

# IPO Firms' Voluntary Compliance with SOX 404 as Evidence on the Value Relevance of Internal Control Quality

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Newly public firms are not required to comply with SOX 404 for their initial public offerings. This provides a unique setting in which to investigate the benefits of voluntary disclosure with SOX 404 and the value of information revealed as a consequence of compliance. We investigate whether voluntary compliance with SOX 404, either fully or partially, impacts the perceived risk of firms conducting IPOs on the first day of trading (reflected in underpricing) or following the IPO. Our results indicate that neither full compliance with SOX 404 at the time of the IPO, nor a managerial discussion of internal controls prior to the IPO, result in lower underpricing or higher post-IPO performance. This suggests that the costs incurred through the SOX 404 compliance process may be unnecessary. Indirectly, our results provide additional evidence that some of the requirements of SOX extract costs from shareholders without supporting better quality information.

## Introduction

The passage of the Sarbanes-Oxley Act of 2002 has been controversial mainly due to the debate over whether its compliance costs imposed on firms exceeds its perceived benefits. In particular, Section 404 requires (a) management of the company to evaluate the effectiveness of internal controls over financial reporting and document any deficiencies and weakness; and (b) auditors attest to and report on management's assessment of the adequacy of internal controls. Regulators maintain the position that the internal control requirements under section 404 improve the quality and transparency of financial reporting. Consequently, Section 404 compliance should serve as a signal to investors for the quality of the firm's financial reporting.

On the other hand, critics allege that the costs of Section 404 compliance far exceed its benefits. A recent survey by Finance Executives International (FEI) shows that the average compliance costs were \$2.9 million in 2007 for the 200 firms with average revenue of \$6.8 billion that participated in the survey. 78% of the 200 firms agree that the costs exceed the benefits (Russell 2007). Another study by Lord & Benoit, LLC estimates a much lower cost of compliance, approximately 0.8% of sales (Benoit 2008). Because smaller firms

are not required to comply, costs can only be estimated, and the cost of compliance may be disproportionately higher for smaller public firms (Benoit 2008).

In response to the costs-and-benefits concerns, the SEC extended the 404 compliance dates for non-accelerated filers several times. The amendment issued by the SEC on September 2<sup>nd</sup>, 2008 allows “non-accelerated filers to include in their annual reports, pursuant to rules implementing Section 404(b) of the Sarbanes-Oxley Act of 2002, an attestation report of their independent auditors on internal control over financial reporting for fiscal year ending on or after December 15, 2009.” This date has since been pushed back pending further SEC study. Non-accelerated filers are generally companies with less than \$75 million in non-affiliated market capitalization.

This extension also applies to newly public companies. IPO firms are not required to comply with Section 404(a) and (b) until the second annual report (10K). The deferral of Section 404 requirements for IPO firms (especially the extension for non-accelerated filers) provides us a unique setting to study the impact of voluntary compliance of Section 404 at the time of IPOs (e.g. first annual report filed under 10-K), and its effect of IPO underpricing. Our study contributes to the ongoing debate regarding costs and benefits of Section 404, and the voluntary disclosure and IPO underpricing literature in at least three ways. First, we examine the determinants of voluntary Section 404 compliance for IPO firms. Second, the findings of this study provide insight into the benefits of Section 404 compliance in terms of reducing underpricing for IPO firms and the perceived benefit of 404 disclosures from the perspective of investors. Third, the literature related to IPO underpricing suggests the level of underpricing is related to the various aspects of the “quality” (i.e., the transparency and corresponding riskiness) of the IPO. Prior studies measure the quality of IPO firms in several ways such as the quality of accruals, the reputation of auditors and underwriters, and venture capital certification. We investigate whether voluntary compliance of Section 404 is an additional signaling mechanism used by IPO firms to convey their quality to the market.

The rest of the paper proceeds as follows. Section 2 provides institutional background and reviews literature related to SOX 404. Section 3 discusses theoretical considerations relating IPO underpricing and voluntary compliance with SOX 404. Section 4 describes the sample and provides descriptive statistics. Findings are reviewed in Section 5 and Section 6 concludes.

## Review of Literature

Section 404 of the Sarbanes-Oxley Act requires U.S. public company to disclose in its annual report (Form 10-K) and quarterly report (Form 10-Q), management’s assessment of the effectiveness of internal control structure and procedure. In addition, the company’s auditor is required to attest to management’s assessment. The objective of SOX 404 is to inform investors about any weaknesses in the company’s internal control that potentially dampens the reliability of financial information provided by the company. Auditing standards (AS No.2) define three types of internal control weaknesses: control deficiencies, significant deficiencies, and material weakness. Material weakness “is a significant deficiency, or combination of significant deficiencies, that results in more than a remote likelihood that a material misstatement of the annual or interim financial statements will not be prevented or detected” (AS No. 2 paragraph 10). Material weaknesses in internal control can result in potential misstatements due to both unintentional errors and intentional misrepresentation of accounting numbers.

