INTERNAL CONTROL AND FINANCIAL QUALITY: EVIDENCE FROM POST-SOX RESTATEMENT

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ABSTRACT

Studies of post-SOX restatements have examined the cause of the increase and have documented the association with internal controls in a negative light. In general, restatements result from internal control problems because internal controls are the first line of defense for financial statement quality. However, prior research ignores internal controls have different quality levels and may make various impacts on restating companies. Thus, this study examines the association between restatements and internal controls by examining whether and how internal control quality affects degree of restatement severity. Empirical results show that restatement severity increases in degree of internal control deficiency under among three definitions of internal control quality.

JEL: M41, G32, G24, K20

KEYWORDS: Internal control, Financial quality, Restatement

INTRODUCTION

Auditing Standard No. 2 points out that a restatement of previous financial statements to reflect error correction shows at least a significant deficiency and strongly indicates material weakness. Statement on Auditing Standards (SAS) No. 99 (AU 316) also points out that extent of auditing procedures must address identified risks of material misstatement resulting from fraud. In the post-Enron era, auditors face challenges identifying red flags because of the growing number of restatements, especially restatements have become much more common (Grothe, Pham and Saban, 2006 and Grothe, Saban, Plachecki, Lee and Post, 2007b). Previous research has suggested that restatements increase litigation risk (Palmrose and Scholz, 2004), and thus represent a higher risk to auditors because they make financial statement reliability questionable.

The Sarbanes-Oxley Act (hereafter called the SOX) of 2002 requires management and independent auditors to comply with Section 404 in assessing the effectiveness of company internal controls and to report their findings to investors. However, Section 404 does not require companies to keep enough internal control quality. Section 404 only requires management and auditors to test internal controls to see whether they are effective, and afterwards to inform investors of their effectiveness. Thus, regulators and the public have devoted considerable attention to whether internal controls are sufficient to ensure the accuracy of company financial statements, following the sharp increase in the number of restatements following SOX (Baldwin and Yoo, 2005, GAO, 2006, Grothe, Pham and Saban, 2006, Grothe, Goodwin, Iandera, Laurion and Freeland, 2007a, Grothe, Saban, Plachecki, Lee and Post, 2007b, Audit Analytics, 2007, PCAOB, 2007). The causes of restatements vary significantly among cases (Plumlee and Yohn, 2010, Scholz, 2008). However, restatements result from internal control problems because internal controls are the first line of defense for financial statement quality. Thus, I first focus on whether and how internal control quality is associated with restatement severity/restatement characteristics, because I argue that internal controls have different quality levels and may cause various influences on restatements.

The internal control system is supposed to improve financial reporting reliability and therefore should reduce the number of restatements (Plumlee and Yohn, 2010), but a restatement could signal a company lacks proper internal controls. In this study, I use three measurement methods to proxy for internal control

quality: (1) occurrence of internal control weakness; (2) type of internal control problem; and (3) number of internal control weaknesses and provide evidence suggesting that different levels of internal control deficiency can cause various degrees of severity on financial restatements.

LITERATURE REVIEW

Section 404 claims that effective internal controls assure investors that materially misstated financial statements are unlikely. Simply put, if internal controls are effective, the likelihood of intentional or unintentional errors being committed should be significantly reduced (DeFond and Jiambalvo, 1991). Therefore, internal control systems that companies establish over financial reporting should be designed to prevent or detect financial reporting misstatements (PCAOB, 2004). Thus, company internal control systems are important in error prevention and detection. Given poor internal control quality, subsequent restatements are highly likely. Some studies have demonstrated a link between internal control quality and the likelihood of subsequent financial restatements (Hammersley, Myers and Shakespeare, 2008, Plumlee and Yohn, 2010). Ashbaugh-Skaife, Collins and Kinney (2007), Grothe, Goodwin, Iandera, Laurion and Freeland (2007a) and Grothe, Saban, Plachecki, Lee and Post (2007b) also indicate that companies with material weaknesses often find it necessary to restate earnings, and material weakness is often disclosed following restatement. This raises the question of whether and how weakness in material internal control affects company restatement severity.

