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The Effectiveness of the Sarbanes-Oxley Act in Constraining Earnings Management

A Capstone Project Submitted in Partial Fulfillment of the Requirements of the Renée Crown University Honors Program at Syracuse University.

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Table of Contents

Abstract

1. Introduction
2. Background on Earnings Management
- 3.1 Definition of Earnings and Earnings Management
- 3.2 How Do Companies Manage Earnings?
- 3.3 Why Do Companies Manage Earnings?
4. Measuring Earnings Management
5. Big Six Auditors Limit Earnings Management
6. Sarbanes–Oxley Act
7. The Idea for this Study
8. Objective of this Study
9. Hypotheses
10. Data Collection
11. Results
12. Summary and Conclusion

Abstract

Widespread concern about earnings management, the management of financial information to mislead investors, was one of the key factors leading to the passage of the Sarbanes-Oxley Act of 2002 (SOX). In this study, I investigate whether SOX is effective in limiting earnings management. Earnings management is a concern because misrepresentation of a company's financial position and the results of its performance can mislead investors into making poor investment decisions. This study examines earnings changes before and after the passage of SOX to see whether small positive earnings changes were less likely in the post-SOX period, supporting the effectiveness of SOX in constraining earnings management. This study did not find significant improvements in the quality of financial reporting after the passage of SOX. This lack of significant results could reflect the limits of the sample and the data analysis. It is also possible that earnings management was already being constrained prior to the Act, due to new auditing standards and media attention, or that earnings management was not as widespread as the media made it appear to be during the Enron and WorldCom scandals.

Keywords: earnings management, Sarbanes-Oxley (SOX), business ethics, financial reporting

Author's note: The following is a revised and updated version of a paper Troy Lee wrote based on a 2007-2008 academic year study of earnings management. In that study, Lee found that the Sarbanes-Oxley Act did reduce earnings management. He looked at earnings changes between 1998 and 1999 and between 2004 and 2005. Lee found that there was a spike above 0 in earnings changes between 1998 and 1999. He did not find the same spike in earnings changes between 2004 and 2005. These findings led him to conclude that SOX did constrain earnings management. This study improves on the previous study by examining earnings changes for a longer period, and limits the sample to firms with data for the entire sample period. The current study also examines the effect of Section 404 reporting on the internal control of earnings management.

1. Introduction

A wave of corporate governance failures in 2001 raised concerns about the integrity of the accounting profession and the information provided to investors. It was widely believed that companies extensively managed earnings in the period leading up to the Sarbanes-Oxley Act of 2002 (SOX). In an influential speech, former SEC chairman Arthur Levitt (1998) decried the loss of confidence in financial statements due to various earnings management practices. He made numerous recommendations to improve financial reporting, many of which were incorporated into the Sarbanes-Oxley Act.

There were many issues that caused the failures. One of the causes was the greed of executives at companies such as Enron and WorldCom. Another issue was that auditors were not effectively limiting their clients' discretion over financial reporting. Finally, but definitely not the least important, cause was ambiguities in accounting standards that allowed companies to manage earnings. As a result, there was a drop in investor confidence.

The failures were highly publicized by the media and forced Congress to pass the Sarbanes-Oxley Act, which regulated the accounting industry and helped “rebuild the faith of the investors” who depend on accountants for “information that is critical to the capital market.”¹ The changes in the law called for higher standards and stiffer penalties. In fact, former President George W. Bush commented at the time the act was implemented that the act was one of “the most far-reaching reforms of American business practices since the time of Franklin D.

¹ Melancon, Barry C. "A New Accounting Culture." *Journal of Accountancy* Oct 2002 Web.6 May 2009 <<http://www.journalofaccountancy.com/Issues/2002/Oct/ANewAccountingCulture.htm>>.

Roosevelt.”² Similarly, Barry Melancon, Chief Executive Officer and President of the American Institute of Certified Public Accountants, commented that SOX “contains some of the most far-reaching changes that Congress has ever introduced to the business world.”³

Regulations are effective only to the extent they are followed. Ultimately, the quality of financial reporting depends on the integrity of managers and the ability of auditors to say no. The auditor must have integrity. “No,” according to Melancon, “means protecting the public interest by rejecting unsound corporate accounting practices, reducing the risk of fraud and deceit, ensuring that the financial statements are not just accurate but illuminating and questioning and challenging management’s decision. When it is proper to do so, it means rejecting management’s accounting decision.”⁴ In other words, saying “no” means saying “yes” to protecting the interest of the public.

Although the Sarbanes-Oxley Act has provided many drastic changes, some of the consequences of the Act have yet to be studied. One of the areas pertains to the limitation of earnings management. It is unclear whether the act has actually limited earnings management by companies.

Therefore, the primary motivation for conducting this study is to investigate whether or not the Sarbanes-Oxley Act has been effective in reducing earnings management. Public company earnings changes are examined for the

² Bumiller, Elisabeth. "CORPORATE CONDUCT: THE PRESIDENT; Bush Signs Bill Aimed at Fraud In Corporations." *The New York times* 31 Jul 2002 Web.6 May 2009. <<http://www.nytimes.com/2002/07/31/business/corporate-conduct-the-president-bush-signs-bill-aimed-at-fraud-in-corporations.html>>.

³ Melancon

⁴ Melancon

period 1998 to 2006, to see if the incidence of small earnings increases was reduced in the post-SOX period. The study is divided into two periods: the period prior to the passage of the SOX (1997 through 2003) and the period after the passage of SOX (2004 to 2006). The study did not find significant changes in earnings management after SOX.

The remainder of the paper is organized as follows. The next section, section 2, provides background on earnings management. This is followed by section 3, which gives the definition of earnings management and section 4, which gives a description of measuring earnings management. Section 5 discusses the role of auditors in constraining earnings management, and section 6 provides additional details on the Sarbanes-Oxley Act. Sections 7 and 8 present the idea and objective of the study. Section 9 presents the research hypotheses. Section 10 discusses the data collection, and section 11 presents the results of the study. The final section presents the study's conclusions.

2. Background on Earnings Management

In David Burgstahler and Ilia Dichev's 1997 research paper, they argued that "firms manage reported earnings to avoid earnings decrease and losses."⁵ That is, firms manipulate their earnings to make it seem as if their company is improving every year. One of the purposes of earnings management is to meet or exceed earnings benchmarks, such as analysts' forecasts or prior year earnings.