Empirical evidence provided by prior studies supports the link between internal control weakness and earnings quality. Ashbaugh-Skaife, Collins, Kinney and Lafond (2008) investigate whether firms disclosing internal control deficiencies have lower quality accruals, and larger (in magnitude) abnormal accruals. They posit that when firms have weakness in their internal control, both unintentional errors and intentional misrepresentations of accounting numbers (e.g. earnings management) result in poor accruals quality. They find that (absolute) abnormal working capital accruals are larger for firms with internal control deficiencies than firms without deficiencies. The quality of accruals, as measured by the mapping of accruals to future cash flows, is lower for firms with internal control deficiencies. Furthermore, in subsequent years, accrual quality increases as internal control improves (e.g. going from an adverse to an unqualified auditor opinion on Section 404). Doyle, Ge and McVay (2007a), using different measures of accruals quality, also document a relation between weak internal controls and lower accrual quality. They further show that this

relationship is more concentrated in firms with company-level material weakness than in firms with account-specific problems, which are more easily detected and corrected by auditors prior to issuing financial statements.

Doyle, Ge, and McVay (2007b) examine the determinants of different internal control problems: account-specific weakness and company-level weakness. They find that the group of firms reporting account-specific weaknesses generally includes larger firms, older firms, and firms with good financial health, more complex operation, and growth. Examining the internal control weakness disclosures provided by firms, Ge and McVay (2005) show that inadequate accounting resources are the primary causes for internal control weakness. Moreover, most account-specific material weaknesses are related to accrual accounts (e.g. accounts receivable and inventory).

From the firms' perspective, one direct benefit of improved financial reporting, through disclosing managements' and auditors' assessment on internal control over financial reporting, is the potential reduction in cost of capital. That is, investors should demand a higher risk premium for firms with poor financial reporting quality (resulting from weakness in internal control). Credit-rating agencies view internal control weakness as an important factor in their credit rating process (Moody's Investor Service 2004). Empirical evidence however shows mixed evidence as to whether the effectiveness in internal control is linked to the cost of capital. Ashbaugh-Skaife et al. (2008) document a positive association between internal control weaknesses identified under Section 302 and Section 404 and cost of capital. However, Ogneva, Subramanyam and Raghunandan (2007) show that this relationship disappears after controlling for firm characteristics and for analyst forecast bias.

There are also market-based studies and voluntary disclosure studies that focus on the topic of internal control and financial reporting. Market-based studies provide insight into whether managers' and auditors' assessments of internal controls are informative to the market. Specifically, these studies attempt to answer the question of whether disclosures about internal control weakness cause investors to revise their price valuations. Hammersley, Myers and Shakespeare (2008) examine the market reaction to three types of internal control weakness<sup>1</sup>. Market reaction is strongest to disclosures about material weakness (-0.95%); the three-day size-adjusted return is -0.75% when firms disclose significant deficiencies; and there is significant market reaction to disclosures about control deficiencies by themselves. Beneish, Billing and Hodder (2008) conduct a similar study but find no significant market reaction to Section 404 disclosures, taking into account prior Section 302 disclosures. One interpretation of this finding is that accelerated filers (under Section 404) are larger firms with greater financial media and analyst coverage. Therefore disclosure under Section 404 does not provide incremental information to the market. Another interpretation is that audited internal control disclosures as required by Section 404b reflect a lower materiality threshold for disclosure (Doyle et al. 2007b).

In the voluntary disclosure literature, Bronson, Carcello, and Raghunandan (2006) investigate the characteristic of firms that issue voluntary management reports on internal control prior to SOX. These firms voluntarily disclosed management reports on internal controls to state explicitly management's responsibility for internal control, the objectives of the internal control system, and management's assessment of the effectiveness of internal controls (similar to the requirements under SOX 302 and 404). The disclosures are meant to reduce information asymmetry and reduce uncertainty as to the quality of the firms' financial information.

Bronson et al. (2006) also notes that there are costs associated with voluntarily disclosing information about firms' internal controls. Since the disclosure is included in annual reports, such information is subjected to the SEC's disclosure rules pertaining to the firm's 10-K. Thus, the management's assessment on internal control over financial reporting can potentially expose the firm to additional legal obligations. Ashbaugh-Skaife et al. (2008) examine the characteristics of firms that disclose internal control deficiencies. Their study differs from Bronson et al. (2006) in that their focus is on firms that voluntarily disclose internal control deficiencies instead of a general assessment of internal controls over financial reporting. Specifically, Ashbaugh-Skaife et al. (2008) suggest that the incentive to disclose internal control deficiency allows management "get in front of the issues" or to signal to the market that the deficiency has been acknowledged

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<sup>1</sup> Defined as disclosure under SOX 302

before more serious problems, such as restatement occur. At the same time, disclosing internal control deficiency is not without costs. Disclosing internal control deficiencies may damage management's reputation and investors may also question the reliability of the firms' financial statements.

