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Earnings Quality and Investor Reactions to Restatement Announcements

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The purpose of this research is to help clarify the ambiguity surrounding market participants' pricing of earnings quality using one clearly observable indicator of low-quality earnings -accounting restatements. This study examines the effect that pre-restatement earnings quality has on short-window returns following restatement announcements using a cross-section of 719 publicly traded firms that announced restatements between 1997 and 2004. Accrual metrics are used to proxy for earnings quality. Results indicate that the market reaction to restatement announcements is significantly influenced by pre-restatement earnings quality. Specifically, the accrual measure of earnings quality is significantly and negatively related to the market reaction. This finding provides evidence that investors are attuned to the implications of poor earnings quality communicated by accruals quality and that this awareness is reflected in stock prices prior to the announcement of accounting restatements.

Keywords: Restatements; Market Reaction; Earnings Quality

Introduction

Publicly reported accounting data have widespread capital market implications for a broad spectrum of users. Misinterpreted or misleading accounting information may instigate inefficient resource allocation, obfuscate the standard setting process, and erode investor confidence (General Accounting Office, 2002; Schipper & Vincent, 2003; Kalelkar & Nwaeze, 2011). Consequently, the quality of reported earnings has triggered substantial interest by regulators and accounting researchers, resulting in an emergent body of research that examines the market pricing of earnings quality (e.g. Sloan, 1996; Xie 2001; GAO, 2002; Aboody, Hughes, & Liu, 2005; Francis et al., 2005; Kalelkar & Nwaeze, 2011; Perotti & Wagenhofer, 2014).

Rigorous efforts to expound on market participants' aptitudes for discerning the intricacies associated with earnings quality have resulted in two distinct perspectives (Dechow & Schrand, 2004). The first perspective views market participants as naïve users of accounting information who fail to understand the differential persistence in accruals and cash flows resulting in temporary security mispricing (e.g. Sloan, 1996; Xie, 2001). Conversely, the second perspective suggests that in the wake of accounting scandals, market participants scrutinize earnings reports carefully and subsequently discern and price the quality of earnings (Balsam, Bartov, & Marquardt, 2002; Francis et al., 2005; Baber, Chen, & Kang, 2006; Kalelkar & Nwaeze, 2011; Perotti & Wagenhofer, 2014). The purpose of this research is to help clarify the ambiguity surrounding market participants' pricing of earnings quality using one distinct indicator of low-quality earnings - accounting restatements.

Accounting restatements provide a unique and innovative environment for investigating the pricing of earnings quality because they represent relatively direct evidence of low-quality earnings

(DeFond & Francis, 2005). Additionally, despite heightened awareness of financial reporting quality from regulators, auditors, market participants, and the popular press, the number of restatements escalated to an all-time high of 1,876 in 2006 (Reilly, 2007). Numerous studies have used restatements as an indicator of either low-quality earnings or earnings management (Richardson, Tuna, & Wu, 2002; Abbott, Parker, & Peters, 2004; Hribar & Jenkins, 2004; Kinney, Palmrose, & Scholz, 2004; Blankley, Hurtt, & MacGregor, 2012; Francis et al., 2013) and provide clear evidence that firms suffer a substantial loss in market value following restatement announcements (Dechow, Sloan, & Sweeney, 1996; Anderson & Yohn, 2002; GAO, 2002; Palmrose & Scholz, 2004). Despite the severe market repercussions associated with the negative signal communicated via earnings restatements, prior research has not empirically addressed to what extent the quality of pre-restatement earnings affects market participants' reactions to these subsequent, more demonstrative indicators of low earnings quality. The present research fills this gap by examining the effect pre-restatement earnings quality has on market participants' reactions to the more visible signal of low-quality earnings conveyed by the issuance of a restatement.

Palmrose et al. (2004) (hereinafter PRS) provide evidence that numerous factors are associated with the market reaction to restatement announcements, including fraud, the number and type of account groups affected, and the directionality (income increasing vs. decreasing) of the restatement. This research extends their model to include an accrual proxy for earnings quality. In the framework of the model, and using a cross-section of publicly traded firms that announced restatements between 1997 and 2004, this study examines the effect that pre-restatement earnings quality has on short-window returns following restatement announcements.

The results of this research indicate that pre-restatement earnings quality is significantly negatively related to the market reaction to restatement announcements. Firms with better pre-restatement earnings quality experience more negative returns in response to restatement announcements than firms with worse pre-restatement earnings quality. The identification of this relationship contributes to both the earnings quality and restatement literatures by providing support for the contention that earnings quality is, at least in part, understood and priced by market participants. This finding also provides additional insights into the factors associated with market participants' extremely heterogeneous reactions to financial report restatements.

The remainder of this paper is organized as follows: the next section reviews the restatement and earnings quality literature and develops the associated hypothesis. The third section describes the research design and method and section four presents the analyses and results. Section five closes with a discussion of limitations and conclusions.

Literature Review

Restatement Research

Academic research, governmental reports, and the popular press have documented extensively the dramatic increases in the numbers of restatements over the past 20 years (GAO, 2002 & 2006; Huron Consulting, 2003 & 2004; Palmrose et al., 2004; Reilly, 2007; Scholz, 2014). Restatements are required when previously issued financial reports are later discovered to not be in accordance with Generally Accepted Accounting Principles (GAAP). Although many restatements do not have immediate cash flow implications, they convey important information regarding firms' potential for future earnings and the accuracy and reliability of financial data. As such, they send a potentially negative signal to market participants regarding earnings quality. The effect this signal has on capital markets is substantiated by the strong negative reaction that occurs when companies announce their intention to restate earnings (GAO, 2002 & 2006; Palmrose et al., 2004; He & Chiang, 2013; Gordon et al., 2014; Du, 2017). The severe capital market repercussions associated with the decision to restate earnings, coupled with the fact that restatements are de facto evidence of poor earnings quality, make this a distinctive combination for researching investors' ability to interpret less pervasive earnings

quality signals. Additionally, the recent escalation in the number of restatements has created a heightened interest in both the causes and consequences of restatements.

The negative financial implications of restatements are widely documented. Based on a study of SEC enforcement actions resulting in restatements between 1981 and 1992, Dechow et al., (1996) report an average negative return of 6 percent. Examining restatement announcements between 1995 and 1999, Palmrose et al. (2004) similarly document an average negative return of 9 percent. In addition to firm-specific market reactions, Gleason, Jenkins, and Johnson (2004) note that restatements induce a reduction in share prices of firms in the same industry. Xu, Najand, and Ziegenguss (2006) also report that restatements affect the equity valuations of competing firms. They find that firms having cash flow characteristics similar to restating firms experience a negative return of 0.76 percent when the restatement reduces the stock price of the restating firm.