⁵ Burgstahler, David, and Ilia Dichev. "Earnings management to avoid earnings decreases and losses." Journal of Accounting and Economics 24(1997):99.

In their study, Burgstahler and Dichev found that among firms there was disproportionate reporting of small earnings increases and decreases. They found that there were few firms reporting small decreases in their earnings, but a large number of firms reporting small increases in earnings.

There is a long history of firms attempting to prevent year-to-year earnings decreases. The objective of increasing earnings from the previous year is often stated in companies' annual reports. For example, in Tenneco's 1994 report, the company's CEO, Dana Mead, states: "I must emphasize that all of our strategic actions are guided by and measured against this goal of delivering consistently high increases in earnings over the long term."⁶ This statement by Mead indicates the pressure firms are faced with to increase earnings compared to the previous year. If the firm does not have a positive yearly earnings change, then it would not be fulfilling its objective to the company and stockholders. If that does not happen, then the firm's stock price may decline and the managers might get fired. This provides the incentive to manage earnings. In fact, the firm Eli Lilly, for many years, "emphasized a string of earnings increases which reached 33 years before it was broken."⁷ This portrays the importance of increasing the firm's earnings yearly and the pressure to do so.

Pressure to perform and meet earnings targets is not necessarily a bad thing, but it leads one to question whether firms are using improper methods to increase their earnings. In the Eli Lilly example, it seems unlikely that a company could increase earnings for 33 consecutive years, as it seems likely there must be

⁶ Burgstahler: 99-100.

⁷ Burgstahler: 100.

at least one year where the firm did not do as well. That is, there may be years where earnings might decrease due to the external environment, such as a recession. In another example, during its 1994 earnings release, former Bank of America CEO, Richard Rosenberg, mentioned that “Increasing earnings per share was our most important objective for the year.”⁸ This example further demonstrates the importance of having positive earnings, and firms will often make it their objective.

In a 1995 research, Mary Barth, John Elliot and Mark Finn, “Market rewards associated with patterns of increasing earnings,” found that “a consistent pattern of earnings increases commands higher price-to-earnings multiples.”⁹ That is, an earnings increase results in a higher stock price. Also, in 1996, a study by Harry DeAngelo, Linda DeAngelo and Douglas Skinner, “Reversal of fortune: Dividend signaling and the disappearance of sustained earnings growth,” found that when a pattern of earning increases is broken, there is a “14% negative abnormal stock return in the year the pattern is broken.”¹⁰ Basically, this indicates that when firms do not have an increase in earnings from one year to the next, their stock price is expected to drop. In other words, firms increase their yearly earnings to avoid a decrease in their stock price.

A paper written by Hayn in 1995 best describes the situation:

Interestingly, there is a point of discontinuity around zero.

Specifically, there is a concentration of cases just above zero,

⁸ Burgstahler:100.

⁹ Barth, Mary., John Elliot., and Mark Finn. “Market rewards associated with increasing earnings patterns.” *Journal of Accounting Research* 37:387-413.

¹⁰ DeAngelo, Harry, Linda DeAngelo, and Douglas Skinner. "Reversal of fortune: Dividend signaling and the disappearance of sustained earnings growth." *Journal of Financial Economics* 40: 341-371. Web.02 May 2009.

while there are fewer than expected cases (assuming the above normal distribution) of small losses i.e., just below zero). The frequency of observations in both the region just above and that just below zero departs significantly from the expected frequency under the normal distribution at the 1% significance level using the binomial test. These results suggest that firms whose earnings are expected to fall just below the zero earnings point engage in earnings manipulation to help them cross the “red line” for the year.¹¹

While Burstahler and Dichev examine earnings changes, Hayn examines the level of earnings, and examines whether companies attempt to avoid reporting losses. In other words, Hayn analyzed the distribution of earnings and losses and saw a trend where there are higher-than-expected results for earnings and lower-than-expected results for losses. This suggests that companies manipulate their earnings to avoid losses and to reflect earnings on the positive side of the distribution.

3.1 Definition of Earnings and Earnings Management

Investopedia.com defines *earnings* as the “amount of profit that a company produces during a specific period”; they have a direct relationship with stock price. This is because the amount of earnings a company earns will determine how successful the company might be in the near future. The earnings of a company are looked at by analysts and investors to determine if a particular stock is an attractive investment. Thus, a company with high earnings prospects

¹¹ Hayn, Carla. "The Information Content of Losses." Journal of Accounting and Economics 20(1995):132.

will generally have a higher stock price than a company with poor earnings prospects.

Healey and Wahlen (1999) provide an accurate definition of earnings management. "Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers."¹²

In other words, earnings management can be committed when the executives of a company change their financial statements to hide the actual earnings. According to Katherine Schipper (1989) in *Commentary on Earnings Management*, earnings management can be defined as "non-neutral financial reporting in which managers intervene intentionally in the financial reporting process to produce some private gain."¹³ Further, Healy and Wahlen mention that managers can intervene by "modifying how they interpret financial accounting standards and accounting data, or by timing or structuring transactions."¹⁴

In other words, income-increasing earnings management is a strategy used by managers to change their earnings, usually to make it seem that earnings are higher than they actually are. An example is a company trying to reach the benchmark they forecast at the beginning of the year. Another situation could be that consensus analyst forecasts predicted that a company would earn \$65 million

¹² Healy, Paul M., and James M. Wahlen. "A Review of the Earnings Management Literature and Its Implications for Standard Setting." *Accounting Horizons* 13(1999): 368.

¹³ Schipper, Katherine. 1989. Commentary on earnings management. *Accounting horizons* 3 (December): 91-102.

¹⁴ Healy:368.

in 2008, but they earned only \$63 million. In order to meet market expectations and avoid a decline in their stock price, the company might increase their report of earnings from \$63 million to \$65 million, using various accounting methods.

3.2 How Do Companies Manage Earnings?

There are many techniques that companies use to manage earnings. In his 1998 speech at the New York University Center for Law and Business, former Chairman of the Securities and Exchange Commission, Arthur Levitt, discussed five popular techniques.

