ltd	270.0		540.0	0.1%	
9	BDO China Li Xin Da Hua CPA Co Ltd	2	0.5%	11	Friedman LLP	178.3		535.0	0.1%	
9	Marcum Bernstein & Pinchuk LLP	2	0.5%	12	Crowe Horwath LLP	178.0		534.0	0.1%	
9	BDO China Shu Lun Pan CPAs LLP	2	0.5%	13	Stonefield Josephson Inc	510.9		510.9	0.1%	
9	BDO China Dahua CPA Co Ltd	2	0.5%	14	Marcum Bernstein & Pinchuk LLP	185.0		370.0	0.1%	

Panel B: Chinese reverse merger firm-years (n=448)

<i>Count</i>				<i>Fee</i>				<i>Average fee</i>	<i>Total fees</i>	<i>% of</i>
<i>Auditor name</i>		<i>Freq</i>	<i>% Freq</i>	<i>Auditor name</i>		<i>per Audit</i>	<i>(in \$1,000)</i>	<i>(in \$1,000)</i>	<i>total fees</i>	
1	BDO Limited CPAs (HK)	22	4.9%	1	Deloitte & Touche LLP	1,125.1		13,500.7	9.5%	
2	Goldman Parks Kurland Mohidin	21	4.7%	2	KPMG LLP	782.5		10,955.3	7.7%	
3	Friedman LLP	18	4.0%	3	Weinberg & Company	679.5		8,833.7	6.2%	
3	PKF Hong Kong	18	4.0%	4	Ernst & Young LLP	725.3		7,252.7	5.1%	
3	Marcum Bernstein & Pinchuk LLP	18	4.0%	5	Frazer Frost LLP	444.5		7,112.2	5.0%	
6	Moore Stephens Wurth Frazer & Torbet	16	3.6%	6	GHP Horwath PC	521.5		6,258.0	4.4%	
6	Frazer Frost LLP	16	3.6%	7	BDO Limited CPAs (HK)	283.0		6,226.3	4.4%	
8	KPMG LLP	14	3.1%	8	Moore Stephens Wurth Frazer & Torbet	374.6		5,993.5	4.2%	
9	Weinberg & Company	13	2.9%	9	Marcum Bernstein & Pinchuk LLP	266.8		4,802.7	3.4%	
10	Deloitte & Touche LLP	12	2.7%	10	PricewaterhouseCoopers LLP	1,175.2		4,700.7	3.3%	
10	Sherb & Co LLP	12	2.7%	11	Grant Thornton LLP	579.8		4,638.2	3.3%	
10	Samuel H Wong & Co LLP	12	2.7%	12	Friedman LLP	255.7		4,602.8	3.2%	
10	GHP Horwath PC	12	2.7%	13	Goldman Kurland & Mohidin	204.1		4,286.2	3.0%	
10	Goldman Kurland & Mohidin	12	2.7%	14	Crowe Horwath HK CPA Ltd	327.4		3,601.4	2.5%	
15	Crowe Horwath HK CPA Ltd	11	2.5%	15	PKF Hong Kong	175.2		3,153.2	2.2%	
16	Ernst & Young LLP	10	2.2%							
34	PricewaterhouseCoopers LLP	4	0.9%							

Addendum 1 Descriptive statistics for matched firm-years

Panel A: Firm-years for CIPOs and their matched counterparts (N=373 each)

	Tests of Differences			Std. dev.	Q1	Median	Q3
	Mean	T	Chi				
302 REPORT OF IIC							
<i>CIPO firm-years</i>	0.155		***	0.363	0.000	0.000	0.000
<i>U.S. firm-years</i>	0.080			0.272	0.000	0.000	0.000
RANKGROWTH							
<i>CIPO firm-years</i>	6.107	***		3.224	4.000	8.000	9.000
<i>U.S. firm-years</i>	4.381			2.814	2.000	5.000	7.000
BUSSEGS							
<i>CIPO firm-years</i>	1.660	***		1.182	1.000	1.000	2.000
<i>U.S. firm-years</i>	1.962			1.429	1.000	1.000	3.000
INVENTORY							
<i>CIPO firm-years</i>	0.049	***		0.072	0.000	0.012	0.079
<i>U.S. firm-years</i>	0.077			0.100	0.000	0.026	0.132
MVE ^a							
<i>CIPO firm-years</i>	819.2	*		1,243.2	114.8	320.5	1,042.2
<i>U.S. firm-years</i>	987.3			1,341.2	171.5	437.0	1,231.2
ASSETS ^a							
<i>CIPO firm-years</i>	729.3			917.1	198.7	375.3	863.4
<i>U.S. firm-years</i>	722.7			923.9	201.4	370.2	884.3
RANKZ							
<i>CIPO firm-years</i>	5.761			2.477	4.000	6.000	8.000
<i>U.S. firm-years</i>	5.584			2.473	4.000	6.000	8.000
FOREIGNSALES							
<i>CIPO firm-years</i>	0.367		***	0.483	0.000	0.000	1.000
<i>U.S. firm-years</i>	0.649			0.478	0.000	1.000	1.000
RESTRUCTURE							
<i>CIPO firm-years</i>	0.032		***	0.177	0.000	0.000	0.000
<i>U.S. firm-years</i>	0.375			0.485	0.000	0.000	1.000
M&A							
<i>CIPO firm-years</i>	0.434			0.496	0.000	0.000	1.000
<i>U.S. firm-years</i>	0.410			0.493	0.000	0.000	1.000
BIG4AUD							
<i>CIPO firm-years</i>	0.901		***	0.299	1.000	1.000	1.000
<i>U.S. firm-years</i>	0.791			0.407	1.000	1.000	1.000
LOSS							
<i>CIPO firm-years</i>	0.314			0.465	0.000	0.000	1.000
<i>U.S. firm-years</i>	0.290			0.454	0.000	0.000	1.000

