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# The Market Impact of Financial Restatements after Sarbanes-Oxley

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Study results support prior pre-SOX studies that indicate minimal effect of financial restatements on security prices. However, the assessment of post-SOX firm restatements indicate that financial restatements have a significant downward effect on security prices, indicating that investors do perceive post-SOX financial restatements differently from those issued in pre-SOX time frames.

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# The Market Impact of Financial Restatements after Sarbanes-Oxley

Ronald Stunda

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The implication is that regulators and investor groups may be justified in their concern over the number of restatements subsequent to the passage of Sarbanes-Oxley. Although the vast bulk of the restatements do not result from misbehavior by management, there seems to exist a negative perception by stockholders of firms filing financial restatements. As a result, investors tend to bid down the market price of such firms. These results hold implications for all firms contemplating financial restatement.

## I. Introduction

In July 2002, Congress enacted the Sarbanes-Oxley Act (SOX)[1] in response to various corporate scandals including Enron, WorldCom, Tyco, and Global Crossing. Some of the major provisions of SOX include:

- The requirement that executive officers certify all Form 10-K and 10-Q reports filed with the Securities and Exchange Commission (SEC);
- The requirement that the CEO and CFO draft a written statement to accompany all financial statements that the latter present fairly the financial condition and results of the company's operations;
- The affirmation by the CEO and CFO that they have evaluated the effectiveness of the firm's internal controls and report any deficiencies or material weaknesses in such controls;
- The section 404 requirement of a report by management on the company's internal controls. The report must include an assessment of internal controls and be reviewed by the firm's auditors;
- A prohibition against an auditor providing certain non-auditing services during the time that firm performs auditing services;
- The establishment of the Public Company Accounting Oversight Board (PCAOB), which is responsible for the promulgation of auditing standards for public companies and performance of inspections of auditors of public firms;
- A tighter Form 8-K filing deadline (four instead of five days); and
- The imposition of harsher penalties for corporate criminal fraud.

Interestingly, implementation of three of these key regulatory provisions occurred almost at the same time. PCAOB Auditing Standard No. 2 (for section 404 audits on internal controls over financial reporting (ICOFR)) was approved by the SEC on June 17, 2004. Second, PCAOB inspection reports of public company auditors were first disclosed in August 2004 (Chang, Cheng and Reichelt. 2010). Third, the SEC tightened the Form 8-K filing deadline from five to four days in August 2004. Hence, it can be seen that August 2004 is a legislative watershed date for SOX implementation (Chang, Cheng and Reichelt. 2010). These and other SOX related requirements may have led to more financial restatement announcements (Public Company Accounting Oversight Board PCAOB 2007))

The risks associated with auditing increased significantly in the post-SOX period. SOX altered the regulatory regime of auditing by shifting the oversight of audit firms from the AICPA to the PCAOB. Also, Auditing Standard No. 2 lowers the risk threshold by mandating that the auditor examine all internal controls that could impact the occurrence of fraud that could have a material impact on the financial statements (Griffin and Lont 2010). "This standard also results in higher costs for auditors regarding significant deficiencies 'in internal controls' and 'reasonable assurance' that 'no material weakness' exists by

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[1] Pub. L. No. 107-204, 116 Stat. 745 (2010).

defining a deficiency as significant and a weakness as material 'if there is more than a remote likelihood' that a material misstatement will not be prevented or detected (Griffin and Lont 2010). Also, the insurance and other liability-related costs increased significantly in the post-SOX period (Rama and Read 2006).

Increased auditor risks and costs may have led to a rise in auditor conservatism and thus restatement of financial reports (Bryan-Low 2003). Hence, SOX may have brought about a change in the implications associated with releasing a set of financials. Investors' concerns over the integrity of financial reports report may have significantly changed after SOX.

## II. Purpose

This study examines the change in the market response to restatement announcements as a result of SOX. While it is well documented that the number of announced restatements increased dramatically since SOX (Weirich 2006), their impact on market value remains to be determined, as does the impact on investor confidence. It should be noted that announced restatements per se are not necessarily bad if they restore confidence in the reported financial numbers, and are more effective in incorporating information into share prices. By measuring the impact of restatement announcements on security prices of companies who have announced their intent to restate pre- and post SOX, it is possible to quantify changes in investor reaction to such announcements and therefore determine if investors react differently in an era of increased accountability and oversight.