Levitt points out what he calls “Big Bath” restructuring charges. In order to survive in a competitive environment, companies often have to “assess the efficiency and profitability of their operations.”¹⁵ Thus, companies have to restructure their business to survive against their competitors. Some restructuring actions include closing stores or laying off workers. Big Bath charges are one-time charges taken by the company. General accepted accounting principles (GAAP) require companies to estimate the cost of the restructuring in year one, even though the expense might not occur until year two or three. The estimated expense recognized will decrease the year’s earnings. If the company estimates too much in year one, they can reverse it in year two and, thus, increase their earnings for year two. A problem is presented because companies tend to overstate these charges. The theory is “Wall Street will look beyond a one-time

¹⁵ Levitt, Arthur. "The "Numbers Game." *SEC*. 28 SEP 1998. 11 Apr 2009 <<http://www.sec.gov/news/speech/speecharchive/1998/spch220.txt>>.

loss and focus only on future earnings.”¹⁶ Therefore, no matter the size of the loss, if it is only for one time, Wall Street will not look at it. They will focus on the company’s future earnings. That is why companies write down a larger expense than usual to create a reserve for future losses.

The second issue Levitt discusses is called creative acquisition accounting, or merger magic. In this creative accounting method, when a company acquires another company, they have to write off the acquisition cost of the subsidiary as “in-process Research and Development.”¹⁷ The acquisition cost must be written off the year the asset is acquired. Thus, the parent company can write off as much liability as they want for the acquisition, as a one time write-off. An example would be when WorldCom once tried to write off their acquisition of MCI for \$7 billion, but the Security and Exchange Commission did not allow it. So WorldCom wound up writing off MCI for \$3.2 billion under Research and Development. This shows that a company can write off a huge amount of liability through an acquisition and use it to boost their earnings later.

The third issue Levitt discusses is called Miscellaneous Cookie Jar Reserves. Companies create the “cookie jar reserves” to allow them to beat the Wall Street estimates, no matter how the company actually performs. They are able to accomplish the goal by “using unrealistic assumptions to estimate liabilities for such items as sales returns, loan losses or warranty costs.”¹⁸ By doing this, they are able to hide their earnings when the company is doing well, but when the company is doing badly, they can pull those earnings out of their

¹⁶ Levitt

¹⁷ Levitt

¹⁸ Levitt

reserves to cover up the loss. In other words, a company sets money aside when it are doing well and uses the money when they are not doing well.

The fourth gimmick Levitt points out is the abuse of materiality. Materiality in financial reporting means how significant an amount is to the overall financial statements and how much it affects the required precision of estimates. Auditors give leeway to a company in determining whether a misstatement is material. Levitt argues that companies use this to their advantage by misstating items to the maximum amount that is considered insignificant or not immaterial. Even though those amounts are quantitatively immaterial, they may still impact users' decisions, as even a penny change in reported earnings per share may impact stock prices.

The last issue Levitt brought up is that companies recognize revenue too early. He mentions that companies recognize revenue "before a sale is complete, before the product is delivered to the customer, or at a time when the customer still has options to terminate, void or delay the sale."¹⁹

The overall message of Levitt's speech was that there was a problem with financial reporting. He mentioned that the problem is that many companies create earnings reports that reflect the earnings the company wants or needs to meet Wall Street's projections, instead of reporting the true underlying value of the company.

3.3 Why Do Companies Manage Earnings?

¹⁹ Levitt

As identified by Levitt, sales and accounts receivable are the accounts most often involved with earnings management. Beasley et al. (1999) found that 50 percent of financial statement frauds involving public companies over the period 1987-1997 involved revenue recognition. Because of the prevalence of these frauds, auditing standards specifically require that auditors identify a fraud risk for revenue recognition, and the SEC has also issued revenue recognition guidance in Staff Accounting Bulletin 99. Interestingly, revenue recognition was not the central issue at Enron or WorldCom, the two major fraud cases leading up to SOX, although several other major frauds of this time period did involve revenue recognition.

An example of earnings management would be a publishing company that is behind in their sales target at the end of the year. Earnings management would be committed if the manager of the publishing company decides to meet their forecast goal. The manager would then send out books to different bookstores, even though these bookstores did not order and would not need the books until the next year. The publisher then records the revenue upon shipping the books, and this allows the company to meet its profit goals. One incentive managers is that they get year-end bonuses for meeting their revenue or profit goals. In the case of publicly traded companies, when they meet the benchmark for the year, their stocks look more attractive to investors.

A great real life example is Happiness Express, Inc. This business was started by Joseph Sutton and his brother Isaac. It involved identifying “trendy characters introduced to children in the United States by television programs,

major movies, books and other publications.”²⁰ Despite the company’s success, there were doubts about whether the company could continue its success because of children’s shifting tastes. Sutton predicted optimistic results for 2006, but it did not work out as he had expected. In fact, the company booked phony sales and receivables during 2005 and 2006 to meet its goals.

The drive behind committing earnings management is best stated by Warren Buffet in a CNN article titled “Buffet on stocks, junk, ‘time bombs’”:

“Managers that always promise to ‘make the numbers’ will at some point be tempted to make up the numbers.”²¹ This quote is saying that the pressure on managers to meet goals forces them to try to meet them, and earnings management is one of the methods. The Securities Exchange Commission (SEC) can fine corporations who commit this crime. However, there is not much investors can do, because it is hard for them to pick it up when corporations do commit the crime. When they find out, it is already too late. A good example would be Enron.

Although it has been mentioned that companies often manage their earnings by adding more sales to boost their revenue, it is worth noting that trimming revenue is another way to manage earnings in the future. That is, companies will cut their earnings to meet their target. For example, if a company’s target earnings for the year were \$72 million and they make \$85 million at the end of the year, the company will try to find ways to reduce revenue

²⁰ Knapp, Michael C.. *Contemporary Auditing: Real issues and Cases (Paperback)*. 6. Cincinnati, OH: South-Western College Pub, 2006. Print.

²¹ "Buffett on stocks, junk, 'time bombs' ." Personal Finance-Investing 10 Mar 2003 4 Apr 2009 <<http://money.cnn.com/2003/03/10/pf/investing/buffett/index.htm>>.

to lower earnings, say, to \$72 million. The explanation for this is it is better to have a steady increase in earnings than a huge increase one year and a decrease the next.

4. Measuring Earnings Management

It is difficult to detect earnings management. Because earnings management is generally done through accounting accruals, one line of research examines whether companies' accruals deviate from expectations, using so-called abnormal accruals models. Because earnings are usually managed to meet objectives such as earnings targets, other studies use earnings benchmarks to detect earnings management.