Panel B: Firm-years for CRMs and their matched counterparts (N=417 each)

	Tests of Differences			Std. dev.	Q1	Median	Q3
	Mean	T	Chi				
302 REPORT OF IIC							
<i>CRM firm-years</i>	0.487		***	0.500	0.000	0.000	1.000
<i>U.S. firm-years</i>	0.168			0.381	0.000	0.000	0.000
RANKGROWTH							
<i>CRM firm-years</i>	6.146	***		3.261	4.000	8.000	9.000
<i>U.S. firm-years</i>	4.177			3.176	1.000	4.000	7.000
BUSSEGS							
<i>CRM firm-years</i>	1.868			1.471	1.000	1.000	3.000
<i>U.S. firm-years</i>	1.909			1.249	1.000	1.000	3.000
INVENTORY							
<i>CRM firm-years</i>	0.105	***		0.099	0.023	0.074	0.154
<i>U.S. firm-years</i>	0.163			0.130	0.050	0.144	0.240
MVE ^a							
<i>CRM firm-years</i>	127.6	***		144.8	29.5	70.0	163.8
<i>U.S. firm-years</i>	198.7			318.5	22.9	80.8	225.2
ASSETS ^a							
<i>CRM firm-years</i>	205.6			287.5	72.1	123.5	233.7
<i>U.S. firm-years</i>	218.6			506.7	56.4	119.8	247.6
RANKZ							
<i>CRM firm-years</i>	5.669	***		2.380	4.000	6.000	8.000
<i>U.S. firm-years</i>	4.681			2.699	2.000	5.000	7.000
FOREIGNSALES							
<i>CRM firm-years</i>	0.254		***	0.437	0.000	0.000	1.000
<i>U.S. firm-years</i>	0.381			0.489	0.000	0.000	1.000
RESTRUCTURE							
<i>CRM firm-years</i>	0.002		***	0.048	0.000	0.000	0.000
<i>U.S. firm-years</i>	0.266			0.445	0.000	0.000	1.000
M&A							
<i>CRM firm-years</i>	0.182		*	0.385	0.000	0.000	0.000
<i>U.S. firm-years</i>	0.235			0.427	0.000	0.000	0.000
BIG4AUD							
<i>CRM firm-years</i>	0.094		***	0.288	0.000	0.000	0.000
<i>U.S. firm-years</i>	0.463			0.500	0.000	0.000	1.000
LOSS							
<i>CRM firm-years</i>	0.221		***	0.413	0.000	0.000	0.000
<i>U.S. firm-years</i>	0.489			0.501	0.000	1.000	1.000

^aWinsorized, in millions. T and Chi are t-test and chi-square test significance, respectively. Symbols ***, **, * indicate significance at 1, 5, and 10 percent or less. Variable definitions are provided in the Appendix.

Addendum 2 Pearson correlations for 302 filers (bottom 14,041 firm-years) and 404(b) filers (top 11,034 firm-years)