## III. Literature Review

*a) Background of the restatement issue*

The number of financial restatements has been a concern for regulators even before the passage of SOX. In 2002, The General Accounting Office (GAO) conducted a comprehensive study of restatements from 1997 to 2002. The GAO found that the number of restatements grew from 92 in 1997 to 225 in 2001. The number of restatements grew even faster after that. A follow-up report by the GAO in 2005 reported over 650 restatements in that year. Taub (2010) finds that the number of restatements has remained high in subsequent years.

It is often assumed that a financial restatement is due to fraudulent behavior, however, there are other reasons far more likely than fraud. Plumlee and Yohn (2010) found four reasons that may be attributed to restatements. Those include: errors in the corporation's internal controls, intentional misrepresentation, problems from complex transactions, or a problem that arose from application of an accounting standard. In that study, the most common reason for restatement was found to be poor internal controls by the corporation. Plumlee and Yohn find this reason to be the prevailing cause of restatement in both pre- and post- SOX time frames. Williams (2012) finds that larger corporations (defined as greater than $1 billion in market capitalization) in particular, have developed stronger internal controls since the passage of SOX, whereas smaller companies have been slower in this process. As a result, Badertscher (2013) discovers that because of greater internal controls, the numbers of financial restatements among larger firms has declined since SOX implementation.

The Plumlee and Yohn study also analyzed the effect of restatements on net income. The study revealed that the majority of the restatements had a negative impact on net income. This confirmed a GAO study of 2006 which analyzed firms restating financials. The result of that study showed that approximately 40% of restatements were due to a revenue recognition problem, which resulted in lower income levels, while 20% of the restatements were due to an expense recognition problem, which resulted in lower income levels.

*b) Regulatory concerns over restatements*

The two regulators in the forefront of the U.S. capital markets are the Department of the Treasury and the Securities and Exchange Commission (SEC), and both are concerned with financial restatements. A report issued in 2008 by the Treasury Department detailed the changing nature of restatements (Scholz 2008). At about this same time, The SEC formed an Advisory Committee on Improvements in Financial Reporting (CIFR) to recommend ways to improve the usefulness of financial information to investors while reducing the complexity of the financial reporting system while minimizing restatements (CIFR 2008). One major recommendation resultant from this committee was the need to clarify guidance of financial restatements. The committee found restatements to be confusing to the average investor and as a result, sought to have them reduced in number. One way the committee recommended in accomplishing this dealt with materiality guidance. Under U.S. Generally Accepted Accounting Principles (GAAP), immaterial errors do not require restatement. CIFR believes that in some cases a quantitatively material error should be deemed immaterial if, for instance, the error relates to a business segment or one-time item that does not affect firm value or firm trends. CIFR also recommended that prior periods should not be restated for errors that are not material to those periods, even if the cumulative error is material in the current period.

Needless to say, these recommendations are controversial at the Financial Accounting Standards Board (FASB). Many market participants and investor groups do not want the current GAAP procedures of restating prior periods to correct errors to be changed.

They believe that the CIFR's recommendations grant too much discretion over disclosure issues to the preparers, and will thus make financials even more difficult for interpretation by the user. However, many see the CIFR recommendations as a valiant effort to at least stem some of the financial restatement growth.

*c) Studies involving restatement returns*

Plumlee and Yohn (2010) made no attempt to associate the impact of restatements on security prices. Studies conducted by Hranaiova and Byers (2007) and Scholz (2008) did attempt to associate financial restatements with security prices in a pre-Sox environment and found that restatement announcements to be negligible on security prices. These studies confirmed the 2006 GAO study which also found restatements to have a minimal impact on firms' security prices, mainly because of fewer restatements involving abusive or aggressive accounting practices and more cases where firms are restating to correct minor or technical deficiencies.