In a 2003 study, Mark Nelson, John Elliot and Robin Tarpley used a field-based questionnaire to ask auditors from one of the then Big 5 accounting firms to identify techniques that their clients used to manage earnings. This study was based on 515 experiences from 253 auditors, involving attempts by their client to manage earnings. The study found that earnings management occurred in key areas such as "revenue recognition, business combinations, intangibles, fixed assets, investments and leases, and the most identified attempt was with reserves."²² The respondents believe that the managers' attempts were motivated by different incentives, such as to beat "analysts' estimates to influence the stock market, to reach targets sets by compensation contracts or debt covenants, to

²² Nelson, Mark W. "Evidence from Auditors about Managers' and Auditors' Earnings Management Decisions." *The Accounting Review* 77(2002): 175-202. Print.

communicate economic information to stakeholders, and to smooth income or improve future income as well as a combination of the incentives.”²³

In Nelson, Elliot and Tarpoly’s they found “when transaction structuring is involved, managers are more likely to attempt earnings management and (auditors are less likely to adjust earnings management attempts), that are governed by precise standards, and when transaction structuring is not involved, managers are more likely to make attempts (and auditors are less likely to adjust attempts) that are governed by imprecise rules.”²⁴ The meaning behind the conclusion is that managers make earnings management attempts and auditors have to figure out whether the attempts are significant enough to require an adjustment. In order to combat this, managers change the amounts and methods they use to achieve earnings management, so that auditors will not require them to adjust. Otherwise, the auditors will not give them an unqualified opinion on their financial statements. Thus, the conclusion is that auditors are unlikely to require a company to adjust its financial statements if the company follows structured transaction rules when the standards are precise, or if the managers follow unstructured transaction rules when the standards are imprecise.

To explain further, transaction structuring occurs when managers structure transactions to meet certain objectives. One example would be a manager structuring transactions by timing events. That is, managers can “recognize accumulated unrealized gains on available-for-sale securities in a particular

²³ Nelson

²⁴ Nelson

accounting period by selling the securities as required by SFAS NO. 115.”²⁵ It is important to note that transaction structuring requires a transaction fee, a fee paid to experts for their advice and for the “modification of operational decisions that presumably were optimized prior to the structuring.”²⁶ Thus, managers use transaction structuring only when the “anticipated financial reporting benefits exceed its anticipated out-of-pocket and operational costs.”²⁷

Nelson also found that “managers are more likely to make attempts that increase current-year income but auditors are more likely to require that those attempts be adjusted, that managers are more likely to make attempts that decrease current-year income with unstructured transactions and when standards are imprecise, and that auditors are more likely to require adjustment of attempts that they identify as material or that are attempted by small clients.”²⁸ In other words, auditors are more likely to make managers adjust their financial statements (1) when they increase their income when the standards are precise, or they decrease their income when the standards are imprecise, (2) increases or decreases are material or (3) when a small company increases or decreases its income.

Cohen, Dey and Lys found that accrual-based earnings management increased steadily from 1987 to the period before the passage Sarbanes-Oxley act and decreased significantly after the passage of the Sarbanes Oxley. On the other hand, they found during the same period that real earnings management activities decreased prior to the passage of the Sarbanes-Oxley Act and increased

²⁵ Nelson

²⁶ Nelson

²⁷ Nelson

²⁸ Nelson

significantly after. The significance of the finding is that it suggests firms switched from accrual-based earnings management activities to real earnings management activities after the passage of the Sarbanes-Oxley Act. Accrual-based earnings management occurs when firms use accounting methods and decisions to alter reported earnings. Real earnings management involves using operating decisions to manage earnings. Real earnings management is used because it is harder to detect. However, real earnings is more costly to use. There are multiple ways to commit real earnings management; Cohen, Dey and Lys describe three: The first is accelerating the timing of sales by offering huge price discounts or offering more lenient credit terms. The only problem is that sales will decrease in the future once the discount is removed. The second method is lowering the cost of goods sold by increasing production. The problem is that the company has more inventory and “other production and holding costs will lead to higher annual production costs relative to sales and lower cash flows from operations given sales levels.”²⁹ The third method is to decrease discretionary expenses, such as advertising, or research and development.

5. Big Six Auditors Limit Earnings Management

Jerry Francis, Edward Maydew and Charles Sparks, in “The role of Big 6 auditors in the credible reporting of accruals,” look at whether firms that generate high accruals are more likely to use Big 6 auditors. A likely reason a firm with high accruals might hire a Big Six auditor is that a Big Six auditor provides higher

²⁹ Cohen, Daniel A. "Real and Accrual-Based Earnings Management in the Pre- and Post-Sarbanes-Oxley Periods." *The Accounting Review* 83(2008): 757-787. Print.

assurance. They looked at a large sample of NASDAQ firms from 1975 to 1994 and found that Big Six auditors have higher total accruals but lower estimated discretionary accruals. They concluded that Big Six auditors “constrain aggressive and potentially opportunistic reporting.”³⁰

In 2002, when studying a sample of Initial Public Offering firms, Jian Zhou and Randal Elder found that specialist auditors constrain earnings management. In another study, they aimed to address a similar issue, but this time looked at firms using seasoned equity offerings. They investigated the “relationship between audit quality as measured by audit firm size and industry specialization, and earnings management as measured by discretionary current accruals.” A seasoned equity offering (SEO) is an equity offering by an existing publicly-traded firm. The advantage of using SEO companies is that the firms would want to engage in income earnings management to ensure the success of their SEO. The main research question Zhou and Elder’s study aimed to address is how Big 5 and industry specialist auditors constrain earnings management in the SEO setting. Zhou and Elder found that SEO firms that use Big 5 auditors have lower earnings management in the years before, during and after the SEO. They also found that industry specialists are associated with lower earnings management only during the year of the SEO. Zhou and Elder’s findings contribute to the accounting literature by proving that audit quality and industry specialization reduces or limits earnings management.

³⁰ Francis, Jere. "The Role of Big 6 Auditors in the Credible Reporting of Accruals." *Auditing: A Journal of Practice and Theory* 18(1999): 17-. Print.

6. The Sarbanes Oxley-Act

Before the passage of the Sarbanes-Oxley Act, the accounting industry followed a self-regulation model. In the late 1990s, accountants and corporate executives took advantage of their freedom and engaged in earnings management. As a result, top executives made millions. Later on, when these actions were revealed, many investors lost money, and in some cases, such as that of Enron, employees lost their jobs and retirement funds.