This study focuses solely on restating companies as research samples to build on the earlier empirical findings, because restatements are of significant concern to investors, managers, regulators, issuers, auditors, boards of directors and academics, and their information content has not been fully explored. This study differs from previous studies, I attempt to examine the association between restatements and internal controls by examining whether and how internal control quality affects degree of restatement severity, because restatement severity matters to the market, and assessments of internal control quality can potentially provide useful and timely information to investors. For example, Li, Scholz and Wang (2006) indicates that investment reaction to restatements differs according to knowledge of company internal control quality. Following Grothe, Goodwin, Iandera, Laurion and Freeland (2007a) and Grothe, Saban, Plachecki, Lee and Post (2007b), this study considers three measurement methods as proxies for internal control quality: (1) occurrence of internal control weakness; (2) type of internal control problem; and (3) number of internal control weaknesses to examine whether a positive relationship exists between internal control weaknesses and restatement severity. Further, I examine how internal control quality affects restatement characteristics.

DATA AND METHODOLOGY

This study first uses Compliance Week database to identify internal control weaknesses. And then, I cross-check internal control weaknesses by searching each SEC filing (e.g., 10-K, 10-K/A, etc.) to ensure disclose of any material weakness in internal control. Prior studies mostly focus on the existence of control weakness. However, different types of weakness have different effects. Following Grothe, Goodwin, Iandera, Laurion and Freeland (2007a) and Grothe, Saban, Plachecki, Lee and Post (2007b), this study classifies various types of internal control weakness disclosure into two types: account-specific material weaknesses and company-level material weaknesses. This study hand-collects data on the dates of initial restatement announcements and restatement characteristics from the Lexis-Nexis News Library, which covers all interim and annual restatements announced from 2004 through 2005. Identifying precise announcement dates for restatements is challenging. This study thus only considers the first release of the restatement announcement of each company in a given year. Company-level accounting data are obtained from the Standard and Poor's Compustat Annual Industrial, Research, and Full Coverage files.

The sample consists of companies that announced restatements from 2004 to 2005. Table 1 explains the sample construction. As reported in Table 1, Panel A, companies are excluded from my sample for the following reasons. First, I exclude technical restatements for 33 companies. Second, I exclude 3 companies lacking identifying information, such as perm number, cusip, gvkey, or cnum. Third, I cannot find 8-K, 10-K/A, 10-Q/A or restatement data for 67 companies. Fourth, internal control data is missing for 199 companies and thus these companies are excluded. Fifth, 91 companies are excluded because of missing Compustat financial data. My final sample is composed of 403 restating companies.

Panel B provides the distribution of research samples by the year of announcement. The distribution shows a higher percentage of restatements announced in 2005, moreover, about 72.08% of the restatements in the internal control weakness subsample. Panel C details the industry composition of restatement companies. The industry that is most heavily represented (23.57% of sample companies) is retailing. Moreover, Panel C also shows that retailing and durable goods manufacturing industries have the highest percentages of restatements in the internal control weakness subsample (20.13% and 20.13%, respectively).

Table 1: Sample Selection

Panel A: Number of observations lost because of data requirements		
Total number of restatements announced from 2004 to 2005		796
Less: Restatements of technical reasons	33	
Observations without perm number, cusip, gvkey, cnum, etc.	3	
Observations with missing restatement data	67	
Observations with missing internal control data	199	
Observations not on Compustat or with missing Compustat data	91	
		(393)
Final Sample		403

Panel B: Year of restatement announcement						
	2004		**2005**		**Total**	
Year	Obs.	%	Obs.	%	Obs.	%
ICW [a]	43	39.81%	111	37.63%	154	38.21%
Non-ICW	65	60.19%	184	62.37%	249	61.79%
Total	108	100%	295	100%	403	100%

Panel C: Industry distribution of sample companies						
	ICW		**Non-ICW**		**Total**	
Industry [b]	Obs.	%	Obs.	%	Obs.	%
Mining & construction	3	1.95%	5	2.01%	8	1.99%
Food	2	1.30%	1	0.40%	3	0.74%
Textiles & printing / publishing	5	3.25%	10	4.02%	15	3.72%
Chemicals	1	0.65%	2	0.80%	3	0.74%
Pharmaceuticals	7	4.55%	7	2.81%	14	3.47%
Extractive	1	0.65%	7	2.81%	8	1.99%
Durable manufacturers	31	20.13%	24	9.64%	55	13.65%
Transportation	8	5.19%	17	6.83%	25	6.20%
Utilities	3	1.95%	17	6.83%	20	4.96%
Retail	31	20.13%	64	25.70%	95	23.57%
Financial services	18	11.69%	47	18.88%	65	16.13%
Services	17	11.04%	24	9.64%	41	10.17%
Computers	27	17.53%	24	9.64%	51	12.66%
Total	154	100.00%	249	100.00%	403	100.00%