In addition to eroding market capitalization, restatement firms are subject to other economic penalties. Firms issuing restatements are also frequently the subject of class action lawsuits (Jones & Weingram, 1997). Palmrose and Scholz (2004) investigate the relationship between restatement characteristics and litigation. They indicate that core restatements and those involving a greater number of accounts (more pervasive) increase both the likelihood of litigation and plaintiff success. Hribar and Jenkins (2004) determine that restatements are associated with increases in the cost of equity capital, particularly restatements initiated by the auditor or for companies with high leverage. These studies provide support for the view that restatements have economically meaningful implications that go far beyond documented deteriorations in market capitalization.

Although these studies explore a variety of factors associated with restatements, PRS (2004) extend this research and attempt to empirically model the capital market effect of restatement announcements. PRS provides evidence that the severity of the abnormal negative returns following restatement announcements varies greatly depending on the characteristics of the restatement. For example, restatements associated with management fraud elicit the most severe stock price reactions. Additionally, restatements initiated by the auditor or related to core operating accounts such as revenue also result in more substantial negative market reactions. Extending PRS, Salavei and Moore (2005) classify restatements according to the reason for the restatement and examine the market reaction according to nine different categories of restatements, including revenue, cost, securities, and transaction related. They determine that market reactions differ significantly by both the type of restatement and its magnitude. Specifically, they find that restatements of noisy information items, such as securities and restructurings, increase investors' information sets and therefore result in reactions that are more negative. Conversely, restatements that are transaction-based increase the noisiness of investors' information sets and do not influence the market reaction as strongly.

While restatement announcements have obvious negative market consequences, there is a limited amount of research investigating what factors lead to the broad variability in returns following the announcement event. Examining the relationship between pre-restatement earnings quality and severity of the market reaction can potentially help clarify the substantial heterogeneity in market responses.

The Market Pricing of Earnings Quality

Evidence is mixed as to the extent to which earnings quality indicators are used by investors to extract value relevant information. Some research provides evidence that market participants consider larger accruals or book-tax differences to be indicative of poor earnings quality, resulting in a contemporaneous reduction in stock prices (Balsam et al,. 2002; Francis et al., 2005; Hanlon, 2005; Baber et al., 2006). Other research indicates that market participants overprice the discretionary component of income, thus temporarily over-inflating stock prices (Sloan, 1996; Subramanyam, 1996; Bradshaw, Richardson, & Sloan, 2001; Xie, 2001). Widely publicized accounting scandals, however, coupled with new regulatory requirements, have resulted in an increased focus on earnings quality

issues. Consistent with a heightened emphasis on earnings quality, recent research indicates investors and analysts have become more cognizant of potential earnings management techniques and the subsequent implications for future earnings (Balsam et al., 2002; Francis et al., 2005; Hanlon, 2005; Baber et al. 2006). These findings imply market participants may be capable of identifying earnings quality signals, which may affect the market reaction to restatement announcements.

Francis et al. (2005), provide convincing empirical evidence suggesting investors price accruals quality. They find that lower accruals quality is associated with higher costs of debt, larger equity betas, and larger earnings-price ratios. Other studies corroborate these findings, suggesting that investors utilize information concerning the quality of earnings during price formation. For example, Balsam et al. (2002) report a negative association between unexpected discretionary accruals and cumulative abnormal returns over a 17-day window following the release of the Form 10-Q. Similarly, Baber et al. (2006) examine the influence of the voluntary disclosure of balance sheet and cash flow information on price reactions to earnings announcements. They provide evidence that investors discount earnings when contemporaneous supplemental disclosures contain information suggesting earnings have been managed via discretionary accruals. DeFond and Park (2001) also provide evidence suggesting market participants adjust, at least in part, for earnings quality at the time earnings are announced. They report that firms announcing positive earnings surprises have lower earnings response coefficients when income-increasing accruals exaggerate the magnitude of the earnings surprises. Collectively, these studies indicate that the earnings quality information conveyed in accruals is to some degree reflected in contemporaneous security prices.

The above research provides evidence that investors are capable of extracting earnings quality information from the information contained in earnings quality proxies such as accruals. As such, signals of low-quality earnings in accruals should be reflected in stock prices prior to firms announcing restatements. Restatements, to some degree, may confirm investors' prior suspicions regarding poor earnings quality. Thus, this signal provides investors with less new or surprising information, resulting in a less substantial negative stock price reaction. Conversely, investors may not expect firms with good pre-restatement earnings quality to restate, thereby triggering a more substantial negative price reaction. These arguments lead to the following hypothesis:

H_1: Firms with low earnings quality will experience a less severe market reaction to the announcement of a restatement relative to firms with high earnings quality.

Methodology

Variable Development

Research by PRS (Palmrose et al. 2004) provides the foundation for the model to test the hypothesis. The model relates various characteristics of restatements and restating firms to the cumulative abnormal returns on the day of and the day following a restatement announcement. Their model consists of nine variables, all of which are used as control variables in the model. The PRS model is enhanced by additional variables taken from related literature, most notably the earnings quality proxy. In addition to the earnings quality proxy, two additional control variables are added to the PRS model. These variables, as well as the dependent variables, are developed in the following sections.

The first set of variables developed by PRS (2004) provides information as to managements' competence and integrity. Restatements resulting from fraud are one primary indicator that management may lack integrity. *FRAUD* is an indicator variable equal to 1 in instances where the restating firm was subject to an SEC Accounting and Auditing Enforcement Release (AAER) and 0 otherwise; instances of fraud are expected to be negatively related to the market reaction. Restatement attribution (*ATTRIB)* designates the party that identified the need for restatement: auditor, SEC, or company management. Restatements attributed to the external parties such as the auditor or SEC are

expected to introduce a greater amount of uncertainty about the reliability of financial information and be associated with more negative market reactions. Instances where the firm identified the need for restatement may provide a heightened level of assurance vis-à-vis the ability of management to identify and correct potential misstatements, and are thus expected to be positively associated with market reactions to the restatement announcements (Palmrose et al., 2004). Attribution is captured as a series of indicator variables, one for each attributing party, external auditor, SEC, and management. Restatement announcements with no attribution serve as a no-information baseline.

The PRS (2004) model also includes variables associated with the aspects of the material impact of the restatement. Restatements affecting core (*CORE*) accounts such as revenue, cost of goods sold, and operating expenses, are expected to be associated with a more negative market reaction because they represent changes in on-going operating income. *CORE* is an indicator variable equal to 1 if the restatement affected one or more core account groups and 0 otherwise. Materiality (*MAT*) represents the impact of the restatement on net income and is computed by subtracting restated net income from original income over all restated periods and scaling the difference by total assets. PRS (2004) indicate that *MAT* is significantly positively related to the market reaction surrounding the announcement date. The pervasiveness (*PERVAS*) of the restatement is defined as the number of general account groups affected by the restatement and is expected to be negatively related to the market reaction. The persistence (*YEARS*) of the misstatement provides information about the competence of management and the reliability of the firm's internal control structure. Persistence is measured as the number of periods impacted by the restatement, where a quarter is equal to 0.25, and is expected to be negatively related to the market reaction.