There were two waves of accounting fraud scandals. The first wave involved Enron/Arthur Andersen, Global Crossing and Imclone in late 2001. The second wave included WorldCom, Adelphia, and Tyco in the summer of 2002. The second wave caused Congress to act quickly. This is because, after the first wave of scandals, Congress was not sure what to do. However, after the second wave of scandals, they quickly decided the Act must be passed. It was drafted by Democrat Paul Sarbanes and Republican Michael Oxley. When the Act was signed into law on July 30, 2002, the business world was faced with stricter rules. The goal of the Act was to stop the misreporting of financial information by firms and to restore the confidence of investors after they had lost thousands of dollars when the firms went bankrupt.

Excerpts from the Sarbanes Oxley Act:

- Section 101: Creation of the Public Company Accounting Oversight Board (PCAOB).

The establishment of the Public Company Accounting Oversight Board was to address the problem with the accounting industry's self-

regulation model. The goal of the PCAOB was to make sure auditors were following the rules and doing their job right. During the 1990s, many accounting firms were more interested in selling their consulting services. In fact, their consulting services were generating more revenue than their audit services. Thus, auditors' independence was jeopardized because audit services are suppose to be the primary service offered by the accounting firm, the revenue driver. In this situation, audit services were not the revenue driver; thus, many failed to do their job in audits, which is to protect the public.

The PCAOB limits earnings management by making sure auditors are doing the best job possible to detect earning management.

- Section 202: Company has to have an independent board of directors to supervise auditors.

Prior to the passage of the Act, the client had control over the auditor because the client was paying the auditor's fee. More importantly, the CEO and CFO had the right to fire the auditor at any point. Thus, the auditor's independence could be compromised because if they did not do what management told them to do, they could be fired. An independent board and audit committee help to keep auditors independent of the firm. The addition of an independent audit committee limits earnings management by making auditors more willing to tell their clients there is something wrong with their financial statements, without the risk of being fired.

- **Section 302:** The CEO and CFO must certify that they have reviewed the quarterly and annual reports before the company sends them to the SEC.

Prior to SOX, companies often produced financial statements that were not accurate. They then forced auditors to sign-off on them. When the companies got into trouble, the CEOs did not take responsibility for it. The addition of this section forces CEOs and CFOs to make sure that they review the quarterly and annual financials and ascertain that they are as accurate as possible.

The certification of the financial statements by CEOs and CFOs ensures that the financial statements are most likely accurate. This is because, if they are not, and the CEOs and CFOs sign off on them, they will be held responsible.

- **Section 404:** Include Internal Control Report in annual report. CEO and CFO have to evaluate the effectiveness of the internal controls and report weaknesses.

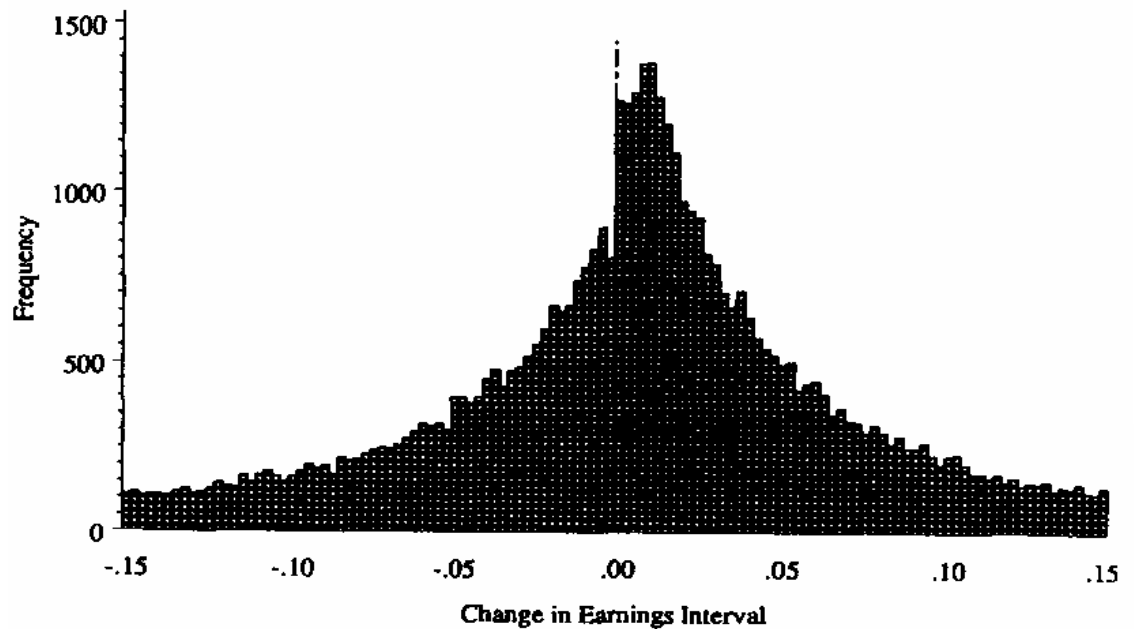
Section 404 complements Section 302. Section 404 states that the CEO and CFO must establish and maintain adequate internal controls, so that accurate financial statements can be produced.

The section limits earnings management by ensuring that CEOs and CFOs are doing everything they possibly can to ensure that the financial statements are put together in the right way.

7. The Idea for this Study

There have been many articles written about the Sarbanes-Oxley Act since its passage. Many of the recent articles have focused on different sections of the Act. One of the topics that is relevant, but is not talked a lot about in the literature, is how the Sarbanes-Oxley Act has influenced how earnings are reported. The topic is worth exploring because one of the main reasons the Sarbanes-Oxley Act was passed was due to the misreporting of earnings. Accordingly, examining earnings management before and after the Act will provide evidence on whether or not the Sarbanes-Oxley Act has been effective in reducing earnings management. Though there are articles written about this topic, none has compared earnings management before and after the Sarbanes-Oxley Act was passed. That is the question I aim to address in this study.

My advisor and I chose this topic to research. We based our study on a journal article written by Dichev and Burgstahler fifteen years ago. Our hypothesis is that, if there is reduced earnings management in the wake of SOX, then the earnings of all firms should closely resemble a perfect bell curve. In the case presented by Dichev and Burgstahler, the bell curve is shifted to the right, due to the greater-than-expected number of small earnings increases.