## **IPO Underpricing and Voluntary Compliance with SOX 404**

Models of asymmetric information by Rock (1986) and Welch (1996) indicate that the information asymmetry between issuers and investors is pronounced during the IPO process, and that this information asymmetry is "priced" by the market when it extracts a percentage of the issue value in the first day of trading (underpricing). The greater the ex-ante uncertainty regarding the issue, the greater the first day return to those who buy the issue at the IPO price. Thus, IPO underpricing proxies for investors' perception of the riskiness of an IPO. Investors are more likely to pay a premium (thus less underpricing) for firms with higher 'perceived' quality, and lower risk. In the case of IPOs, firms have incentives to (voluntarily) be compliant with SOX404 only if the benefit exceeds the compliance cost. Prior studies suggest that firms engaging in IPOs use a range of signaling mechanisms (e.g. auditor and underwriter reputation, management ownership, direct disclosures related to governance and operations, and earnings guidance) to communicate private information to outside investors and reduce uncertainty about the firm's value, in an attempt to reduce underpricing and leave less money on the table in the IPO process.

Signaling theory, as it pertains to IPOs, indicates that "certifying agents" may provide information to the market that reduces perceived information asymmetry, and thus, risk, in the IPO process (Booth and Smith 1986; Megginson and Weiss 1991). Underwriter and venture capital reputation may also signal the quality of IPO firms. Higher quality investment banks are unwilling to risk reputational capital in the market by underwriting weaker issues (Loughran and Ritter 1997). Barry, Muscarella, Peavy, and Vetsuypens (1990) and Megginson and Weiss (1991) argue that venture capital firms similarly provide a "certification effect," in that they will only take an equity stake in a firm whose cash flow prospects they view positively, thereby reducing perceived risk. However, Gompers (1996) argues that venture capital firms may "grandstand" and bring firms to the market too early, and Francis and Hasan (2001) find that firms with venture capital backing experience greater underpricing than those without.

The accounting literature investigates the role of the auditor as the "certifying agent." Auditor reputation (as a proxy for auditor quality) is often viewed as a means by which to signal the credibility of firms' financial information. Prior studies provide evidence showing that IPO firms are willing to employ reputable auditors in an attempt to signal the quality of the IPO, and reduce IPO underpricing.

Titman and Trueman (1986) and Michaely and Shaw (1995) are among the first to suggest auditor reputation as a signaling mechanism for IPO firms. They suggest that high quality auditors are more likely to detect and disclose adverse financial information about issuing firms. Thus, IPO firms with favorable information have an incentive to hire reputable auditors to convey this information to the market. Beatty (1989) empirically tests the link between auditor reputation and IPO underpricing. Using a Big Eight/non-Big Eight classification and audit fees as proxies for auditor reputation, he shows that hiring a reputable auditor reduces underpricing for IPO firms. Menon and Williams (1991) test the auditor credibility hypothesis, which suggests that investors are willing to pay a premium for IPO firms with credible auditors. They examine auditor changes prior to IPOs, and the association between fees charged by underwriters and auditor credibility. They document auditor changes from small to large and more reputable auditors prior to IPOs. Firms with auditor changes prior to IPOs are generally those with prestigious underwriters as well. Fees charged by underwriters are lower for IPO firms with reputable auditors in the case of firm commitment IPOs.

Copley and Douthett (2002) examine how different signaling mechanisms (auditor choice, retained ownership, and earnings disclosure) are determined jointly and simultaneously by IPO firms. They show that firms with higher risk tend to choose higher quality auditors, consistent with Datar, Feltham and Hughes (1991)'s prediction that high risk firms prefer to use auditor reputation rather than retained ownership as a signaling mechanism because retaining ownership is more costly. They also find that retained ownership is associated with firm risk, auditor choice and earnings disclosure. Wang and Iqbal (2006) extend Copley and Douthett (2002)'s study by relaxing the assumption that audit service is a normal good. They posit that audit

quality differs in dimensions other than audit pricing. They also increase the sample by including the firms with one year of pre-IPO earnings. In contrast to the findings of Copley and Douthett (2002), Wang and Iqbal (2006) show that auditor choice and retained ownership are not substitutes. High risk firms are more likely to use retained ownership than auditor reputation as a signaling mechanism.

## Hypothesis Development

Collectively, the studies discussed above demonstrate that signaling can be useful in reducing the ex-ante uncertainty surrounding an IPO, and correspondingly, the extent of IPO underpricing. We now examine whether managerial actions also provide a credible signal to the market which reduces ex-ante uncertainty as well. Firms with no deficiencies or weaknesses in their internal controls have an incentive to comply with Section 404 in order to convey information about their financial reporting quality to the market. On the other hand, firms with weak internal controls would not want to disclose their weakness. More importantly, if investors view Section 404 compliance as a signal for IPO firm quality, then investors will reward this practice by paying a premium for these IPOs. As a result, underpricing should be lower for firms that voluntarily comply with Section 404.