The PRS (2004) model includes three variables that control for company-specific characteristics of the restating firms. An interaction term between firm size, measured as the natural log of the book value of total assets at year-end in the period prior to restatement, and the materiality variable (*SIZEMAT*) is used to control for variations in the relative size of the restating firm. Consistent with PRS (2004), *SIZEMAT* is expected to be negatively related to the market reaction. An interaction term between the ratio of long-term debt to total assets and the materiality measure (*LEVMAT*) is used to control for variations in debt levels across the restating firms. Long-term debt and total assets are measured at year-end in the period prior to the earliest restated period. *LEVMAT* is expected to be negatively related to the market reaction to restatement announcements. The final control variable in the PRS (2004) model captures the returns of the restating firm in the 120-day period preceding the restatement announcement (*PRIORRET).* Prior returns are expected to be positively associated with the market reaction.

The PRS (2004) model is enhanced by two additional control variables. An indicator variable (*BIGN*) is set equal to 1 if the firm engaged a Big N auditor in the year(s) of restatement and 0 otherwise. This variable is included to control for variations in audit quality between big N and non-big N firms (Francis et al,. 1999). As Big N auditors are associated with better audit quality, *BIGN* is expected to be negatively associated with the market reaction. In addition to type of auditor, Lazer, Livnat, and Tan (2004) report a higher incidence and magnitude of quarterly restatements for firms that switched auditors as compared to those that did not. The authors contend that these restatements are a function of the incoming auditor attempting to manage the litigation risk associated with the new client. If restatements following auditor changes are the result of audit firms' attempts to manage litigation risk, then the signal conveyed to the market by the restatement announcement may not be considered as indicative of low-quality earnings. Therefore, an indicator variable (*AUDCHANGE*) equal to 1 if the firm changed auditors in the year of the restatement announcement and 0 otherwise is also included in the model and expected to be positively associated with the market reaction.

Model

The PRS (2004) model combined with earnings quality (*EQ)* and the two additional

control variables (*BIGN* and *AUDCHNG*) is represented by the following regression equation:

$$CAR = \beta_0 - \beta_1 EQ - \beta_2 FRAUD \pm \beta_3 ATTRIB - \beta_4 CORE + \beta_5 MAT - \beta_6 PERVAS - \beta_7 YEARS -$$

$$\beta_8 SIZEMAT - \beta_9 LEVMAT + \beta_{10} PRIORRET - \beta_{11} BIGN + \beta_{12} AUDCHANGE \quad (1)$$

Where:

$$CAR_i = \sum_{t=0}^{t=1} (DAILYRET_i - INDRET) \quad (2)$$

DAILYRET = Daily Return for company *i* for days 0 and +1;
INDRET = CRSP Market Index Return;

DDEQ (-)	=	Dechow and Dichev (2002) modified accruals quality (*DDEQ)* proxy for earnings quality, multiplied by negative one (-1);
FRAUD (-)	=	Indicator variable 1 for fraud 0 for no fraud (determined by issuance of an SEC Accounting and Auditing Enforcement Release);
ATTRIB (+/-)	=	Series of three indicator variables where 1 equals auditor, management or SEC attribution and 0 indicates either no or other attribution. The three attribution indicator variables are: Attribution Auditor, Attribution Management and Attribution SEC;
CORE (-)	=	Indicator variable 0 for restatements not involving core accounts, 1 for restatements involving core accounts (revenue, cost of sales and on-going operating expenses);
MAT (+)	=	Originally reported income less restated income for all years summed over all restatement periods and scaled by total assets in the year immediately prior to the restatement;
PERVAS (-)	=	Pervasiveness as the number of account groups from 1 to 7 that represent the focus of the restatement;
YEARS (-)	=	Persistence of restatement defined as the number of years the financial statements were restated (a restated quarter equals .25);
SIZEMAT (-)	=	Interaction between firm size [natural log of the book value of total assets reported the last fiscal year-end prior to restatement (SIZE)] and the earnings change measure (MAT);
LEVMAT(-)	=	Interaction between ratio of long term debt to total assets (based on book values at fiscal year-end prior to restatement) and the earnings change measure (MAT);
PRIORRET(+)	=	Buy and hold returns over the last 120 days prior to the restatement announcement (day –120 to day –1);
BIGN (-)	=	Indicator variable equal to 1 if firm engaged a Big N auditor in year or quarter of restatement and 0 otherwise;
AUDCHANGE (+)	=	Indicator variable equal to 1 if restating firm changed auditors from the restated period up to the period ending with the announcement date and 0 otherwise.

For the test of the hypothesis, cumulative abnormal returns are measured on days 0 and 1 where day 0 is the day of the restatement announcement.

Accrual Measure of Earnings Quality

Consistent with Francis et al. (2005), a measure of accruals quality developed by Dechow and Dichev (2002) (hereinafter DD) is utilized. Accruals quality in the DD model is measured by the extent to which working capital accruals map into operating cash flow realizations in the prior, current, and future periods. The DD model is based on the assumption that accruals reflect managements' temporary adjustments to either delay or anticipate the receipt of cash. The error term, thus, captures the extent to which managements' estimates did not accurately capture operating cash flow realizations. Therefore, the DD model reflects both intentional estimation errors arising from earning manipulations and unintentional accrual estimation errors resulting from uncertainty in the operating environment. Wherein the DD model is based on current accruals, Francis et al. (2005) enhance the reliability of the DD model by adding accrual proxies from the modified Jones model (Dechow, Sloan, & Sweeny, 1995; Jones, 1991) for revenue changes (ΔRev) and property, plant and equipment (PPE). This adaptation results in the following accruals model, which estimates the proxy for earnings quality:

$$\frac{TCA_{j,t}}{Assets_{j,t}} = \phi_{0,j} + \phi_{1,j}\frac{CFO_{j,t-1}}{Assets_{j,t}} + \phi_{2,j}\frac{CFO_{j,t}}{Assets_{j,t}} + \phi_{3,j}\frac{CFO_{j,t+1}}{Assets_{j,t}} + \phi_{4,j}\frac{\Delta Rev_{j,t}}{Assets_{j,t}} + \phi_{5,j}\frac{PPE_{j,t}}{Assets_{j,t}} + \nu_{j,t} \quad (3)$$