The graph shows a total 64,466 observations between 1977 and 1994. The observations in each year are between 3,000 and 4,000 in number. One important fact to know about the observation is that the mean and median changes each year were positive.

The spike in the curve just past zero earnings changes is strong evidence that companies manage earnings to exceed the prior year level of earnings. Absent earnings management, we would not expect discontinuity in the distribution. So we believe that Sarbanes-Oxley, if it has been effective, would reduce the number of small positive earnings changes.

8. The Objective of this Study

The objective in this study is to compare the earnings of firms prior to and posterior to the passage of the Sarbanes-Oxley Act. The specific section of the Act the study will focus on is Section 404. This section asks the CEO and CFO to evaluate the effectiveness of the internal controls and report weaknesses. Internal controls are methods put in place to ensure that financial and accounting information meet operational targets and to transmit management policies throughout the organization. The two types of firms examined in the study are firms compliant with Section 404 (firms with market capitalization of over 75 million dollars) and the non-404-compliant firms. The years studied are 1997 to 2006. By doing this study and analyzing the results, I hoped to find out if the Sarbanes-Oxley Act has had an effect on earnings management.

9. Hypotheses

The main independent variable in this study is the Sarbanes-Oxley Act. My dependent variable for this study is changes in reported earnings.

Hypothesis 1: The Sarbanes-Oxley Act affects earnings management.

The post-Sarbanes-Oxley Act distribution of earnings changes will be different from the pre-Sarbanes-Oxley Act distribution of earnings changes.

Hypothesis 2: Section 404 of the Sarbanes-Oxley Act affects earnings management

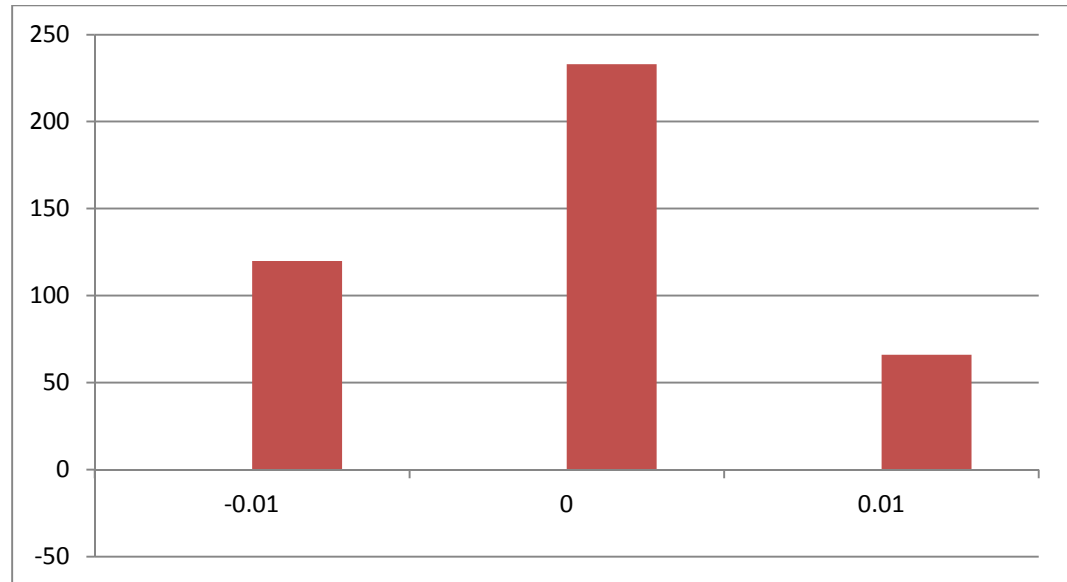
The post-Sarbanes-Oxley Act distribution of earnings changes will be different for Section 404 firms than for non-Section 404 firms.

10. Data Collection

1. Received data from research advisor Randal Elder on the basic earnings per share (EPS) of non-financial institutions, companies that are not holding companies or fund companies, and companies that have EPS for the years 1997-2006.
2. The data received had to be cleaned and modified.
3. The key piece of information in this data is earnings per share (basic).
4. I first had to delete holdings and funds and financial institutions because those entities are not part of the study.
5. Next, I deleted firms that did not have earnings per share for the years 1997 to 2006.
6. Next, the change in earnings per share from one year to the next was calculated.
7. Finally, the data were sorted by year and earnings changes per year.
8. My final data had 25,631 observations for 2,563 companies. The observations for the reported earnings are for the years 1997-2006
9. The earnings changes measured were from 1998-2006 because the data were not available for 1996. Therefore, the earnings changes in 1997 could not be calculated.
10. A histogram was plotted based on the findings.

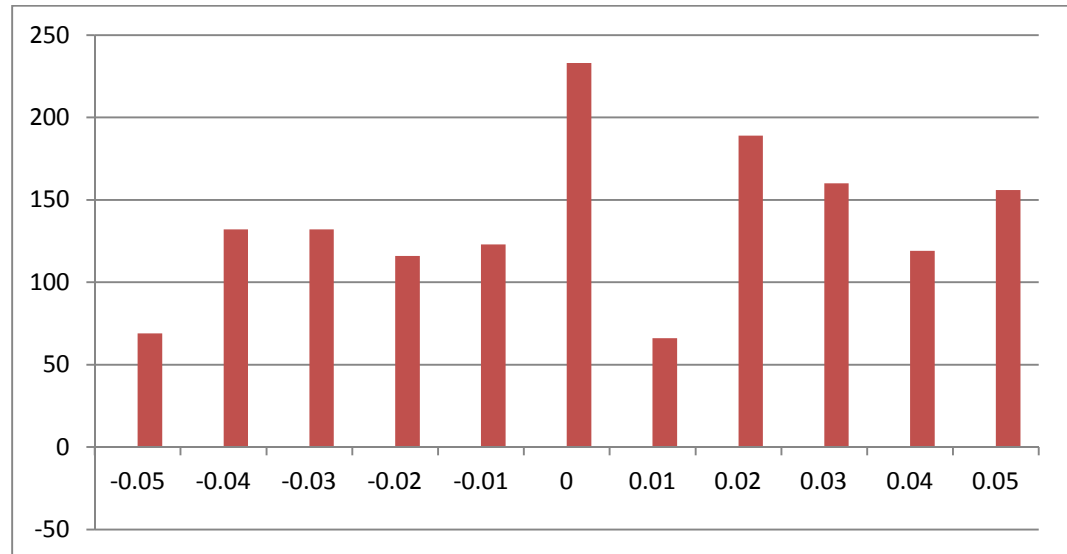
11. My Results

1998-2003



The 1998-2003 graph shows the frequency of earnings changes in companies from -0.01 to 0.01 in the years 1998 to 2003. In the graph, it appears that there is no spike at 0.01. Thus, from the graph, one cannot conclude that earnings management is occurring. In order to find more conclusive evidence, the graph is expanded.