Subsequent studies such as Gordon, Henry, Peytcheva (2008), Sun (2008), Hennes, Leone, and Miller (2007), and Swanson, Tse, and Wynalda (2008) also examine the effect of restatements on security returns in a pre-Sox environment and also find negligible association between restatement and security returns. In addition, they also evaluate very short time periods in their analysis (ranging from 2-5 years), and utilize a long window for the restatement announcement (ranging from 3 days to 3 weeks).

This study will expand on prior research by assessing the market effect of financial restatements in a pre- versus post- Sox time frame. The pre-Sox time frame will consist of restatements made during the years 1996-2003, while the post Sox time frame will consist of restatements made during the years 2005-2012. The event window will center on the date that the restatement is made public. An event study will then be performed to assess market reaction to restatements made in a pre-SOX time period and then compared to the reaction in a post-SOX time period. Since U.S. regulators have placed importance on how investors perceive financial restatements, this study will be the first to indicate just how, and to what extent investor groups interpret financial restatements via stock price, before and after implementation of SOX.

## IV. Hypotheses Development

As previously noted, extant studies focusing on market reaction to financial restatements tend to primarily utilize data from a pre-SOX (i.e., prior to 2002) time frame. These studies show minimal impact on the security prices of corporations filing restated financials. The other aspect of these prior studies is that they used rather limited data points (i.e., average 3 year periods and 330 restatements). Limited data points have a tendency to bring into question the robustness of the results, in other words, can the findings be generalized across a broader perspective of both time frames and corporations? By utilizing both increased sample periods and total numbers of firms, the results of this study can then be compared to past studies and assessed for conformity. This gives rise to the first hypothesis, stated in the null form:

H1: The share price responses to unexpected earnings in a pre-SOX environment for firms issuing restated financials are not significant.

As we have seen, the focus on restated financial statements by U.S. regulatory agencies is primarily in a post-Sox time period. This is the time frame under which current governances apply and investor groups are most concerned. It is this time period that we therefore hope to gain better insight on the impact of financial restatements and their relevance to security prices. Again, prior studies indicate minimal impact of restated financials on security prices (in a pre-SOX era). Do these finding hold in a post-SOX environment? The answer to this question would seem very important to regulators, investor groups, and managers. This gives rise to the second hypothesis, stated in the null form:

H2: The share price responses to unexpected earnings in a post-SOX environment for firms issuing restated financials are not significant.

## V. Sample Selection

The aim of this study is to investigate the share price behavior of publicly traded firms to the presence of restated financial reports in both a pre- and post SOX time frame. Following Chang, Cheng and Reichelt (2010), August 2004 is used as the partition date between a pre- and post-SOX environment. The year 2004 is excluded from analysis to eliminate potential confounding events. The pre-SOX period is 1996-2003 and the post-SOX period is 2005-2012. A database was assembled for the above time periods first utilizing the Audit Analytics database, which represented 9 different industries and disclosed restatements for the study periods. A Lexis-Nexis and Electronic Data-Gathering, Analysis and Retrieval (EDGAR) search was then conducted to discover the appropriate release date of the restated financial report. The database was compiled to capture all announced restatements of quarterly and annual financial statements. These included restatements filed through amended financial statements as well as "stealth" restatements. Glass and Lewis (2006) report that as many as 45% of restatements do not use amended reports to restate financials, thus they are considered "stealth restatements." This study includes the "stealth" restatements in the database so as to not bias results.

Unlike past restatement studies (Palmrose, Richardson and Scholz 2004; Anderson and Yohn

2002), this study takes into consideration that there may exist overlaps between restatement events of issuers which would violate the independently identically distributed (IID)assumption set forth by Campbell and Wasley (1993) and later by Seiler (2000). To overcome this, an analysis is made of the database in order to eliminate any samples where the announcement dates overlap or "cluster." This not only permits adherence to the IID assumption but allows for more robustness in analyzing ultimate results. Table 1 indicates the breakdown of the pre- and post-SOX samples before eliminating overlap announcements and after eliminating overlap announcements.