Where:

t	=	Year prior to latest year or quarter restated;
j	=	Firm;
$TCA_{j,t}$	=	Firm j's total current accruals for year t ($\Delta CA_{j,t} - \Delta CL_{,j,t,} - \Delta Cash_{j,t} + \Delta STDEBT_{j,t}$);
$Assets_{j,t}$	=	Firm j's average total assets for year t and t-1;
$CFO_{j,t}$	=	Firm j's cash flow from operations for year t; Net income before extraordinary items less total accruals (where $TA_{j,t} = \Delta CA_{j,t} - \Delta CL_{j,t} - \Delta Cash_{j,t} + \Delta STDEBT_{j,t} - DEPN_{j,t}$);
$DEPN_{j,t}$	=	Firm j's depreciation and amortization expense for year t;
$\Delta CA_{j,t}$	=	Firm j's change in current assets from year t-1 to year t;
$\Delta CL_{j,t}$	=	Firm j's change in current liabilities from year t-1 to year t;
$\Delta Cash_{j,t}$	=	Firm j's change in cash from year t-1 to year t;
$\Delta STDEBT_{j,t}$	=	Firm j's change in short term debt from year t-1 to year t;
$\Delta Rev_{j,t}$	=	Firm j's change in revenue between year t-1 and year t;
$PPE_{j,t}$	=	Firm j's gross value of PPE in year t.

These estimations produce firm and year-specific residuals that form the basis of the earnings quality metric: $DDEQ = \sigma(\hat{\nu}_{j,t-1})$. The metric is equal to the rolling five-year standard deviation of firm j's (calculated over the years t - 4 through t) estimated residuals with larger standard deviations indicating lower earnings quality. Because the measurement of accruals quality is the standard deviation of the residual, rather than the residual itself, companies with consistently large or small residuals have small standard deviations and thus, good earnings quality. The notion being that this consistency is associated with considerably less uncertainty (Francis et al., 2005).

The residual in the Equation (3) is estimated for each year for each one of the Fama and French 48 industry classifications for which there are at least five total observations. This metric is hereinafter identified as *DDEQ*. Consistent with prior research, the extreme values of the distribution are winsorized to the 1 and 99 percentiles (Francis et al., 2005).

Interpretation of the regression coefficient on earnings quality is intuitively complicated by the fact that there is an inverse relationship between the *DDEQ* statistic and earnings quality (i.e., greater

standard deviations equal worse earnings quality). For this reason, the values of *DDEQ* have been multiplied by negative one (-1). This transformation allows a more direct intuitive interpretation of the results in that larger values (less negative) of the *DDEQ* estimates are associated with better earnings quality.

Sample and Data

The sample consists of companies announcing restatements between January 1, 1997, and December 31, 2004. These sample firms were obtained from the GAO database and from searches on the Lexis-Nexis News Library. The GAO (2002) database contains a list of all companies announcing restatements between January 1, 1997, and June 30, 2002. To locate firms that announced restatements after June 30, 2002, keyword searches were performed (e.g. adjust, error, misstate, restate, revise) in the Lexis-Nexis News Library.

There were 1,368 restatement announcements identified during the sample window. This number was reduced by 30 firms that issued more than one restatement within a six-month period, 213 firms that restated for reasons other than to correct previously misstated income, and 74 firms that did not ultimately issue a restatement. Of the remaining 1,051 firms, 332 were eliminated due to missing data items. This resulted in a final sample of 719 restatement announcements. The breakdown of sample attrition is presented in Table 1.

Additional information was taken directly from the restatement announcements. The restatement announcements generally contains information indicating to whom the restatement is attributed (*ATTRIB*), the total expected impact on net income (*MAT*), the fiscal period(s) affected (*YEARS)*, the account groups impacted and/or the reason for the restatement (i.e. revenue recognition timing)(*CORE, PERVAS*). Hand collected data items not found in the restatement announcements were taken from a combination of 10-K, 10-Q and 8-K reports. Additional data was collected electronically from COMPUSTAT, CRSP, and Thomson Financial (13F) Filings.

Results

Descriptive Statistics and Univariate Results

Table 2 presents a breakdown of restatement announcements by industry and year of announcement. Consistent with increases noted in other studies (GAO, 2002 & 2006; Huron Consulting, 2003 & 2004; Palmrose et al., 2004), the sample increases, although not consistently, across years with the largest number of announcements in 2004. Although over 50 percent of restatement announcements are clustered in the business and services industry grouping, the distribution of restatements across both calendar quarters (not tabulated) and years is independent of industry. This

Table 1
Sample Attrition

Announcements of all potential restatements [a]	1368
Duplicate restatement announcements [b]	(30)
Restatements for technical reasons not amounting to misstatements [c]	(213)
Announcements that did not result in actual restatements [d]	(74)
Restatements eliminated by missing data [e]	(332)
Restatements included in analysis	719

[a] Number of initial restatement announcements identified through key word searches on Lexis Nexis (July 2002 - December 2004) and the GAO database (January 1997 - June 2002).

[b] Firms that announced a restatement within a six month period of a prior announcement were eliminated from the sample if the restated periods were the same as in the original announcement.

[c] Restatements for technical reasons such as change in accounting policy, discontinued operations, mergers/acquisitions, and stock splits were eliminated because they are not properly classified as misstatements.

[d] Announcements of potential restatements later determined to be unnecessary.

[e] Restatements with missing data items are those primarily missing CRSP returns and the five years of data required to compute Dechow & Dichev (2002) earnings quality metric.

suggests market anticipation of announcements due to industry clustering is not likely to be an important factor in the observed market reactions.

Table 3 presents the summary statistics for the CAR associated with restatement announcements across four different return windows. In addition to providing returns on all restatements in Panel A, the table classified restatements into two distinct subsets. Panel B contains those restatements announced in conjunction with earnings releases and Panel C contains those restatements announced separately. The mean CAR for the full restatement sample on days (0, 1) is negative 4.5 percent. As the reaction window is expanded for the full sample, returns become increasingly negative up to 5.6 percent for days (-1 to 3). The mean CAR on days (0, 1) for restatements announced in earnings releases is negative 3.0 percent, which is significantly greater than the mean CAR of restatements announced separately of negative 5.4 percent (z-statistic 3.06). This supports the conjecture that information contained in earning releases may attenuate reactions to the restatement announcements. As expected, the CAR are significantly negative across all four different return windows and all three classifications of announcement groupings. The CAR in the first column of Table 3 represents the primary dependent variable for the regressions associated with hypotheses one.