On the other hand, it is possible that IPO firms will voluntarily comply with 404 in an attempt to signal quality, but there may be little or no incremental benefit of compliance because the firm's other signals for quality are considered to be sufficient, or, because external certification of internal controls is not considered by the market to be value relevant. In this case, investors may not view 404 compliance as providing incremental information about the quality of the IPO firm. Additionally, because compliance costs are high, the benefit of Section 404 compliance may not outweigh the costs. In this case, we will not observe a significant relationship between the magnitude of underpricing and Section 404 compliance. Taken together, this leads to our first hypothesis:

*H1: Voluntary compliance with Section 404 reduces the magnitude of underpricing for IPO firms.*

Our second research question examines the market performance of IPO firms in the post-issue period. Prior studies generally show that IPO firms underperform their benchmark in subsequent years after the IPO. Ritter (1991) documents an approximately 30% difference in post-issue period stock returns between IPO firms and their benchmark. Jain and Kini (1994) also document IPO firms' underperformance in the post-issue period using measures such as the change in operating income and the change operating cash flow. However, other studies document variation in the extent of aftermarket underperformance across IPO firms. Doukas and Gonenc (2005) find that venture capital backed firms outperform other IPO firms; Carter and Manaster (1990) and Carter, Dark and Singh (1998) document a positive relationship between underwriter reputation and aftermarket performance. If voluntary compliance of 404 is an indication of high quality of internal controls, and if high quality internal controls are important, then we should observe better market performance in the post-issue period for IPO firms which voluntarily comply with Section 404 at the time of issue, *ceteris paribus*.

*H2: Voluntary compliance of Section 404 is positively related to market performance in post-issue period.*

## Sample Selection and Methodology

Our sample consists of a total of 493 firms that went public from 2002 to 2006. To determine whether a firm complies with Section 404 during the issue year, we review the S-1 filed by each firm at the time of IPO. In our sample, 98 firms voluntarily complied with Section 404 by providing information on management's evaluation on the effectiveness of internal control and the auditor's attestation on management's assessment. 275 firms, which did not fully comply with Section 404, provided some information about the effectiveness of internal control over financial reporting. The remaining 120 firms did not disclose any information about their internal control. As shown in Table 1, the sample covers a total of 47

**Table 1.** Descriptive Statistics

Panel A. IPO Firms Distribution by Year			
Year	# of IPO Firms	% of Total Sample	
2002	13	2.97%	
2003	42	9.61%	
2004	139	31.81%	
2005	119	27.23%	
2006	124	28.38%	
Total	437	100.00%	

  

Panel B. IPO Firms Distribution by First 2 Digit SIC Code			
Two-Digit SIC	Industry	# of Obs.	% of Sample
01-09	Agriculture	1	0.23
10-14	Mining	19	4.35
15-19	Construction	5	1.14
20-21	Food and tobacco	4	0.92
22-23	Textiles and apparel	1	0.23
24-27	Lumber, furniture, paper, and print	10	2.29
28	Chemical and Pharmaceuticals	61	13.96
29-30	Petroleum, rubber, and plastic	4	0.92
31-32	Leather, stone, and glass	2	0.46
33-34	Primary and fabricated metals	6	1.37
35-36	Machinery	57	13.04
37	Transport equipment	8	1.83
38-39	Instruments and misc. manuf.	39	8.92
40-47	Transport	26	5.95
48	Communications	25	5.72
49	Utilities	5	1.14
50-51	Wholesale trade	12	2.75
52-59	Retail trade	33	7.55
70-71	Hotels and personal services	4	0.92
72-89	Services	115	26.32
90-99	Public administration and others	0	0.00
Total		437	100.00

Industries from 2002 to 2006<sup>2</sup>. IPO firms are not concentrated in a few industries, suggesting our sample is not subject to an industry bias, although the majority of the firms in our sample went public post-2004.

The empirical tests examine the effect of disclosure of internal control on IPO underpricing and IPO firms' long-term performance. IPO firms in our sample are classified into three groups based on their compliance with SOX 404 and disclosure of information about internal controls. The compliance group (SOXcomp) consists of IPO firms that report both (a) management's evaluation on the effectiveness of internal control over financial reporting, and (b) auditor's attestation on management's assessment of the adequacy of international controls. The second group of IPO firms (Mcomp) includes firms that only disclose

<sup>2</sup> Of the full sample, 493 firms, 437 have complete underpricing data for the statistics in Table 2, and are thus described in Table 1. We lose one observation for the "underpricing" regression in Table 3 (436 firms). For the BHAR statistics and regression, which do not require underpricing data, we have 493 observations, and we lose 6 observations for the cross-sectional regression of BHAR in Table 4, bringing the sample down to 487.

management's assessment of internal control but do not provide opinions from their auditors. The last group of IPO firms does not disclose any information about their internal controls on form 10K.

As an additional test of underpricing and long-term performance, we combine the SOXcomp and the Mcomp groups. The idea is that IPO firms are subjected to monitoring by internal and external parties such as auditors, boards, analysts, rating agencies, and the financial media. IPO firms are likely to provide higher quality financial information because of these monitoring mechanisms (Ball and Shivakumar 2006). Thus, management's assessment of internal control over financial reporting may be just as effective as additional auditor's attestation on managements' opinion.