*Table 1 :* Study Sample by Sample Period

| | Pre-SOX | Post-SOX |
|---|---|---|
| All restatement announcements (including overlap announcements) | 2,492 | 3,926 |
| Overlapping announcements | 388 | 519 |
| All restate0ment announcements (excluding overlap announcements) | 2,104 | 3,407 |

## VI. Methodology

*a) Hypothesis One*

The purpose of the test of the first hypothesis is to assess the relative information content of unexpected earnings of share prices in a pre-SOX environment for firms issuing restated financials. The following model is used to evaluate information content:

$$CAR_{it} = a + b_1UE_i + b_2MB_{it} + b_3B_{it} + b_4MV_{it} + e_{it} \quad (1)$$

Where: $CAR_{it}$ = Cumulative abnormal return firm i, time t

A = Intercept term

$UE_{it}$ = Unexpected earnings for firm i, time t, for all pre-SOX firms in sample

$MB_{it}$ = Market to book value of equity as proxy for growth and persistence

$B_{it}$ = Market model slope coefficient as proxy for systematic risk

$MV_{i\,t}$ = Market value of equity as proxy for firm size

$e_{it}$ = error term for firm i, time t

The coefficient "a" measures the intercept. The coefficient $b_1$ is the earnings response coefficient (ERC) for all pre-SOX firms in the sample (2,104). The coefficients $b_2$, $b_3$, and $b_4$, are assessed for any potential contributions to the ERC for all firms in the sample. To investigate the effects of the information content of the pre-SOX restated financials on ERC, there must be some control for variables shown by prior studies to be determinants of ERC. For this reason, the variables represented by coefficients $b_2$ through $b_4$ are included in the study. Unexpected earnings ($UE_i$) is measured as the difference between the actual earnings ($EA_i$) and security market participants' expectations for earnings proxied by consensus analyst following as per Investment Brokers Estimate Service (IBES) ($EX_i$). The unexpected earnings are scaled by the firm's stock price (P) 180 days prior to the forecast:

$$UE_i = \frac{(EA_i - EX_i)}{P_i} \quad (2)$$

For each cross sectional sample firm, an abnormal return ($AR_{it}$) is generated for event days –1, 0, and +1, where day 0 is defined as the restated earnings release date identified by EDGAR. The Dow Jones News Retrieval Service (DJNRS) is also reviewed to insure that confounding factors, such as change of corporate ownership or form, or management change, are minimized by excluding any firms which contain these events. The market model is utilized along with the CRSP equally-weighted market index and regression parameters are estimated between –290 and –91. Abnormal returns are then summed to calculate a cumulative abnormal return ($CAR_{it}$). Hypotheses 1 is tested by examining the coefficient associated with the unexpected earnings of pre-SOX firms restating financial reports. There are two possible conclusions; results may be noisy, or interpreted as being less beneficial to investors, which in this event, $b_1 \leq 0$, or these firms will possess an information-enhancing signal to the investor, which will result in $b_1 > 0$. Subsequent significance is then assessed.

*b) Hypothesis Two*

The purpose of the test of the second hypothesis is to assess the relative information content of unexpected earnings of share prices in a post-SOX environment for firms issuing restated financials. A model similar to the one utilized for hypothesis one is again used for hypothesis two. The only difference is that the coefficient of interest ($b_1$) measures all post-SOX firms in the sample (3,407). Similar metrics are used in order to keep comparisons between the two sample periods as similar as possible.

Ordinary least squares (OLS) regression is used to test the model for hypothesis one and two. Cross-sectional dependence and heteroskedasticity are not likely to be present in stock return metrics since sample

firms are not affected by common event dates. (Binder 1985; Bernard 1987; Grammatikos and Yourougou 1990). However, whenever a set of multiple regression variables are employed, there is a probability of the presence of multicollinearity within the set of independent variables which may be problematic from an interpretive perspective. To assess the presence of multicollinearity, the Variance Inflation Factor (VIP) is utilized.