[a] *ICW and Non-ICW divide samples based on whether companies with internal control weaknesses or without internal control weaknesses.*

[b] *Industry membership is determined by SIC code as follows: mining and construction (1000-1999, excluding 1300-1399), food (2000-2111), textiles and printing/publishing (2200-2799), chemicals (2800-2824, 2840-2899), pharmaceuticals (2830-2836), extractive (1300-1399, 2900-2999), durable manufacturers (3000-3999, excluding 3570-3579 and 3670-3679), transportation (4000-4899), utilities (4900-4999), retail (5000-5999), financial services (6000-6999), services (7000-8999, excluding 7370-7379), and computers (3570-3579, 3670-3679, 7370-7379).*

This study estimates equation (1) and equation (2) to test the relationship between restatement severity and internal control weakness. Specifically, this investigation not only includes four restatement characteristics (*CORE*, *AMOUNT*, *ACCOUNTS*, *RYEARS*), but also uses a composite measure (*SEVERITY*) that captures overall company restatement severity. Also, this study uses three measures of internal control weakness: (1) existence of internal control weakness; (2) type of internal control deficiencies; and (3) number of internal control deficiencies.

$$SEVERITY_{i,t} = \alpha_0 + \alpha_1 ICQUALITY_{i,t} + \alpha_2 BIGN_{i,t} + \alpha_3 DEBT_{i,t} + \alpha_4 SALEGRW_{i,t} + \alpha_5 ROA_{i,t} + \alpha_6 LOSS_{i,t} + \alpha_7 SIZE_{i,t} + \alpha_8 CEOTURN_{i,t} + \alpha_9 ATTAU_{i,t} + \alpha_{10} ATTSEC_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$RESTATEMENT\,CHARACTERISTICS_{i,t} = \alpha_0 + \alpha_1 ICQUALITY_{i,t} + \alpha_2 BIGN_{i,t} + \alpha_3 DEBT_{i,t} + \alpha_4 SALEGRW_{i,t} + \alpha_5 ROA_{i,t} + \alpha_6 LOSS_{i,t} + \alpha_7 SIZE_{i,t} + \alpha_8 CEOTURN_{i,t} + \alpha_9 ATTAU_{i,t} + \alpha_{10} ATTSEC_{i,t} + \varepsilon_{i,t} \quad (2)$$

($CORE / AMOUNT / ACCOUNTS / RYEARS$)

where

SEVERITY = Combines four characteristics of restatement severity (*CORE*, *AMOUNT*, *ACCOUNTS*, *RYEARS*) into a single comprehensive variable;

CORE = 1 if a restatement involves revenue, cost of sales or on-going operating expenses, and 0 otherwise;

AMOUNT = Restated income (loss) less originally reported income (loss) over the restated period, scaled by book value of assets reported at year end prior to the restatement announcement;

ACCOUNTS = Number of account groups affected in a restatement. The seven account groups include revenue, cost of sales, operating expenses, one-time/special items, merger-related, non-operating expenses, and other items;

RYEARS = Sum of years restated, where fiscal year = 1 and each additional quarter = 0.25;

ICQUALITY = Uses three measurement methods to proxy for the weakness of internal control,
(1) 1 if a company has weak internal control, and 0 otherwise;
(2) type of internal control weaknesses;
(3) number of internal control weaknesses;

BIGN = 1 if the company's auditor is a Big N firm at announcement year, and 0 otherwise;

DEBT = 1 if the company has notes payable, and 0 otherwise;

SALEGRW = One-year percentage change in sales reported at announcement year;

ROA = Net income divided by book value of total assets reported at announcement year;

LOSS = 1 if operating income is less than zero reported at announcement year, and 0 otherwise;

SIZE = Natural log of the book value of total assets reported at announcement year;

CEOTURN = 1 if the CEO leaves the company within 24 months around (6 months before and 18 months after) the restatement announcement, and 0 otherwise;

ATTAU = 1 if companies having restatements prompted by the auditor, and 0 otherwise;

ATTSEC = 1 if companies having restatements prompted by SEC, and 0 otherwise;

ε = the residual term.