Table 4 presents descriptive statistics and univariate results for the control variables. In most cases, the results are similar to the findings of PRS (2004). Fraud observations (12 percent, 84 of 719) have an average CAR of negative 11 percent, significantly lower than the negative 3.6 percent CAR associated with non-fraud observations (t-statistic = -2.83). Restatements involving core accounts

Table 2
Distribution of Restatement Sample by Industry and Announcement Quarter

Industry[a]	Announcement Quarter								Total	
	1		2		3		4			
Food Products	5	1%	2	<1%	5	1%	1	<1%	13	2%
Recreation	2	<1%	4	1%	7	1%	2	<1%	15	2%
Printing and Publishing	0	<1%	1	<1%	2	<1%	1	<1%	4	1%
Consumer Goods	3	<1%	2	<1%	1	<1%	2	<1%	8	1%
Apparel	3	<1%	1	<1%	1	<1%	2	<1%	7	1%
Healthcare & Medical Products	15	2%	11	2%	15	2%	17	2%	58	8%
Construction & Materials	1	<1%	0	0%	2	<1%	1	<1%	4	1%
Steel Works	2	<1%	1	<1%	1	<1%	1	<1%	5	1%
Fabricated Products & Machinery	10	1%	5	1%	6	1%	11	2%	32	4%
Electrical Equipment	1	<1%	0	0%	3	<1%	0	0%	4	1%
Automobiles & Trucks	0	0%	2	<1%	2	<1%	2	<1%	6	1%
Petroleum & Natural Gas	10	1%	5	1%	5	1%	4	1%	24	3%
Utilities	8	1%	3	<1%	4	1%	6	1%	21	3%
Communications	12	2%	7	1%	6	1%	7	1%	32	4%
Personal & Business Services	116	16%	67	9%	94	13%	99	14%	376	52%
Business Equipment	3	<1%	0	0%	1	<1%	2	<1%	6	1%
Computer Software	33	5%	21	3%	25	3%	25	3%	104	14%
Total	224	31%	132	19%	180	25%	183	25%	719	100%

[a]Industries are defined by SIC code based on a *modified* version of Fama and French's classification for 30 industries.

also have significantly lower average CAR of negative 6.5 percent compared to negative 0.9 percent for non-core restatements (*t*-statistic = -6.38). As in the PRS study, the 97 restatements attributed (*ATTRIB*) to auditors result in the most negative returns (10.4 percent) and the 357 attributed to management the second most negative returns (4.9 percent). Of those restatements attributed to only one party, the SEC initiated restatements resulted in the least negative returns (2.8 percent). Despite the somewhat logical presumption that SEC involvement should elicit a more negative reaction, the above findings are corroborated by Dechow et al. (1996), who document auditor identified accounting problems as being associated with more negative reactions than those identified by the SEC.

The materiality (*MAT*) measure indicates that restatements associated with larger decreases in net income are associated with returns that are more negative. Returns decrease significantly as the number of account groups (*PERVAS*) increases (*F*-statistic = 21.55, p-value < .01). Although the majority of the full restatement sample affects only one account group (75 percent, 541 out of 713) and is associated with a negative reaction of 3 percent, restatements affecting more than four account groups elicit a considerably larger negative return of 19 percent. These results are also consistent with those in the PRS (2004) study. The number of years (*YEARS*) that were restated averages 1.4 for the entire sample. The average 120-day return for the sample firms is negative 4.3 percent.

Table 3
Cumulative Abnormal Returns

	Event window surrounding announcement day 0			
Market-adjusted CAR %[a]	0, 1	-1, 0, 1	-1, 0, 1, 2	-1, 0, 1, 3
Panel A: All Restatements[b]				
Mean	-4.50	-5.16	-5.42	-5.59
Standard deviation	0.14	0.15	0.15	0.16
t -statistic[c]	(-8.77)	(-9.54)	(-9.42)	(-9.64)
First quartile	-7.69	-8.85	-9.73	-9.92
Median	-1.60	-2.11	-2.74	-2.76
Third quartile	1.62	1.49	1.47	1.47
Panel B: Restatements announced in earnings releases[d]				
Mean	-3.00	-3.71	-4.02	-4.04
Standard deviation	0.12	0.13	0.15	0.15
t -statistic[c]	(-3.98)	(-4.65)	(-4.46)	(-4.47)
First quartile	-6.10	-8.12	-9.73	-8.08
Median	-0.67	-1.30	-1.85	-2.41
Third quartile	3.13	2.85	2.78	3.04
Panel C: Restatements *not* announced in earnings releases[e]				
Mean	-5.43	-6.04	-6.28	-6.54
Standard deviation	0.14	0.15	0.16	0.16
t -statistic[c]	(-7.93)	(-8.40)	(-8.44)	(-8.71)
First quartile	-8.44	-9.03	-9.58	-10.30
Median	-2.12	-2.59	-3.02	-2.99
Third quartile	0.87	1.02	1.37	1.25

[a]Market-adjusted CAR calculated using equally weighted index (Palmrose et al. 2004). Calculated as the summation of firm i's daily return less CRSP market index return over each of the four event windows.

[b]Announcements of 719 restatements to correct misstatements of annual and quarterly financial reports announced between 1997 and 2004.

[c]Null hypothesis for each window is CAR = 0. *T*-tests are two-tailed.

[d]Subset of 273 restatements announced in earnings releases.

[e]Subset of 446 restatements announced separately from earnings releases.

The number of firms that engaged a Big N (*BIGN*) auditor is substantially higher than those that did not, 89 percent compared to 11 percent. This representation remains consistent across both sub-samples. In the sub-sample of no earnings release announcements, however, the returns are more

negative for Big N firms (-5.6 percent compared to -3.7 percent), but not significantly so (*t*-statistic = 0.86). The reverse relationship exists for the sub-sample of earnings release announcements, wherein less negative returns are associated with Big N firms (-1.8 percent compared to -3.1 percent). Of the 719 firms, 154 (21 percent) changed auditors between the latest restated period and the restatement announcement date. Both auditor changes and non-changes are associated with negative returns across the primary sample and sub-samples. CAR are not significantly different between groups in the full sample or either sub-sample.

Multivariate Results

Results of hypothesis one that tests the impact earnings quality has on the market reaction to restatement announcements and examines the earnings quality proxy within the context of the multivariate model are presented in Table 5. Hypothesis one results for the earnings quality proxy (*DDEQ*) are presented and discussed below.

Results for the OLS regression for the full sample indicate the model is highly significant (*F*-statistic = 7.65, adjusted R^2 = 11%). Earnings quality is significantly negatively related to restatement announcement market reactions (*t*-statistic = -2.57, p value < .01) in the full sample of restatement announcements. This result holds in the sub-sample of restatements announced separately from earnings releases, (*t*-statistic = -1.84, p value < .05) and in the sub-sample announced concurrent with earnings announcements (*t*-statistic = -1.89, p value < .05).