## VII. Results

*a) Hypothesis One*

As indicated in Table 2, the response coefficient $b_1$, representing unexpected earnings for all firms during the pre-SOX study period was -.02 with a p-value of .15. The other control variables were not found to be significant at conventional levels. This finding indicates that when assessing the impact of restated financials on security prices in a pre-SOX time period, the association, even though negative (i.e., -.02) is not significant at conventional levels. This supports prior research that finds that in a pre-SOX environment, there is minimal effect of the restated financial statements on firms' security prices. Hypothesis one, which suggests that the security price effect of restated financials in pre-SOX time periods is insignificant, cannot be overturned.

In addition, whenever a set of multiple regression variables are employed, there is a probability of the presence of multicollinearity within the set of independent variables which may be problematic from an interpretive perspective. To assess the presence of multicollinearity, the Variance Inflation Factor (VIP) was utilized. Values of VIP exceeding 10 are often regarded as indicating multicollinearity. In the test of hypothesis 1, a VIP of 1.5 was observed, thus indicating the non-presence of significant multicollinearity.

*Table 2 :* Stock Price Effect of Pre-SOX Restated Financials

Test of Hypothesis 1

Model: $CARit = a + b_1(UEit) + b_2MBit + b_3Bit + b_4MVit + eit$

| | a | $b_1$ | $b_2$ | $b_3$ | $b_4$ | Adj. $R^2$ |
|---|---|---|---|---|---|---|
| . 07 | -.02 | .15 | .08 | .09 | .218 | |
| (.60) | (1.47)[a] | (.46) | (.34) | (.22) | | |

$b_1$ = information content of all firms in the full sample
$b_2$ = control variable for growth and persistence
$b_3$ = control variable systematic risk
$b_4$ = control variable firm size

a = significant at .15 level
n = 2,104 firm financial restatements
time period = 1996-2003

*b) Hypothesis Two*

As indicated in Table 3, the response coefficient $b_1$, representing unexpected earnings for all firms during the post-SOX study period was -.08 with a p-value of .01. The other control variables were not found to be significant at conventional levels. This finding indicates that when assessing the impact of restated financials on security prices in a post-SOX time period, the association is negative and significant. These results seem to indicate that in a post-SOX environment, investors perceive restated financials to have a negative or bad news impact and therefore adjust stock prices downward accordingly. Hypothesis two, which suggests that the security price effect of restated financials in post-SOX time periods is insignificant, must be rejected.

The Variance Inflation Factor (VIP) is again utilized to assess multicolliniaerity in the regression model. In the test of hypothesis 2, a VIP of 1.7 was observed, thus indicating the non-presence of significant multicollinearity.

*Table 3 :* Stock Price Effect of Post-SOX Restated Financials

Test of Hypothesis 2

Model: $CARit = a + b_1(UEit) + b_2MBit + b_3Bit + b_4MVit + eit$

| a | $b_1$ | $b_2$ | $b_3$ | $b_4$ | Adj. $R^2$ |
|---|---|---|---|---|---|
| . 05 | -.08 | .10 | .11 | .15 | .243 |
| (.42) | (2.36)[a] | (.32) | (.29) | (.18) | |

$b_1$ = information content of all firms in the full sample

$b_2$ = control variable for growth and persistence
$b_3$ = control variable systematic risk
$b_4$ = control variable firm size

a = significant at .01 level
n = 3,407 firm financial restatements
time period = 2005-2012

## VIII. Conclusion

This study analyzes the market price effect of financial restatements in a pre- versus post-SOX environment. Restatement of financials has long been an issue with investor groups and regulators alike. Since the advent of the Sarbanes-Oxley Act, we have seen a general increase in restatements and this has furthered to alarm these investor groups and regulators. Previous studies have analyzed predominantly pre-SOX effects of restatements on firm security prices, and have found the effects to be negligible. The studies that have attempted to assess the post-SOX security price effects have had limitations in years studied, numbers of firms, and robustness of models. This study overcomes many of these weaknesses by incorporating more study years (8 in each the pre- and post-SOX time periods), more firms (2,104 pre-SOX and 3,407 post-SOX firms), and greater robustness in the model (exclusion of overlapping announcements and tightening of the announcement window).

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