To examine the effect of Section 404 Compliance on underpricing, we estimate the following regression model:

$$UP_{it} = \beta_0 + \beta_1 SOXcomp_{it} + \beta_2 Mcomp_{it} + \beta_3 Big4_{it} + \beta_4 VC_{it} + \beta_5 UWR_{it} + \beta_6 INTERNET_{it} + \beta_7 SIZE_{it} + e \quad (1)$$

where: UP is underpricing defined as (IPO-day closing price – IPO offer price) / IPO offer price, SOXcomp is equal to 1 if the IPO firm provides management's evaluation on the effectiveness of internal control and auditor's attestation on management's assessment; 0 otherwise, Mcomp is equal to 1 if the IPO firm provides only management's evaluation on the effectiveness of internal control; 0 otherwise, Big4 is equal to 1 if the IPO firm is audited by one of the Big 4 accounting firms; 0 otherwise, VC is equal to 1 for venture capital-backed IPOs; 0 otherwise, UWR is equal to 1 if the underwriter for the IPO firm has a rating above the mean using the Carter et al. (1998) ratings; 0 otherwise, INTERNET is equal to 1 if the IPO is issued by an Internet firm, using the Loughran and Ritter (2004) classification; 0 otherwise, SIZE is the natural log of total assets<sup>3</sup>.

In an additional test, we combine the SOXcomp and Mcomp samples and use only one indicator variable (Qcomp) in the model. Qcomp is equal to 1 if the IPO firm provides at least management's evaluation on the effectiveness of internal control; 0 otherwise. All other variables remain the same.

We expect to find a negative relationship between underpricing and venture capital involvement as per Lee and Wahal (2004) and Loughran and Ritter (2004). We anticipate finding that firms with higher underwriter reputation will experience lower underpricing, as per Carter et al. (1998).

We next examine the effect of Section 404 compliance on the long-term performance of the IPO firms. Long-term performance is measured using long term abnormal stock returns over three time intervals of 6 months, 12 months, and 24 months after the issue<sup>4</sup>. We follow the standard measurement procedure utilized in the IPO and acquisition literature (see, e.g., Brav and Gompers 1997; Field and Karpoff 2002), where we calculate the issuer's factor-adjusted abnormal return over each time horizon based on the Fama and French (1992) three factor model. To prevent survivorship bias from confounding the returns estimation procedure, returns are calculated for the 24 month post-IPO period or until delisting. We estimate the regression model as follows:

$$BHARs_{it} = \beta_0 + \beta_1 SOXcomp_{it} + \beta_2 Mcomp_{it} + \beta_3 Big4_{it} + \beta_4 VC_{it} + \beta_5 UWR_{it} + \beta_6 INTERNET_{it} + \beta_7 SIZE_{it} + \beta_8 EPS_{it} + \beta_9 LEV_{it} + e \quad (2)$$

Where BHARs is the long run abnormal returns over 6 months, 12 months, and 24 months respectively, EPS is earnings per share (basic), Leverage is total long term debt / total assets. All other variables are previously defined.

## Results

<sup>3</sup> We also use the log of market value with qualitatively similar results.

<sup>4</sup> We also use industry adjusted ROA as a performance measure, with qualitatively similar results.

We first provide the descriptive statistics regarding underpricing and post-IPO performance. These results are shown in Table 2.

**Table 2.** Underpricing and Post-IPO Performance: Univariate Tests

Panel A: Full Sample		N	Mean	Median
% of VC Back	46%			
% of Big4 Auditor	87%			
Underpricing		437	12.36%	8.70%
BHARs - 6 mos		493	-0.83%	-5.67%
BHARs - 12 mos		493	4.85%	-4.47%
BHARs - 24 mos		493	-0.90%	-17.56%

  

Panel B: Comparison between IPO Firms comply with SOX 404 and IPO firms do not comply						
	SOX 404 Compliance			No-Compliance		
	N	Mean	Media n	N	Mean	Median
Underpricing	82	12.09%	7.91%	355	12.46%	9.00%
BHARs - 6 mos	98	-3.07%	-6.84%	395	-0.27%	-5.41%
BHARs - 12 mos	98	3.74%	-7.45%	395	5.13%	-3.01%
BHARs - 24 mos	98	0.68%	-6.84%	395	-1.30%	-19.28%

  

Panel C: Comparison among IPO firms compliant with SOX 404, firms compliant with 404(a), and firms that are not compliant									
	Compliance			Manager Only			None		
	N	Means	Media n	N	Means	Median	N	Means	Median
Underpricing	82	12.09%	7.91%	248	12.60%	9.40%	107	12.02%	7.43%
BHARs - 6 mos	98	-3.07%	-6.84%	275	-1.52%	-8.00%	120	2.60%	-1.96%
BHARs - 12 mos	98	3.74%	-7.45%	275	3.57%	-3.00%	120	8.70%	-1.33%
BHARs - 24 mos	98	0.68%	-6.84%	275	-0.21%	-19.30%	120	-3.79%	19.22%