To summarize, the above results for the *DDEQ* measure of earnings quality support hypothesis one in the context of both the full restatement sample and the sub-samples announced both separately from and with earnings releases. In each of these samples, *DDEQ* is significantly negatively related to the market reaction to restatement announcements. This finding provides strong support for hypothesis one and the contention that investors are, to some degree, impounding earnings quality information into stock prices.

In addition to the primary finding for hypothesis one, there are numerous results of note for the control variables included in the PRS (2004) model. Not surprisingly, *FRAUD* is significantly negatively related to the market reaction across the primary and both sub-samples of restatement announcements (*t*-statistics -3.28, -1.78, and -2.91, p values < .01, .05 and .01 respectively). Similarly, restatements which impact core operating accounts *(CORE*) are also significantly negatively related to the market reaction (*t*-statistics -2.86, -3.25, and -1.64, p values < .01, .01, and .05, respectively). The negative effect the pervasiveness (*PERVAS*) of the restatement has on the market reaction is driven by the sub-sample of restatements not announced in earnings release (*t*-statistic -6.95, p-value .01). The finding that pervasiveness is not significantly negatively related to the market reaction in the sub-sample of announcements included with earnings releases may be due in part to more complex restatements warranting separate announcements.

The additional variables added to the PRS (2004) model, *BIGN* and *AUDCHANGE,* are only marginally significant in the sub-samples. *BIGN* is negatively related to the market reaction to restatement announcements in only the sample of restatements not announced in earnings releases (*t*-statistic -1.38, p-value < .10). This finding is not surprising given that 89% of both the full and each sub-sample were audited by large firms. Similarly, *AUDCHANGE* is only moderately significant in the sub-sample of firms that announced restatements in earnings releases (*t*-statistic -1.31, p-value .10).

Table 4
Descriptive Statistics for Control Variables[a]

	All Restatements[b]			Restatements announced in earnings releases[c]			Restatements *not* announced in earnings releases[d]		
	#	Percent or Mean	CAR[e] Days (0,1)	#	Percent or Mean	CAR[e] Days (0,1)	#	Percent or Mean	CAR[e] Days (0,1)
	719			273			446		
Control Variables									
Fraud	84	12%	-0.111	23	8%	-0.074	61	14%	-0.124
No Fraud	635	88%	-0.036	250	92%	-0.026	385	86%	-0.043
(*t*- statistic)			(-2.83) ***			(-1.25)			(-2.45) **
(z- statistic)			(-3.30) **			(-1.30)			(-3.01) ***
Attribution[f]									
Auditor	97	13%	-0.104	30	11%	-0.079	67	15%	-0.109
Management	357	50%	-0.049	143	52%	-0.039	214	48%	-0.055
SEC	72	10%	-0.028	29	11%	-0.026	43	10%	-0.030
Unattributed	164	23%	-0.018	66	24%	0.003	98	22%	-0.032
Auditor & Mgmt	25	3%	-0.018	4	1%	0.067	21	5%	-0.034
Auditor & SEC	1	<1%	0.009	1	<1%	0.009	0	0%	0.000
Mgmt & SEC	3	<1%	0.043	0	0%	0.000	3	<1%	0.043
(*F*- statistic)			(4.39) ***			(2.53) **			(3.14) ***
(χ^2)			(19.56) ***			(15.89) ***			(8.25)
Core earnings	465	65%	-0.065	182	67%	-0.049	283	63%	-0.075
Non-core earnings	254	35%	-0.009	91	33%	0.007	163	37%	-0.019
(*t*- statistic)			(6.38) ***			(4.30) ***			(4.91) ***
(z- statistic)			(4.74) ***			(3.06) ***			(3.79) ***
Materiality									
Overall Mean		-0.040			-0.001			-0.065	
Quintile Means	144	-0.263	-0.090	54	-0.105	-0.062	89	-0.361	-0.102
	144	-0.023	-0.085	55	-0.017	-0.051	89	-0.027	-0.115
	143	-0.006	-0.025	55	-0.005	-0.030	90	-0.007	-0.028
	144	-0.001	-0.024	55	-0.001	-0.006	89	-0.001	-0.023
	144	0.081	-0.001	54	0.104	-0.001	89	0.069	-0.003
(*F*- statistic)			(13.26) ***			(2.55) **			(12.04) ***
(χ^2)			(56.11) ***			(11.42) **			(49.04) ***
Pervasiveness									
1	541	75%	-0.032	210	77%	-0.026	332	74%	-0.036
2	112	16%	-0.056	43	16%	-0.048	69	15%	-0.061
3	36	5%	-0.086	11	4%	-0.006	25	6%	-0.121
4	18	3%	-0.128	6	2%	-0.101	12	3%	-0.141
5	6	1%	-0.154	1	0%	-0.004	5	1%	-0.184
6	5	1%	-0.463	2	1%	-0.041	3	1%	-0.745
7	0	0%	0.000		0%	0.000	0	0%	0.000
(*F*- statistic)			(14.19) ***			(0.72)			(21.55) ***
(χ^2)			(23.96) ***			(4.12)			(24.46) ***
Years									
Mean		1.42			1.15			1.58	
Median		1.00			0.75			1.00	

Table continued on the next page

Table 4 (continued)
Descriptive Statistics for Control Variables[a]

	All Restatements[b]			Restatements announced in earnings releases[c]			Restatements *not* announced in earnings releases[d]		
	#	Percent or Mean	CAR[e] Days (0,1)	#	Percent or Mean	CAR[e] Days (0,1)	#	Percent or Mean	CAR[e] Days (0,1)
	719			273			446		
SizeMat									
Mean		-0.07			-0.013			-0.105	
Median		-0.012			-0.001			-0.016	
LevMat									
Mean		-0.022			-0.013			-0.035	
Median		-0.001			-0.001			-0.001	
Prior Returns									
Mean		-0.043			-0.027			-0.052	
Median		-0.001			-0.001			-0.001	
BigN									
BigN	641	89%	-0.046	243	89%	-0.018	398	89%	-0.056
Non-BigN	78	11%	-0.029	30	11%	-0.031	48	11%	-0.037
(*t*- statistic)			(1.03)			(0.55)			(0.86)
(z- statistic)			(1.58)			(1.14)			(1.11)
Auditor Change									
Changed	154	21%	-0.053	49	18%	-0.048	105	24%	-0.056
No Change	565	79%	-0.043	224	82%	-0.026	341	76%	-0.054
(*t*- statistic)			(0.84)			(0.93)			(0.88)
(z- statistic)			(0.93)			(0.23)			(0.81)

*,**,*** Difference across quintiles is significant at 0.10, 0.05, 0.01 levels respectively. *T*-tests are two-tailed. Non-parametric results are based on the Mann-Whitney z-statistic (two group comparisons) or the Kruskal-Wallis $\chi 2$ (quintile and multiple group comparisons).