The dependent variable of equation (1), *SEVERITY*, captures comprehensive restatement severity. The dependent variable of equation (2), *RESTATEMENT CHARACTERISTICS*, considers individual restatement characteristics (*CORE*, *AMOUNT*, *ACCOUNTS*, *RYEARS*). Meanwhile, the test variable, *ICQUALITY*, measures internal control quality. From a review of the literature (DeFond and Jiambalvo, 1991, Kinney and McDaniel, 1989, Palmrose, Richardson and Scholz, 2004), this study includes four control variables to control for company financial condition: *ROA*, *LOSS*, *DEBT*, and *SALEGRW*. Prior researches indicate that restatements prompted by external parties (SEC and auditors) are more severe (Palmrose, Richardson and Scholz, 2004, Desai, Hogan and Wilkins, 2006b), I control for external prompter effects (*ATTSEC*, *ATTAU*). Boards replace CEOs more often for financial reporting problems (Srinivasan, 2005), I control for CEO replace effect (denoted by *CEOTURN*). Consistent with Dechow, Sloan and Sweeney (1996), and Desai, Krishnamurthy and Venkataraman (2006a), this study controls for

the company size effect (denoted by *SIZE*). Additionally, Farber (2005) reports a smaller proportion of brand-name audit firms in fraud companies compared to control companies. This study thus includes Big N CPA firms (denoted by *BIGN*) to control for auditor industry leadership.

The variable, *ICQUALITY*, captures company internal control quality. This study uses three measurement methods to proxy for internal control quality: (1) occurrence of internal control weakness; (2) type of internal control problem; and (3) number of internal control weaknesses. Following Grothe, Goodwin, Iandera, Laurion and Freeland (2007a) and Grothe, Saban, Plachecki, Lee and Post (2007b), this study categorizes the disclosed internal control problems into two major deficiency types: account-specific and company-level. Account-specific material weaknesses relate to controls over specific account balances or transaction-level processes. Meanwhile, company-level material weaknesses relate to more macro-level controls such as control environment or overall financial reporting process. To understand degree of internal control deficiency, this study also considers number of internal control weaknesses disclosured in their Internal Control over Financial Reporting. The dependent variable, *SEVERITY*, captures overall corporate restatement severity by combining four characteristics (*CORE*, *AMOUNT*, *ACCOUNTS*, *RYEARS*) of restatement severity. The first restatement characteristic is an indicator variable for core-earnings (denoted by *CORE*), which equals one if a restatement involves core earnings and zero otherwise. According to Penman (2001), core earnings in an income statement include sales revenue, cost of sales, and on-going operating expenses. This study includes *CORE* as a restatement characteristic because previous investigations have demonstrated that market participants regard restatements of core earnings as more serious because of their potential litigations and react negatively (Palmrose and Scholz, 2004, Palmrose, Richardson and Scholz, 2004). The second restatement characteristic, *AMOUNT*, measures the size (magnitude) effect of a restatement on net income. Following Palmrose, Richardson and Scholz (2004), Srinivasan (2005) and Collins, Masli, Reitenga and Sanchez (2009), this study calculates *AMOUNT* as the restated income (loss) less originally reported income (loss), scaled by the book value of total assets at the end of the year immediately preceding the restatement announcement.

This study measures the number of account groups affected (denoted by *ACCOUNTS*) as the third restatement characteristic. This study follows Palmrose, Richardson and Scholz (2004) by focusing on seven account groups in the income statement (i.e., revenue, cost of sales, operating expenses, one-time/special items, merger-related, non-operating expenses, and other items) and expects *ACCOUNTS* (which can range from one to seven) to be positively associated with cost of debt capital. Additionally, *CORE* captures the overall impact of accounting numbers, whereas *ACCOUNTS* indicates whether market participants consider the detailed line items (within the income statement) involved in a restatement and reacts accordingly. The fourth restatement characteristic, *RYEARS*, is measured using the number of years financial statements that are restated in a single restatement (where a fiscal year = 1 and a quarter = 0.25). Therefore, *RYEARS* captures the "cumulative compromise" of financial reporting quality over a specific length of time.

RESULTS

Table 2 provides descriptive data on the sample companies, partitioned by two subsamples: restating companies with internal control weakness (n = 154), and restating companies without internal control weakness (n = 249). As such, comparing two subsamples provides evidence regarding whether internal control environment affects degree of restatement severity.