Panel A provides descriptive statistics for underpricing and post-IPO performance for the overall sample. Sample IPO firms exhibit mean (median) underpricing of 12.36% (8.70%). Mean (median) industry-adjusted, buy and hold abnormal returns for sample firms overall are -0.83% (-5.67%) over the first 6 months following the IPO, consistent with research documenting underperformance. Over the first 12 months following the IPO, mean (median) post-IPO performance is 4.85% (-4.47%), respectively. Over the two years following the IPO, sample firms experience underperformance of -0.90 (17.56%) relative to the industry. Panel B breaks down the sample by firms that are compliant with SOX 404, in that they disclose internal control information at the time of the IPO, versus those that do not. Firms that are compliant exhibit lower mean and median underpricing versus those that are not. For the 6 and 12 month horizon immediately following the IPO, compliant firms have inferior performance and underperform as compared to noncompliant firms. For the 24 month post-IPO horizon, compliant firms exhibit superior performance versus noncompliant firms according to the mean value of the returns, however the median value for returns of compliant firms is much lower than noncompliant firms. These results provide evidence that compliance



with SOX 404 is perceived by the market as providing a reduction in risk at the time of the IPO, as reflected in lower underpricing. However, firms that incur the costs of compliance do not appear to outperform those that do not comply.

Panel C provides descriptive statistics on underpricing and post-IPO performance for firms that are fully compliant with SOX 404, those that provide only a managerial discussion of internal controls, and those that provide no information whatsoever at the time of the IPO. We find that firms that do not comply whatsoever exhibit the least underpricing, whereas those where the managers provide an assessment of internal controls exhibit the highest mean (median) levels of underpricing. Further, firms that do not comply with SOX 404 exhibit the highest levels of post-IPO performance over the six and twelve month performance assessment periods. Over the 24 months following the IPO, firms that are fully compliant with SOX at the time of the IPO exhibit the highest post-IPO buy and hold returns, followed by firms where management provides a discussion of internal controls, and, lastly, by firms that provide no information at the time of the IPO regarding internal controls. However, median buy and hold returns are substantially greater for the firms not complying with 404. Taken together, the results do not provide unequivocal evidence regarding whether compliance with SOX, or degrees of compliance, impacts perceived risk of firms at the time of the IPO, or post-IPO performance. Overall, these results suggest that expending the managerial and financial resources to be fully compliant with SOX 404 does not either signal superior future performance at the time of the IPO or result in better long term performance following the IPO.

We next investigate whether compliance or levels of compliance with SOX 404 impact underpricing in a multivariate framework. The results are shown in Table 3.

**Table 3.** Regression Results: Dependent Variable is Underpricing

	<i>Coeff.</i>	<i>t</i>		<i>Coeff.</i>	<i>t</i>
<i>Intercept</i>	3.16729	0.68		3.09275	0.66
<i>Qcomp</i>	0.14623	0.08			
<i>SOXcomp</i>				-0.73990	-0.29
<i>Mcomp</i>				0.44492	0.22
<i>Big4</i>	3.15108	1.23		3.09477	1.2
<i>VC</i>	4.83904	2.69 ***		4.98378	2.73 ***
<i>UWR</i>	1.15777	0.64		1.13938	0.63
<i>INTERNET</i>	7.42846	2.55 **		7.45885	2.56 **
<i>SIZE(log)</i>	0.58211	0.84		0.59223	0.85
<i>N</i>	436			436	
<i>Adj. R-Sq</i>	0.0295 ***			0.0278 ***	

Variable description: *Qcomp* equals 1 if the IPO firm provides management's evaluation on the effectiveness of internal control over financial reporting, or auditor's attestation on management's assessment of the adequacy of international controls, or both; 0 otherwise. *SOXcomp* equals 1 if the IPO firm complies with SOX 404 (or provides assessment of internal control by both managers and auditors); 0 otherwise. *Mcomp* equals 1 if the IPO firm provide only managers assessment of internal control; 0 otherwise. *Big4* equals 1 if the IPO firm was audited by one of the Big 4 accounting firms; 0 otherwise. *VC* equals 1 if the firm is a Venture Capital-backed IPO; 0 otherwise. *UWR* equals 1 if the underwriter for the IPO is has a high rate; 0 otherwise. *INTERNET* equals 1 if the IPO firm is an internet firm; 0 otherwise. *SIZE* is the log of total assets. \*, \*\*, \*\*\* represent statistical significance at the 10, 5, and 1% levels, respectively.

We provide two models, where the dependent variable is the percent underpricing. The first model uses a dependent variable proxy for compliance that is equal to 1 if the firm is fully compliant and 0 if it is not fully compliant with SOX 404. The second model uses dummies for full compliance with SOX 404 and managerial disclosure of internal control issues. The results of the first model indicate that underpricing is not affected by compliance with SOX; the coefficient of *Qcomp* is not significantly different from zero. In the second model, neither the coefficients of *SOXcomp* nor *Mcomp* are statistically significant either. In terms of the other control variables, the coefficient of big 4 auditor is also insignificantly different from zero, consistent with Michaely and Shaw (1995). The presence of venture capital participation at the time of the

IPO and membership to the “internet” industry classification are significantly and positively related to underpricing, consistent with prior research (see, e.g., Gompers, 1996 and Loughran and Ritter (1997; 2004), while the size proxy is not.