[a]Control variables defined as follows (in table order). *Fraud:* SEC issued an accounting and auditing enforcement release (AAER). *Core earnings:* Restatements involving revenue, cost of goods sold, or on-going operations. *Non-core earnings:* Restatements involving transitory items such as merger accounting, tax accounting, non-operating gains or losses and others. *Attribution Auditor, Management, SEC or combination of multiple entities:* Restatement attributed to specific entity in press release, baseline case is *Unattributed.* *Materiality*: Restated income (loss) less originally reported net income over restated period scaled by book value of total assets at the year end prior to the earliest restated period. *Pervasiveness:* Number of account groups involved in restatement. The seven account groups are revenue, cost of sales, operating expenses, one-time/special items, merger-related, non-operating expenses and other. The sub-account groups used in these classifications are defined in Appendix X. *Years:* Sum of periods restated where a fiscal year = 1 and a fiscal quarter = 0.25. *SizeMat*: Interaction between materiality variable and the natural log of the book
value of total assets in at year-end in the year prior to the earliest restated period. *LevMat*: Interaction between materiality variable and ratio of book value of long term debt to book value of total assets at year-end in the year prior to the earliest restated period. *Prior Returns*: Buy and hold returns over last 120 prior to restatement announcement. *BigN:* Indicator variable equal to 1 if restating firm engaged a BigN auditor during the period of restatement and 0 otherwise. *Auditor Change*: Indicator variable if restating firm changed auditors from the restated period up the period ending with the announcement date.

[b]Announcements of 719 restatements to correct misstatements of annual and quarterly financial reports announced between 1997 and 2004.

[c]Subset of 273 restatements announced in earnings releases.

[d]Subset of 446 restatements announced separately from earnings releases.

[e]Cumulative abnormal returns (CAR) calculated using market adjusted model and equally weighted index on days 0 and 1 where day 0 is the date of the restatement announcement.

[f]Instances of restatements attributed to multiple parties in the restatement announcement were coded as such.

Table 5
OLS regression results for Hypothesis 1 for all sample restatements and subsets that were/were not announced in earnings releases

$$CAR = \beta_0 - \beta_1 EQ - \beta_2 FRAUD \pm \beta_3 ATTRIB - \beta_4 CORE + \beta_5 MAT - \beta_6 PERVAS - \beta_7 YEARS - \beta_8 SIZEMAT - \beta_9 LEVMAT + \beta_{10} PRIORRET - \beta_{11} BIGN + \beta_{12} AUDCHANGE$$

Independent variables	Expected Sign	All sample restatements[c]		Restatements announced in earnings releases[d]		Restatements *not* announced in earnings releases[e]	
		Coeff.	*t*-stat	Coeff.	*t*-stat	Coeff.	*t*-stat
Panel A: DDEQ							
Earnings Quality							
DDEQ	-	-0.05	-2.57 ***	-0.061	-1.89 **	-0.045	-1.84 **
Control Variables[f]							
Fraud	-	-0.050	-3.28 ***	-0.049	-1.78 **	-0.055	-2.91 ***
Auditor attribution	-	-0.031	-2.17 **	-0.036	-1.46 *	-0.022	-1.23
Management attribution	+	0.001	0.01	-0.029	-1.67 **	0.182	1.23
SEC attribution	-	0.018	1.00	-0.036	-1.32	0.052	2.25 **
Core	-	-0.03	-2.86 ***	-0.053	-3.25 ***	-0.023	-1.64 **
Materiality	+	0.206	1.67 **	0.348	0.65	0.223	1.68 **
Pervasiveness	-	-0.034	-5.75 ***	-0.001	-0.12	-0.051	-6.95 ***
Years	-	0.006	1.36 *	0.010	1.29 *	0.004	0.82
SizeMat	-	-0.106	-1.49 *	-0.179	-0.52	-0.115	-1.52 *
LevMat	-	-0.061	-1.71 **	-3.424	-0.75	-0.067	-1.69 **
120 Day return	+	0.026	2.06 **	0.028	1.41 *	0.025	1.53 *
BigN	-	-0.018	-1.16	-0.004	-0.15	-0.029	-1.38 *
Auditor change	+	-0.018	-0.14	-0.027	-1.31 *	0.013	0.79
Intercept		0.034	1.77	0.023	0.78	0.025	1.65 **
Model Statistics							
n			719		273		446
Adjusted R^2			11%		5%		16%
F-Statistic			7.65 ***		2.09 **		7.25 ***

*,**,*** Coefficient or model is significant at 0.10, 0.05, 0.01 levels repectively. Results are one-tailed.

[a]Earnings quality variable defined as follows: *DDEQ* = standard deviation of firm *j*'s residuals, from year *t*-4 to year *t* from annual cross sectional estimations of the modifed Dechow-Dichev (2002) model. Variable is multiplied by negative one (-1).

[b]Cummulative abnormal returns (CAR) calculated using market adjusted model and equally weighted index on days 0 and 1 where day 0 is the date of the restatement announcement.

[c]Announcements of 719 restatements to correct misstatements of annual and quarterly financial reports. Restatements announced between 1997 and 2004.

[d]Subset of 273 restatements announced in earnings releases.

[e]Subset of 446 restatements announced separately from earnings releases.

[f]Control variables defined in Table 4.

Limitations and Conclusion

As is the case with many studies employing various earnings quality metrics, there is a potential survivorship bias related to the number of years of data required to estimate earnings quality. The final sample is likely skewed towards larger, more successful firms. In addition to possible survivorship bias, while the accounting literature includes numerous definitions of earnings quality, the primary earnings quality metric (*DDEQ*) used in this study estimates earnings quality based on the relationship between accruals and cash flows. Signals regarding earnings quality are not limited to the information

conveyed by accruals, however. Market participants likely extract earnings quality data from a variety of sources that are outside the scope of this study.

One primary motivation for undertaking this research was to provide additional insights into market participants' abilities to discern and subsequently price the implications of earnings quality. Unlike prior studies that have relied on associating earnings quality proxies with future returns and cash flows, this study associates earnings quality with returns following an observable signal that earnings are of poor-quality - accounting restatements. This study examined the association between an accruals earnings quality proxy and the market reaction to restatement announcements. Results indicate that earnings quality is negatively related to investors' reactions to announcements of restatements. Associating pre-restatement earnings quality with the market reaction to restatement announcements provides more demonstrative evidence that market participants are extracting insightful information regarding firms' future performance from earnings quality indicators and subsequently pricing that information. As such, this research helps elucidate our understanding of investors' use of key accounting information, specifically the information contained in accruals.

References

Abbott, L .J., Parker, S., & Peters, G. F. (2004). Audit committee characteristics and restatements. *Auditing: A Journal of Practice and Theory, 23*(1): 69-87.