First, the mean (median) of *SEVERITY* reported in the ICW subsample is significantly larger than those reported in the non-ICW subsample at the 0.01 level for both tests. Second, with respect to restatement characteristics, the means (medians) of restatement characteristics (*CORE*, *AMOUNT*, *ACCOUNT*, and *RYEARS*) reported in the ICW subsample are significantly larger than those reported in the non-ICW subsample. Univariate comparisons indicate that ICW companies have higher restatement severity than

non-ICW companies. Additionally, ICW restating companies are more likely to involve core-earnings, greater overstatement values, more account groups restated, and longer duration. Third, the mean (median) of *AUFEE* reported in the ICW subsample is significantly larger than those reported in the non-ICW subsample at the 0.01 level for both tests. This finding reveals that ICW companies have higher audit fees than non-ICW companies. Finally, ICW companies have higher CEO turnover rate (*CEOTURN*), receive more going-concern opinions (*GC*), have more notes payable (*DEBT*), perform worse (*ROA*) and suffer more losses (*LOSS*).

Table 2: Descriptive Statistics

	ICW [b] (n=154)		Non-ICW (n=249)		Differences [c]	
Variable [a]	**Mean**	**Median**	**Mean**	**Median**	***t* test**	***z* test**
SEVERITY	2.10	2.00	1.52	1.00	-4.92***	-4.69***
CORE	0.70	1.00	0.57	1.00	-2.78***	-2.71***
AMOUNT	-0.01	-0.00	-0.01	-0.00	1.59	4.05***
ACCOUNTS	1.20	1.00	1.12	1.00	-1.83*	-2.10**
RYEARS	2.15	1.75	1.55	1.00	-3.97***	-3.79***
BIGN	0.88	1.00	0.89	1.00	0.33	0.33
DEBT	0.38	0.00	0.29	0.00	-1.84*	-1.87*
SALEGRW	0.12	0.08	0.15	0.11	1.00	1.99**
ROA	-0.03	0.01	0.03	0.03	4.20***	6.07***
LOSS	0.42	0.00	0.18	0.00	-4.93***	-5.05***
SIZE	7.04	6.68	7.35	7.18	1.62	1.95*
CEOTURN	0.38	0.00	0.28	0.00	-2.10**	-2.13**
ATTAU	0.05	0.00	0.04	0.00	-0.56	-0.56
ATTSEC	0.03	0.00	0.04	0.00	0.20	0.20
AUFEE	14.72	14.56	14.33	14.14	-3.34***	-3.52***
TENURE	8.45	7.00	7.82	6.00	-1.06	-0.95
GC	0.56	1.00	0.34	0.00	-4.33***	-4.28***

[a] *The definitions of the variables reported in this table are: SEVERITY = Combines four restatement characteristics (CORE, AMOUNT, ACCOUNTS, RYEARS) into a single comprehensive variable; CORE = 1 if a restatement involves revenue, cost of sales or on-going operating expenses, and 0 otherwise; AMOUNT = Restated income (loss) less originally reported income (loss) over the restated period, scaled by book value of assets reported at year end prior to the restatement announcement; ACCOUNTS = Number of account groups affected in a restatement. The seven account groups are revenue, cost of sales, operating expenses, one-time/special items, merger-related, non-operating expenses, and other items; RYEARS = Sum of years restated, where a fiscal year = 1 and each additional quarter = 0.25; BIGN = 1 if the company's auditor is a Big N firm at announcement year, and 0 otherwise; DEBT = 1 if the company has notes payable, and 0 otherwise; SALEGRW = One-year percentage change in sales reported at announcement year; ROA = Net income divided by book value of total assets reported at announcement year; LOSS = 1 if operating income is less than zero reported at year end prior to restatement announcement, and 0 otherwise; SIZE = Natural log of book value of total assets reported at announcement year; CEOTURN = 1 if the CEO leaves the company within 24 months around (6 months before and 18 months after) the restatement announcement, and 0 otherwise; ATTAU = 1 if companies having restatements prompted by the auditor, and 0 otherwise; ATTSEC = 1 if companies having restatements prompted by SEC, and 0 otherwise. AUFEE = Natural log of audit fees; TENURE = the number of consecutive years that the company has retained the auditor; GC = 1 if the company receives a going concern opinion at announcement year, and 0 otherwise.*

[b] *ICW and Non-ICW divide samples based on whether companies with internal control weaknesses or without internal control weaknesses.*