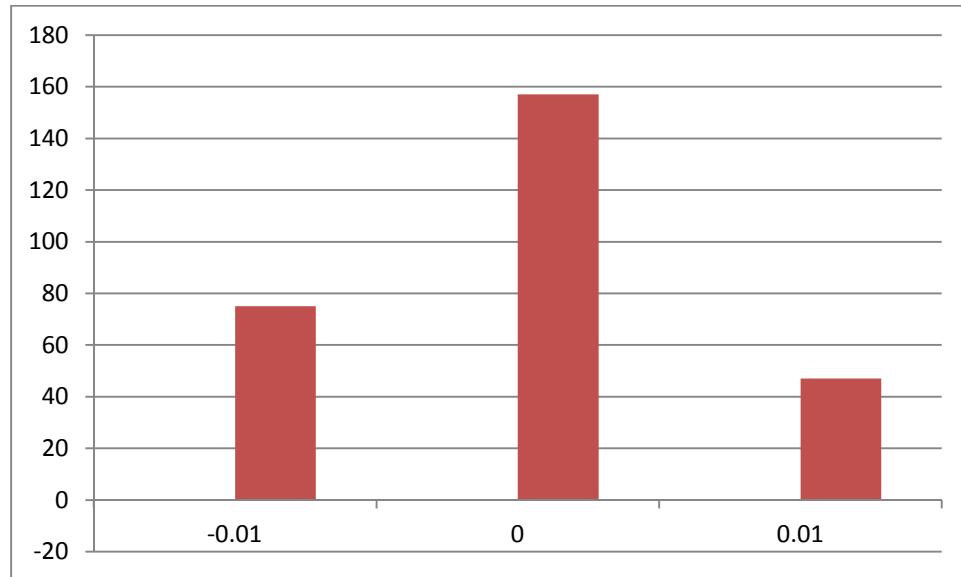
1998-2003 Expanded



The expanded 1998-2003 graph shows earnings changes from -0.05 to 0.05.

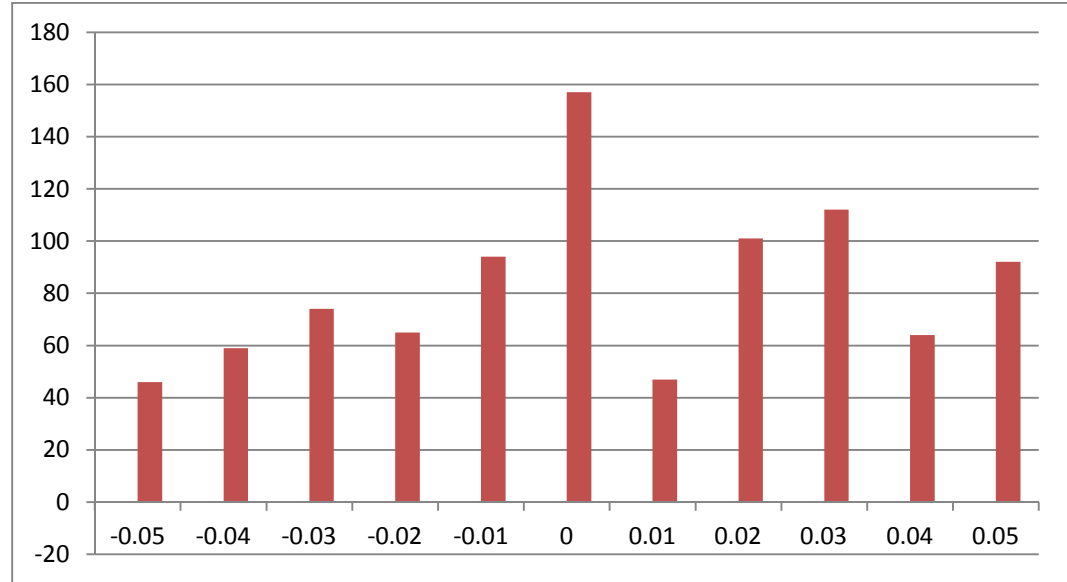
Although there are a smaller number of positive changes of .01, there does appear to be a spike at 0.02. This is somewhat consistent with the findings in Burgstahler and Dichev that companies manage earnings to register small earnings increases.

2004-2006



The 2004-2006 graph shows the frequency of earnings changes from -0.01. to 0.01. This graph is an example of a histogram where earnings management has not occurred. If our hypothesis is true and the Sarbanes-Oxley Act has limited earnings management, then there should be no spike around 0, as can be seen.

2004-2006



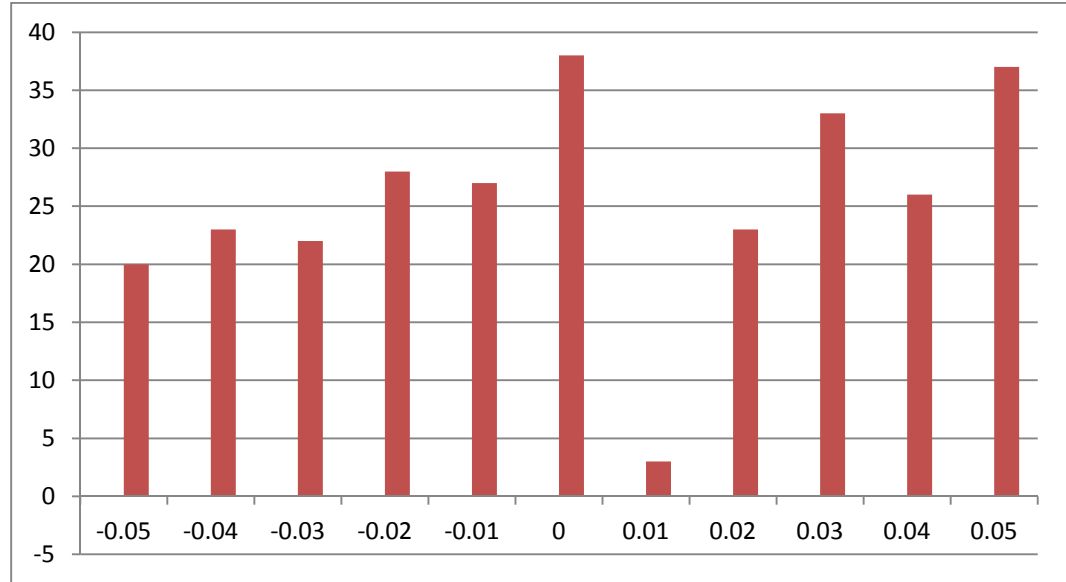
Consistent with my observations for the years 1998-2003, a histogram with earnings changes of -0.05 to 0.05 was observed. Again, consistent with the results of the previous graph, this graph does not provide evidence of earnings management.