Our regression results suggest that compliance with SOX 404, either fully or partially (i.e., through managerial discussions of internal control quality) does not reduce the perceived risk of the firm on the first day of trading. It appears that the market does not view the external certification regarding internal controls disclosed during the compliance process as meaningful or relevant information. Information regarding the operations of the firm and the structure of the board is already provided to the market during the IPO process itself, through the prospectus and registration statements, possibly reducing the value of the information from compliance, or making it redundant. For firms that do not comply with SOX 404 at the time of the IPO, there is no information regarding internal controls whatsoever in the prospectus or registration statement. The implication of this result is that information provided regarding internal controls through the SOX 404 certification process is not of particular interest to the market at the time of the IPO. Perhaps additional monitoring beyond that provided by the underwriter is not viewed by the market as particularly valuable. Additionally, the market may not perceive that the quality of information provided by managers of firms that comply with SOX 404 (either implicitly or explicitly) is superior to that of firms that do not comply. To ensure that multicollinearity does not pose a concern for our test statistics, we also examine the VIF factors for each regression, but do not document serious concerns with multicollinearity.<sup>5</sup>

We next examine whether compliance, or the extent to which compliance exists, with SOX 404 at the time of the IPO is a determinant of post-IPO performance. The results are shown in Table 4.

Panel A provides the results of regressions on 6, 12, and 24 month buy and hold abnormal returns of IPO firms using the QCOMP dummy variable to proxy for SOX 404 compliance. In all three models, the coefficient of QCOMP is insignificantly different from zero. Venture capital presence, size, EPS volatility, and leverage control variables are all significantly related to performance. While VC firms and firms with higher levels of leverage appear to exhibit weaker post-IPO performance, size is positively related to long term aftermarket returns. Panel B provides the results of our multivariate regressions using the SOXcomp and Mcomp proxies for SOX 404 compliance. In none of the three regression models are either compliance variables significant. Underwriter reputation, auditor quality, and internet industry membership are unrelated to performance proxies in both models. Again, we do not document substantial issues with our test statistics based on the VIF factors with multicollinearity.

If SOX 404 compliance resulted in better quality internal controls, we would anticipate finding that firms that voluntarily comply would exhibit superior post-IPO performance. However, taken together, the results in Table 4 indicate that compliance with SOX at the time of the IPO does not provide a signal regarding differential information provided to the market that results in meaningful outcomes for the aftermarket returns to IPO firms. One possibility is that internal controls at firms that are SOX compliant are not better than those of firms that are not compliant just because they are evaluated externally. This implies that external certification of internal controls is redundant or irrelevant, or the kinds of internal controls required by SOX do not impact long term performance in any economically or statistically significant sense. Another possibility is that only firms with strong internal controls voluntarily comply, and these firms are already perceived by the market as having good internal controls. As with the results of the analysis of underpricing, it would appear that compliance with SOX 404 is costly and time consuming, yet for newly public firms, it is not clear that it provides any benefits.

Our results suggest that compliance with SOX 404 does not impact underpricing (i.e., the perceived riskiness of the IPO firm). Additionally, we find that post-IPO long run returns are unrelated to compliance with SOX 404 at the time of the IPO. This provides evidence that Section 404 compliance does not benefit shareholders of firms at the time of the IPO in terms of reducing the money left on the table. Thus, unlike analyst coverage, it appears that SOX 404 compliance may not provide a particularly strong indicator to the market of the quality of internal control. It may also be the case that external certification of internal controls does not result in improved performance of IPO firms relative to their industry, size, and book-to-market controlled peers.

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<sup>5</sup> We thank an anonymous reviewer for this suggestion.

**Table 4.** Regression Results: Dependent Variable = Buy-and-Hold Abnormal Returns

Variable description: Qcomp equals 1 if the IPO firm provides management's evaluation on the effectiveness of internal control over financial reporting, or auditor's attestation on management's assessment of the adequacy of international controls, or both; 0 otherwise. SOXcomp equals 1 if the IPO firm complies with SOX 404 (or provides assessment of internal control by both managers and auditors); 0 otherwise. Mcomp equals 1 if the IPO firm provide only managers assessment of internal control; 0 otherwise. Big4 equals 1 if the IPO firm was audited by one of the Big 4 accounting firms; 0 otherwise. VC equals 1 if the firm is a Venture Capital-backed IPO; 0 otherwise. UWR equals 1 if the underwriter for the IPO is has a high rate; 0 otherwise. INTERNET equals 1 if the IPO firm is an internet firm; 0 otherwise. SIZE is the log of total assets. EPS is earnings per share (basic). LEV is a measure of leverage calculated as total long-term debt / total assets. \*, \*\*, \*\*\* represent statistical significance at the 10, 5, and 1% levels, respectively.