[c] *Asterisks *, **, *** indicate two-tailed significance at the 0.10, 0.05, and 0.01 levels, respectively.*

Table 3 reports the Pearson correlations for the dependent and test variables to be used in the research models. In my analyses, most explanatory variables are not significantly correlated with each other, suggesting that multicollinearity is not a problem. As depicted in this Table, correlations between restatement information (*SEVERITY*, *CORE*, *AMOUNT*, *ACCOUNTS*, *RYEARS*) and internal control weaknesses (*ICQUALITY(1)*, *ICQUALITY(2)*, *ICQUALITY(3)*) are in the predicted direction.

Table 3: Pearson Correlation Coefficients

Variable [a] [b]	*SEVERITY*	*CORE*	*AMOUNT*	*ACCOUNTS*	*RYEARS*	*ICQUALITY(1)*	*ICQUALITY(2)*
SEVERITY							
CORE	0.71**						
AMOUNT	-0.16**	-0.05					
ACCOUNTS	0.51**	0.29**	-0.15**				
RYEARS	0.53**	0.16**	-0.00	0.09			
ICQUALITY(1)	0.24**	0.14**	-0.08	0.09	0.20**		
ICQUALITY(2)	0.22**	0.11**	-0.10	0.10**	0.22**	0.94**	
ICQUALITY(3)	0.18**	0.05	-0.17	0.19**	0.17**	0.61**	0.69**

[a] *Please refer to table 2 for variable definitions.*

[b] *Asterisks ** indicate two-tailed significance at the 0.05.*

To examine the association between restatement severity and internal control quality, I estimate equation (1) using a composite index that combines four restatement characteristics into a single comprehensive variable (*SEVERITY*) that captures the company's overall restatement severity. I regress internal control variables and control variables on restatement severity using the ordered probit model. Table 4 presents estimates from the regression of equation (1).

Table 4: Restatement Severity and Internal Control

Variable [a]	Model 1 [c]	Model 2	Model 3
ICQUALITY [b]	0.54***	0.29***	0.09***
BIGN	0.14	0.17	0.17
DEBT	-0.15	-0.14	-0.14
SALEGRW	-0.40*	-0.42**	-0.44**
ROA	0.59	0.61	0.63
LOSS	-0.05	-0.03	-0.04
SIZE	-0.09***	-0.09***	-0.09***
CEOTURN	0.17	0.17	0.16
ATTAU	0.07	0.04	-0.08
ATTSEC	0.71**	0.66**	0.73**
Pseudo-R^2	3.98%	3.70%	3.56%
n	403	403	403

[a] *Please refer to table 2 for variable definitions.*
[b] *Model 1 measures ICQUALITY by (1) 1 if a company has weak internal control, and 0 otherwise, model 2 measures ICQUALITY by (2) type of internal control weaknesses, and model 3 measures ICQUALITY by (3) number of internal control weaknesses.*
[c] *Asterisks *, **, *** indicate two-tailed significance at the 0.10, 0.05, and 0.01 levels, respectively.*

Consistent with my prediction, in Model (1), the coefficient on *ICQUALITY* is 0.54 (significant at $p < 0.01$), suggesting that restating companies with internal control weaknesses may suffer higher restatement severity. In Model (2), the coefficient on *ICQUALITY* is 0.29 (significant at $p < 0.01$), suggesting that restating companies involve company-level material weaknesses may have higher restatement severity. In Model (3), the coefficient on *ICQUALITY* is 0.09 (significant at $p < 0.01$), suggesting that restatement severity increases in number of internal control weaknesses. Also, among the control variables, performance (*SALEGRW*), company size (*SIZE*), and SEC-prompted restatements (*ATTSEC*) are significantly correlated with restatement severity.

To further examine the association between restatement characteristics and internal control quality, I consider four restatement characteristics (*CORE*, *AMOUNT*, *ACCOUNTS*, *RYEARS*), and then estimate equation (2). As shown in Table 5, restating companies with internal control weaknesses are more likely to involve core-earnings accounts (*CORE*), downward restatements (*AMOUNT*), more account groups (*ACCOUNTS*), and longer duration (*RYEARS*) than restating companies without internal control weaknesses.

Overall, results suggest that different levels of internal control deficiency can cause various degrees of restatement severity. Specifically, companies with company-level material weaknesses are more likely to suffer higher restatement severity than those companies with account-specific material weaknesses.