		302	A	B	C	D	E	F	G	H	I	J	K	L	M
<i>404(b)</i>			0.14	0.01	0.20	0.02	(0.01)	(0.04)	(0.01)	(0.03)	(0.10)	0.00	(0.06)	(0.07)	0.10
<i>CHINA</i>	A	0.20		0.22	0.55	0.12	(0.03)	(0.08)	(0.14)	(0.01)	(0.05)	(0.06)	(0.05)	0.05	0.00
<i>IPO</i>	B	(0.02)	0.16		(0.06)	0.16	(0.14)	(0.10)	(0.12)	(0.02)	0.08	(0.11)	(0.11)	0.02	0.09
<i>RM</i>	C	0.24	0.71	(0.09)		0.08	(0.01)	(0.06)	(0.08)	(0.04)	(0.18)	0.00	(0.04)	0.02	(0.00)
<i>RANKGROWTH</i>	D	0.02	0.14	0.16	0.11		(0.06)	(0.03)	(0.20)	0.10	(0.06)	(0.06)	0.02	0.19	(0.19)
<i>BUSSEGS</i>	E	(0.03)	(0.04)	(0.13)	(0.02)	(0.05)		0.05	0.08	0.15	0.06	0.01	0.10	(0.04)	(0.09)
<i>FOREIGNSALES</i>	F	(0.06)	(0.11)	(0.07)	(0.10)	(0.02)	0.05		0.29	0.18	0.13	0.10	0.14	0.13	(0.07)
<i>RESTRUCTURE</i>	G	(0.05)	(0.17)	(0.09)	(0.13)	(0.19)	0.08	0.29		0.11	0.14	0.03	0.07	(0.15)	0.12
<i>M&A</i>	H	(0.07)	(0.05)	0.02	(0.08)	0.10	0.15	0.20	0.14		0.07	(0.06)	0.08	0.06	(0.12)
<i>BIG4AUD</i>	I	(0.17)	(0.15)	0.15	(0.26)	(0.02)	0.08	0.21	0.21	0.16		(0.03)	0.14	(0.04)	(0.05)
<i>INVENTORY</i>	J	0.01	(0.06)	(0.12)	(0.01)	(0.08)	(0.01)	0.04	(0.01)	(0.10)	(0.13)		(0.06)	0.22	(0.05)
<i>LNMARKETVAL</i>	K	(0.09)	(0.07)	(0.09)	(0.06)	0.02	0.11	0.16	0.10	0.11	0.20	(0.08)		0.06	(0.17)
<i>RANKZ</i>	L	(0.10)	0.07	0.03	0.04	0.21	(0.02)	0.11	(0.13)	0.07	0.04	0.17	0.08		(0.37)
<i>LOSS</i>	M	0.13	(0.03)	0.07	(0.03)	(0.21)	(0.09)	(0.08)	0.10	(0.13)	(0.11)	(0.01)	(0.18)	(0.42)	

Bolded correlations are significant at the 5 percent level or less. Variable definitions are provided in the Appendix.

Addendum 3 First stage of under-reporting analysis

Population	(1)	(2)	(3)
Dependent variables	302 Filers 302	404(b) Filers 302	404(b) 404(b)
<i>RANKGROWTH</i>	0.079*** (0.022)	0.015 (0.040)	0.042 (0.045)
<i>BUSSEGS</i>	0.081* (0.047)	0.324*** (0.083)	0.292*** (0.088)
<i>FOREIGNSALES</i>	-0.233 (0.141)	-0.487* (0.259)	-0.583** (0.287)
<i>RESTRUCTURE</i>	-0.617*** (0.218)	-0.532 (0.325)	-0.537 (0.372)
<i>M&A</i>	-0.301* (0.155)	-0.902*** (0.290)	-0.503* (0.305)
<i>BIG4AUD</i>	-0.946*** (0.161)	-0.890*** (0.272)	-0.935*** (0.289)
<i>INVENTORY</i>	-0.111 (0.591)	3.223*** (1.162)	2.568** (1.277)
<i>LNASSETS</i>	0.045 (0.071)	-0.182 (0.145)	-0.198 (0.160)
<i>RANKZ</i>	-0.115*** (0.031)	-0.246*** (0.061)	-0.175*** (0.066)
<i>LOSS</i>	0.276* (0.163)	0.242 (0.310)	0.148 (0.344)
Constant	-0.999** (0.484)	0.175 (1.041)	-0.195 (1.132)
Observations	1,580	750	750
Exchange dummies	YES	YES	YES
Industry dummies	NO	NO	NO
Likelihood ratio, χ^2	184***	121.2***	88.46***
Wald, χ^2	158.4***	91.35***	75.15***
Pseudo R-squared	0.108	0.203	0.174

Logistic regressions of equation (2); the dependent variable is *302* in columns (1) and (2), and the dependent variable is *404(b)* for column (3). Column (1) is our full sample and columns (2) and (3) are the 404(b) filer subsample. Significance tests are Wald Chi-square tests. Symbols ***, **, * indicate significance at 1, 5, and 10 percent or less. Exchange indicators are NASDAQ, OTC, and PINK (intercept contains NYSE/AMEX). Variable definitions are provided in the Appendix.