1998-2006 Table of Earnings Changes

	-0.05	-0.04	-0.03	-0.02	-0.01	0	0.01	0.02	0.03	0.04	0.05	
Pre-SOX	69	132	132	116	123	233	66	189	160	119	156	1495
%	4.62%	8.83%	8.83%	7.76%	8.23%	15.59%	4.41%	12.64%	10.70%	7.96%	10.43%	100 %
Post-SOX	46	59	74	65	94	157	47	101	112	64	92	911
%	5.05%	6.48%	8.12%	7.14%	10.32%	17.23%	5.16%	11.09%	12.29%	7.03%	10.10%	100 %

In order to better analyze the results, a comparison by percentage for specific earnings changes was done. The number of observations in each cell cannot be compared because the amount of data used in 1998-2003 was greater than 2004-2006. Based on an analysis of the percentages, it appears that the percentage for each earnings change, pre-SOX and post-SOX, is fairly similar. Thus, the data do not provide evidence that SOX limited earnings management.

2004-2006: Companies who comply with SOX Section 404



To analyze the results further, only the earnings changes of companies that comply with SOX Section 404 were graphed; that is, companies which have a market capitalization of over \$75 million were included. The results provide some evidence of limits on small positive earnings changes, although there is also a spike at 0.05.

12. Summary and Conclusion

After sorting the data, plotting the graphs and tables, and analyzing the results, the conclusion that can be drawn is that there is no significant change in the distribution of earnings pre- and post-SOX. One possibility is that SOX has not affected the ability of a company to manage earnings. Another possibility could be that earnings management existed pre-SOX, but was not widespread among companies, despite evidence from Burgstahler and Dichev. My pre-SOX data came from after the period studied by Burgstahler and Dichev and failed to replicate their finding of earnings management. One possibility could be that rules such as SEC Staff Accounting Bulletin: No. 99 - Materiality and stronger audit committees were already effective in limiting earnings management prior to passage of the Act.

Another possibility is that companies may have substituted real earnings management, as described by Cohen, Dey and Lys, for accounting earnings management. Auditors are expected to be responsible for accounting for earnings management, but are not generally held responsible for real earnings management that reflects operating decisions. If companies have increased their use of real earnings management, the distribution of earnings changes may be unaffected by the Act.

Although this study does not find that SOX limited earnings management, additional analyses using more precise or alternative measures may find evidence of changes in earnings management. Finally, since the Act was designed to restore

investor confidence, perceptions of changes in financial reporting may be more important than actual changes in reported earnings.

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Written Capstone Summary

The purpose of this study is to investigate how effective the Sarbanes-Oxley Act is in limiting companies from managing their earnings. Based on the regulations included in the Act, one would conclude that without a doubt, the Act had an impact on earnings management. However, this study failed to find changes in earnings management after the Act.

The Sarbanes-Oxley Act was passed in July 2002 after the failure of companies like Enron and WorldCom. It was passed mainly due to pressure by the media after the fall of WorldCom. The purpose of the Act was to regulate the accounting industry and rebuild the trust of the investors. Some of the important sections of the act that could pertain to limiting earnings management are the creation of the Public Company Accounting Oversight Board, the increased qualifications and independence of the audit committee, and the requirement for managers to certify that financial statements are accurate. All of those sections are included to ensure that auditors are independent and take responsibility when they sign off on financial statements.

The definition of earnings management is the practice of managers changing the financial reports of a company to make it seem like the company is doing better than it actually is. The past history of firms shows that consistent increases in earnings is good for a company and that a decline in earnings has a significant negative effect on the stock price of the company. Thus, earnings management can be done by overstating or understating the company's income, to make sure there is a steady increase in a company's earnings year after year.

The study had two hypotheses. The first hypothesis is that there will be decreased earnings management due to the Sarbanes-Oxley Act and that this can be determined by comparing earnings changes before and after the passage of the Act. The second hypothesis is that Section 404 of the Sarbanes-Oxley Act will limit earnings management for firms that comply with Section 404. The data collected included over 25,000 observations for 2,500 companies. Public companies earnings changes were examined for the period 1998 to 2006 to see if the incidence of small earnings increases was reduced in the post-SOX period. The year 1997 was not included because earnings figures for 1996 were not provided, so that the earnings change for 1997 could not be calculated. The first study was divided into two periods: the period prior to the passage of SOX (1997 through 2003) and the period after the passage of SOX (2004 to 2006). The second study examined earnings changes in companies that comply with SOX Section 404, with market capitalization over \$75 million.

The results were analyzed by comparing graphs and tables. For the graph of years 1998-2003, there was no spike in the range -0.01 to 0.01, but there was a spike at 0.02 when the range was expanded to -0.05 to 0.05. For graph of years 2004-2006, the changes in the range of earnings from -0.01 to 0.01 and -0.05 to 0.05 did not provide evidence of earnings management. To further analyze these results, the data were compiled into a table, and the changes in the percentages for earnings in the range -0.05 to 0.05 were compared. I did not compare the amounts because there was more data for the years 1998 to 2003 than 2004 to 2006. The results from the table comparison showed no change pre-SOX compared to post-

SOX. Next, only companies with a market capitalization of over \$75 million were plotted into a histogram. This is because only companies with a market capitalization of over \$75 million have to comply with SOX Section 404. The results provide some evidence of limits on small positive earnings changes, although there is also a spike at 0.05.

The conclusion of the study is that there is no significant change in earnings reported post-SOX as compared to pre-SOX. This could be due to the fact that laws were already in place before the passage of the SOX, or to the fact that earnings management is not as widespread as the media have made it out to be.