Panel A. Disclosure of Internal Control vs. No-Disclosure of Internal Control							
	6 Months BHARs			12 Months BHARs		24 Months BHARs	
	Coeff.	t		Coeff.	t	Coeff.	t
<i>Intercept</i>	-0.1174	-1.32		-0.17722	-1.21	-0.40022	-2.19 **
<i>Qcomp</i>	-0.0367	-0.99		-0.04001	-0.65	0.04304	0.56
<i>Big4</i>	0.04595	0.93		0.11488	1.41	0.16614	1.64
<i>VC</i>	-0.07399	-1.98 **		-0.05111	-0.83	-0.09913	-1.29
<i>UWR</i>	0.00733	0.21		-0.05214	-0.89	-0.02635	-0.36
<i>INTERNET</i>	0.00186	0.03		-0.00538	-0.06	-0.00984	-0.08
<i>SIZE(log)</i>	0.02925	1.98 **		0.04700	1.93 *	0.05900	1.94 *
<i>EPS</i>	0.01331	1.96 **		0.01190	1.06	0.02589	1.86 **
<i>LEVERAGE</i>	-0.13875	-1.60 *		-0.31113	-2.17 **	-0.25818	-1.44 *
<i>N</i>	487			487		487	
<i>Adj. R-Sq</i>	0.0313	***		0.0148	*	0.0252	***
Panel B. 404 Compliance vs. Assessment by Managers only vs. No-Disclosure of Internal Control							
	6 Months BHARs			12 Months BHARs		24 Months BHARs	
	Coeff.	t		Coeff.	t	Coeff.	t
<i>Intercept</i>	-0.11742	-1.32		-0.17722	-1.21	-0.40022	-2.19 **
<i>SOXcomp</i>	-0.03468	-0.72		-0.02784	-0.35	0.06144	0.62
<i>Mcomp</i>	-0.03746	-0.97		-0.04443	-0.69	0.03637	0.46
<i>Big4</i>	0.04608	0.93		0.11566	1.42	0.16731	1.65
<i>VC</i>	-0.07429	-1.97 **		-0.05290	-0.85	-0.10183	-1.31
<i>UWR</i>	0.00740	0.21		-0.05169	-0.88	-0.02567	-0.35
<i>INTERNET</i>	0.00187	0.03		-0.00530	-0.06	-0.00973	-0.08
<i>SIZE(log)</i>	0.02925	1.98 **		0.04703	1.93 *	0.05904	1.94 *
<i>EPS</i>	0.0133	1.96 **		0.01183	1.06	0.02580	1.85 **
<i>LEV</i>	-0.13384	-1.60 *		-0.31165	-2.17 **	-0.25897	-1.45
<i>N</i>	487			487		487	
<i>Adj. R-Sq</i>	0.0293	***		0.0128	*	0.0234	**

Our results suggest that compliance with SOX 404 does not impact underpricing (i.e., the perceived riskiness of the IPO firm). Additionally, we find that post-IPO long run returns are unrelated to compliance with SOX 404 at the time of the IPO. This provides evidence that Section 404 compliance does not benefit

shareholders of firms at the time of the IPO in terms of reducing the money left on the table. Thus, unlike analyst coverage, it appears that SOX 404 compliance may not provide a particularly strong indicator to the market of the quality of internal control. It may also be the case that external certification of internal controls does not result in improved performance of IPO firms relative to their industry, size, and book-to-market controlled peers.

## Conclusion

Newly public firms are not required to comply with SOX 404 for three years following their initial public offerings, but at the same time, are likely to be characterized by high levels of information asymmetry regarding cash flow and risk prospects relative to firms with a history of mandated disclosures. Accordingly, firms conducting IPOs provide a unique sample with which to investigate the benefits of voluntary disclosure with SOX 404 and the value of information revealed as a consequence of compliance. In this paper, we investigate whether voluntary compliance with SOX 404, either formally or partially, impacts the perceived risk of firms conducting IPOs on the first day of trading (reflected in underpricing) or following the IPO. We find no evidence that there is a statistically significant benefit to IPO firms from complying in any sense with SOX 404. Compliant firms do not experience lower underpricing, nor superior post-IPO performance over the 6, 12, and 24 months following the IPO. This result holds across compliance subgroups; fully compliant firms do not experience statistically lower underpricing or statistically higher post-IPO performance than firms where managers reveal information regarding internal controls.

We cannot rule out the possibility that our findings are affected by a self-selection bias, as firms that have stronger internal controls are more willing to comply. However, the results of our study are consistent with a survey performed by Alexander, Bauguess, Bernile, Lee, and Marietta (2013). The corporate insiders in their survey do not believe that the benefits achieved from SOX 404 compliance outweigh the costs. It is also possible that there are other benefits from SOX 404 that are not effectively measured by firm returns. For example, Cassell, Myers, and Zhou (2013) find that SOX 404 compliance reduces the cost of capital.

Our results provide insights into the value of SOX 404 compliance for managers of firms considering or preparing to conduct IPOs, as well as for regulators. First, there does not appear to be a benefit to managers from diverting financial or managerial resources away from the operations of the firm towards compliance with SOX 404 at the time of the IPO in terms of money left on the table. Secondly, revealing information regarding internal controls, and having an external audit of internal controls in order to comply with SOX 404 does not appear to provide meaningful benefits to firm value in periods up to the two years following the IPO.

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