This section examines the sensitivity of the reported empirical results by exploring whether the evidence persists for a series of variables, sample re-specifications and alternate estimation techniques. First, following Hribar and Jenkins (2004), I re-define *CORE* as equal to one if the restatement is categorized as affecting revenue recognition, cost of sales, operating expenses, or loan-loss provisions, and zero otherwise. The results and conclusions remain unchanged. Second, I exclude companies in the financial services industry because their financial ratios differ from other companies, and their corporate governance is subject to different regulatory oversight. The empirical results are similar to those reported in previous sections.

Table 5: Restatement Characteristics and Internal Control

		CORE			*AMOUNT*	
Variable [a]	**Model 1**	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**
Intercept [b]	1.06***	1.07***	1.16***	-0.02	-0.01	-0.02
ICQUALITY	0.45***	0.20**	0.04	-0.01*	-0.01**	-0.01***
BIGN	0.14	0.16	0.16	-0.00	-0.00	-0.00
DEBT	-0.38**	-0.36**	-0.34**	0.01	0.01	0.01
SALEGRW	-0.87***	-0.88***	-0.87***	-0.02*	-0.02*	-0.01*
ROA	0.45	0.46	0.43	-0.00	-0.00	-0.01
LOSS	-0.20	-0.17	-0.15	0.00	0.00	0.00
SIZE	-0.11***	-0.11***	-0.11***	0.00	0.00	0.00
CEOTURN	0.06	0.07	0.07	0.01	0.01	0.01
ATTAU	-0.04	-0.05	-0.10	0.01	0.01	0.02
ATTSEC	0.73*	0.71*	0.76*	0.00	0.00	0.00
Pseudo-R^2	8.07%	7.39%	6.68%	2.82%	3.29%	3.31%
n	403	403	403	403	403	403
		ACCOUNTS			*RYEARS*	
Variable	**Model 1**	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**
Intercept [b]	1.20***	1.19***	1.20***	1.07***	1.02***	1.23***
ICQUALITY	0.07*	0.04*	0.03***	0.68***	0.42***	0.11***
BIGN	-0.00	0.00	0.00	0.03	0.07	0.07
DEBT	-0.02	-0.02	-0.03	-0.14	-0.14	-0.12
SALEGRW	-0.05	-0.05	-0.06	-0.17	-0.19	-0.22
ROA	-0.03	-0.02	0.02	0.77	0.84	0.82
LOSS	0.00	0.00	-0.01	-0.17	-0.16	-0.14
SIZE	-0.01	-0.01	-0.01	0.05	0.06	0.05
CEOTURN	0.01	0.01	-0.00	0.34**	0.33**	0.33**
ATTAU	-0.05	-0.05	-0.11	0.04	-0.00	-0.13
ATTSEC	0.06	0.06	0.07	0.39	0.32	0.44
Pseudo-R^2	1.52%	1.59%	1.96%	5.42%	6.15%	4.03%
n	403	403	403	403	403	403

[a] *Please refer to table 2 for variable definitions.*
[b] *Model 1 measures ICQUALITY by (1) 1 if a company has weak internal control, and 0 otherwise, model 2 measures ICQUALITY by (2) type of internal control weaknesses, and model 3 measures ICQUALITY by (3) number of internal control weaknesses.*
[c] *Asterisks *, **, *** indicate two-tailed significance at the 0.10, 0.05, and 0.01 levels, respectively.*

CONCLUDING COMMENTS

In this study, I examine whether and how internal control quality is associated with restatement severity/restatement characteristics, because I argue that internal controls have different quality levels and may cause various influences on restatements. By using 403 restating companies during 2004-2005, I employed an ordered probit model and found that restatement severity increases for companies with improper internal controls, moreover, companies with company-level material weaknesses are more likely to suffer higher restatement severity than those companies with account-specific material weaknesses. One major limitation of my study is that my sample includes data for two year. A potentially interesting line of future research is whether post-SOX restating companies improve their earnings quality or internal control quality in the post-restatement era. From a positive thinking perspective, this raises an important question of whether post-SOX restatements provide a good opportunity for restating companies to improve the future quality of their financial reporting. I believe that after SOX restating companies may have stronger incentives than non-restating companies to improve financial reporting quality and restore market confidence, because restatements incur higher costs and considerable public criticism.

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