Aboody, D., Hughes, J., & Liu, J. (2005). Earnings quality, insider trading, and cost of capital. *Journal of Accounting Research, 43*(5): 651-673.

Anderson, K. L., & Yohn, T. L. (2002). The effect of 10-K restatements on firm value, information asymmetries, and investors' reliance on earnings. Working Paper. Georgetown University.

Baber, W.R., Chen, S., & Kang, S. (2006). Stock price reaction to evidence of earnings management: Implications for supplementary financial disclosure. *Review of Accounting Studies, 11*: 5-19.

Balsam, S., Bartov, E., & Marquardt, C. (2002). Accruals management, investor sophistication, and equity valuation: Evidence from 10-Q filings. *Journal of Accounting Research, 40*(4): 987-1012.

Blankley, A.I., Hurtt, D.N., & MacGregor, J.E. (2012). Abnormal audit fees and restatements. *Auditing: A Journal of Practice and Theory, 31*(1): 79-96.

Bradshaw, M. T., Richardson, S. A., & Sloan, R. G. (2001). Do analysts and auditors use information in accruals? *Journal of Accounting Research, 39*(1): 45-74.

Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. *The Accounting Review, 70*(2): 193-225.

Dechow, P.M., Sloan, R. G., & Sweeney, A. P. (1996). Causes and consequences of earnings manipulations: An analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research, 13*(1):

Dechow, P. M., & Dichev, I. D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review,* 77 (Supplement): 35-59.

Dechow, P. M., & Schrand, C. M. (2004).The Research Foundation of CFA Institute. *Earnings Quality*.

DeFond, M. L., & Francis, J. R. (2005). Audit research after Sarbanes-Oxley. *Auditing: A Journal of Practice and Theory, 24* (Supplement): 5-30.

DeFond, M. L., & Park, C. W. (2001). The reversal of abnormal accruals and the market valuation of earnings surprises. *The Accounting Review*, *76*(3): 375-404.

Du. L. (2017). The CDS market reaction to restatement announcements. *Journal of Business, Finance & Accounting,* (7-8): 1015-1035.

Francis, J. R., Maydew, E. L., & Sparks, H. C. (1999). The role of big 6 auditors in the credible reporting of accruals. *Auditing: A Journal of Practice and Theory*, *18*(2): 17-34.

Francis, J., LaFond, R., Olsson, P., & Schipper, K. (2005). The market pricing of accruals quality. *Journal of Accounting and Economics, 39*: 295-327.
Francis, J.R., Michas, P.N., & Yu, M.D. (2013). Office size of big 4 auditors and client restatements. *Contemporary Accounting Research, 30*(4): 1626-1661.
General Accounting Office. (2002). Financial statement restatements - Trends, market impacts, regulatory responses and remaining challenges.
General Accounting Office. (2006). Financial restatements – Update of public company trends, market impacts, and regulatory enforcement activities.
Gleason, C. A., Jenkins, N. T., & Johnson, W. B. (2004). Financial statement credibility: The contagion effects of accounting restatements. Working Paper. University of Iowa.
Gordon, E.A., Henry, E., Peytcheva, M. & Sun, L. (2013). Discretionary disclosure and the market reaction to restatements. *Review of Quantitative Finance and Accounting, 41*(1): 75-110.
Hanlon, M. (2005). The persistence and pricing of earnings, accruals, and cash flows when firms have large book-tax differences. *The Accounting Review*, *80*(1): 137-166.

He, L. & Chiang, H. (2013). Market reaction to financial statement restatement: A study on the information and insurance role of auditors. *Advances in Management and Applied Economics,* (3-4): 37-50.
Hribar, P., & Jenkins, N. T. (2004). The effect of accounting restatements on earnings revisions and the estimated cost of capital. *Review of Accounting Studies*, *9*(2-3): 337-356.
Huron Consulting Group, LLC. (2003). 2003 Annual Review of Financial Reporting Matters.
Huron Consulting Group, LLC. (2004). 2004 Annual Review of Financial Reporting Matters.
Jones, J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research, 29*(2): 193-228.
Jones, C. L., & Weingram S. E. (1997). The effects of insider trading, seasoned equity offerings, corporate announcements, accounting restatements and SEC enforcement actions on 10b-5 litigation risk. Working Paper. Stanford University.
Kalelkar, R., & Nwaeze E.T. (2011). Sarbanes-Oxley Act and the quality of earnings and accruals: Market based evidence. *Journal of Accounting and Public Policy, 30*: 275-294.
Kinney, W. R., Palmrose, Z-V., & Scholz, S. (2004). Auditor independence, non-audit services, and restatements: Was the U.S. government right? *Journal of Accounting Research*, *42*(3): 561-588.
Lazer, R., Livnat, J., & Tan, C. E. L. (2004). Restatements and accruals after auditor changes. Working Paper. New York University.
Palmrose, Z.-V., Richardson, V. J., & Scholz, S. (2004). Determinants of market reactions to restatement announcements. *Journal of Accounting and Economics, 37*: 59-89.
Palmrose, Z-V., & Scholz, S. (2004). The circumstances and legal consequences of non-GAAP reporting: Evidence from restatements. *Contemporary Accounting Research, 21*(1): 139-180.
Perotti, P. & Wagenhofer, A. (2014). Earnings quality measures and excess returns. *Journal of Business, Finance & Accounting, 41* (5): 545-571.
Reilly, D. (2007). Restatements still bedevil firms. *The Wall Street Journal* (February 12): C7.
Richardson, S., Tuna, I., & Wu, M. (2002). Predicting earnings management: The case of earnings restatements. Working Paper. University of Pennsylvania.
Salavei, K., & Moore, N. (2005). Signals sent by financial statement restatements. Working Paper. University of Connecticut.
Schipper, K., & Vincent, L. (2003). Earnings quality. *Accounting Horizons,* 17(Supplement): 97-110.
Scholz, S. (2014). Financial statement restatement trends 2003 – 2012. The Center for Audit Quality. https://www.thecaq.org/financial-restatement-trends-united-states-2003-2012
Sloan, R. G. (1996). Do stock prices fully reflect information in accruals and cash flows about future earnings? *The Accounting Review, 71*(3): 289-315.

Subramanyam, K. R. (1996). The pricing of discretionary accruals. *Journal of Accounting and Economics*, *22* (1-3): 249-281.

Xie, H. (2001). The mispricing of abnormal accruals. *The Accounting Review*, *76*(3): 357-373.

Xu, T., Najand M., & Ziegenfuss, D. (2006). Intra-industry effects of earnings restatements due to accounting irregularities. *Journal of Business, Finance and Accounting, 33*(5): 696-714.