Addendum 4 Matched univariate tests of differences in ICMW types

Panel A: 302 filers		CIPO (n=373)	Match (n=373)	CRM (n=437)	Match (n=437)	
Key	Accounting code descriptions					
15	Acc - Accounts/loans receivable, investments and cash issues	3.22%	1.34%	14.42%	3.20%	***
16	Acc - PPE, intangible or fixed asset (value/diminution) issues	1.61	1.61	7.09	2.97	***
32	Acc - Inventory, vendor, and cost of sales issues	2.14	3.22	11.67	6.41	**
33	Acc - Liabilities, payables, reserves and accrual estimate failures	1.34	1.61	9.84	5.26	**
38	Acc - Foreign, related party, affiliated and/or subsidiary issues	3.75	2.41	11.90	4.35	***
39	Acc - Revenue recognition issues	5.63	3.22	9.84	6.64	
40	Acc - Fin statement, footnote, US GAAP conversion, segment disclosures	10.72	1.07	29.98	2.06	***
41	Acc - Tax expense/benefit/deferral/other (FAS 109) issues	1.88	3.22	5.03	4.81	
47	Acc - Debt, quasi-debt, warrants, and equity (BCF) security issues	1.34	0.54	10.53	2.06	***
68	Acc - Unspecified/unidentified/inapplicable FASB/GAAP issues	11.53	1.34	31.81	6.86	***
	Other code descriptions					
49	DC - Restatement (recent past or pending) evident	0.80%	2.95%	9.38%	5.95%	*
50	DC - Financial close/policy/information accumulation/timeliness issues	19.57	8.04	53.32	18.31	***
51	DC - Personnel inadequacies/segregation of duty issues	25.74	6.17	53.78	16.93	***
52	DC - Information technology, software, access/security issues	6.70	4.56	9.38	9.38	
53	DC - Period-end close and non-routine adjustment issues	3.75	4.56	12.36	4.81	***
55	DC - Remediation of disclosure control weakness asserted	6.70	4.29	4.35	5.03	
56	DC - Acquisition-related integration and/or challenges noted	5.09	4.29	8.92	6.41	
63	DC - Section 404 adverse report (recent past/pending) filed	8.85	5.90	48.51	15.79	***
70	DC - Board, audit committee, corporate governance issues	3.22	0.80	9.61	1.83	***
85	DC - Fraud risk program/assessment/management	1.61	0.54	7.32	2.06	***
Panel B: 404(b) filers		(n=262)	(n=262)	(n=122)	(n=122)	
Key	Accounting code descriptions					
15	Acc - Accounts/loans receivable, investments and cash issues	1.91%	1.15%	18.64%	5.08%	***
16	Acc - PPE, intangible or fixed asset (value/diminution) issues	0.76	-	13.56	3.39	***
32	Acc - Inventory, vendor, and cost of sales issues	1.91	2.67	16.10	5.93	**
33	Acc - Liabilities, payables, reserves and accrual estimate failures	0.38	1.15	10.17	6.78	
38	Acc - Foreign, related party, affiliated and/or subsidiary issues	3.44	1.53	14.41	2.54	***
39	Acc - Revenue recognition issues	4.58	3.82	7.63	5.08	
40	Acc - Fin statement, footnote, US GAAP conversion, segment disclosures	5.73	0.38	19.49	2.54	***
41	Acc - Tax expense/benefit/deferral/other (FAS 109) issues	0.76	2.29	11.86	3.39	**
47	Acc - Debt, quasi-debt, warrants, and equity (BCF) security issues	0.76	-	11.86	0.85	***
68	Acc - Unspecified/unidentified/inapplicable FASB/GAAP issues	3.82	-	22.88	5.08	***
	Other code descriptions					
49	DC - Restatement (recent past or pending) evident	0.76%	3.44%	12.71%	6.78%	*
50	DC - Financial close/policy/information accumulation/timeliness issues	9.16	6.11	50.00	13.56	***
51	DC - Personnel inadequacies/segregation of duty issues	16.41	3.82	52.54	12.71	***
52	DC - Information technology, software, access/security issues	3.82	3.82	12.71	7.63	
53	DC - Period-end close and non-routine adjustment issues	3.44	3.82	13.56	1.69	***
55	DC - Remediation of disclosure control weakness asserted	6.87	3.05	9.32	3.39	
56	DC - Acquisition-related integration and/or challenges noted	5.73	3.05	11.02	1.69	***
63	DC - Section 404 adverse report (recent past/pending) filed	6.49	4.96	46.61	11.02	***
70	DC - Board, audit committee, corporate governance issues	1.15	0.76	2.54	3.39	
85	DC - Fraud risk program/assessment/management	-	0.38	5.93	3.39	

Symbols ***, **, * indicates Fisher's exact test (two-sided) significance at 10, 5, or 1 percent or better.