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Has Sarbanes-Oxley Improved Quarterly Financial Reporting Quality?

An Examination of the Effects of SOX Sections 302 and 906

A Dissertation
Presented for the
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Degree
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Stacy Ann Mastrolia
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Dedication

This dissertation is dedicated to my parents, Michael and Theresa Roland, who always tell me I can do anything I set my mind to. To my siblings, Mary, Cheryl and Joseph, who always support and encourage me in everything I do. To Martin Ellis, who believes in me, inspires, calms, and centers me.

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Abstract

This paper examines whether the SOX 302 and 906 provisions improve quarterly financial reporting quality. In the post SOX 302 and 906 environment, managers are required to certify the accuracy of the quarterly financial statements, and false certification carries new criminal penalties. Specifically, this paper studies whether, on a quarterly basis, the absolute value of performance-adjusted abnormal accruals decline following the implementation of SOX 302 and 906. My results indicate that quarterly financial reporting improves after SOX 302 and 906 for firms that exhibit aggressive earnings management in the pre-SOX period, while quarterly financial reporting quality decreases for firms that exhibit low earnings management in the pre-SOX period. These results suggest that SOX 302 and 906 might be more effective at constraining earnings management behavior for those firms that had used it most aggressively pre-SOX.

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I. Introduction

Following disclosure of some of the most egregious corporate frauds in history,¹ Congress passed the Sarbanes-Oxley Act of 2002 (SOX). One of the primary goals of SOX is to improve financial reporting quality for public companies. The provisions of Section 302 require the CEO and CFO of a public company to personally certify the financial statements, including the effectiveness of internal control over financial reporting and any material changes in internal control (*Sarbanes-Oxley Act of 2002*).² Section 906 imposes severe criminal penalties for false management certifications made knowingly or willfully; these penalties far surpass the previous penalties for lying to the auditors. The Securities and Exchange Commission (SEC) clearly intends that managements' increased ownership of and liability for the accuracy of the financial statements, created by Sections 302 and 906, would improve quarterly (and annual) financial reporting quality. According to President George W. Bush, these SOX provisions were intended to hold a CEO to his word: "...the signature of the CEO should also be his or her personal certification of the veracity and fairness of the financial disclosures. When you sign a statement, you're pledging your word, and you should stand behind it" (President Bush's Speech from Wall Street 2002).

However, it may be true that the personal certification requirement is no more than symbolic, as the provisions of SOX do not change the existing law related to officer liability for a company's financial statements. Even before SOX, antifraud law and the rules governing the disclosure of documents to the SEC placed responsibility on corporate managers and directors

¹ Adelphia, Enron, Global Crossing, Tyco, Waste Management, WorldCom, and others.

² The scope of this certification surpasses the assertions previously made in the management letter provided to the auditor.

for both the accuracy and the completeness of financial statement disclosure, and stated the penalty for the failure to disclose (Alverson 2005; Cunningham 2002; Fairfax 2002). Therefore, whether SOX Sections 302 and 906 actually affect a company's quarterly financial reporting quality is an empirical question, which I address in this paper.

In addition to determining quarterly financial reporting quality following the implementation of SOX Sections 302 and 906, I propose that, because these sections directly affect only the cost-benefit function of management (not the auditors), these provisions offer researchers a unique environment to try to disentangle the “joint measure of financial reporting quality” that is present in so much of our literature. In most research designs it is not possible to disentangle the separate effects of management and auditors on reporting quality and, as a result, most studies can only evaluate financial reporting quality as a joint measure of the quality of management reporting and the quality of the auditor. Because SOX 302 and 906 directly change only the consequences (liabilities) to managers, these provisions, in the quarterly reporting environment, should allow us to try to separate these effects. These provisions do not directly change the auditor's role in the quarterly financial reporting process; both before and after the implementation of these provisions, auditors are responsible for reviewing (not auditing) the quarterly financial statements on a contemporaneous basis.

Existing literature indicates that investors value quarterly earnings numbers and that managers appear to use earnings management techniques to avoid negative earnings surprises. This paper adds to that literature by providing evidence of the effect of SOX Sections 302 and 906 on quarterly earnings management, and, therefore, on quarterly financial reporting quality. Specifically, this paper measures quarterly financial reporting quality by calculating abnormal

accruals using the performance-adjusted Modified Jones model (Dechow et al. 1995; Kothari et al. 2005) including the Ball and Shivakumar (2006) nonlinear specification. In this model, accruals quality is measured by the extent to which accruals are captured by fitted values obtained by regressing total accruals on changes in revenues, fixed assets, cash flows from operations, a binary variable indicating if cash flow from operations is negative, and an interaction term of the last two variables. In addition to evaluating the change in total abnormal accruals following the implementation of SOX 302 and 906, I separately examine firms with positive (income increasing) and negative (income decreasing) abnormal accruals in the pre-SOX period and firms with relatively high (aggressive) and relatively low abnormal accruals in the pre-SOX period. Because SOX focuses on financial reporting quality, the regulation does not differentiate between the various motivations for firms to engage in abnormal accruals, however, it is an empirical question as to whether SOX has a differential effect on positive or negative accruals or on firms that had relatively higher or relatively lower abnormal accruals pre-SOX.

The quarterly reporting environment is an ideal setting to look at managements' actions for two primary reasons. First, previous research indicates that quarterly financial statements are subject to more management judgment than are annual financial statements because Generally Accepted Accounting Principles (GAAP) allows some discretion in the quarterly timing of recording certain adjustments.³ Second, quarterly financial statements are reviewed but not

³ While quarterly revenues are recognized on the same basis as annual fiscal periods, APB 28 allows certain costs, that must be expensed during the year, to be deferred or accrued at the end of an interim quarter based on managements' expectations about the results for the entire fiscal year. For example, certain expenses (management

audited by the external auditor, potentially allowing more management discretion (Mendenhall and Nichols 1988). I anticipate that Sections 302 and 906 will increase the quality of reported quarterly earnings both by providing an incentive to managers to improve their estimation process and by curbing deliberate earnings management.

The results of my tests indicate that quarterly financial reporting quality improves in the post-SOX period for the 40% of firms in my sample that exhibited the most aggressive earnings management in the pre-SOX period. These results are consistent for the full sample of aggressive earnings management firms in all four quarters and for the subsample of firms with aggressive negative abnormal accruals in the pre-SOX period. For the subsample of firms with aggressive positive abnormal accruals in the pre-SOX period, the results are consistent for quarters 1, 2, and 4; there was no difference in abnormal accruals for these firms in quarter 3. Interestingly, quarterly financial reporting quality declines in the post-SOX period for the 60% of firms in my sample that demonstrated low earnings management in the pre-SOX period. These results are consistent for the full sample of low earnings management firms in all four quarters and for each of the subsamples of firms with both positive and negative abnormal accruals in the pre-SOX period.

The conflicting results for aggressive earnings management and low earnings management firms indicate that SOX 302 and 906 have a differential effect on firms based on their pre-SOX earnings management levels. While SOX does not specifically target aggressive earnings management firms, it is intuitive that the regulation curtailed the earnings management

bonuses, warranty costs, advertising costs) may be recorded to expense in interim quarters based on forecasted annual sales and adjusted to actual sales at year end (Mendenhall and Nichols 1988).

behavior of these firms to a greater degree. It is more surprising, perhaps, that firms who exhibited low earnings management behavior pre-SOX would have increased their earnings management behavior in the post-SOX period.

This study makes several contributions to the literature. First, the goal of Sections 302 and 906 is to improve both quarterly and annual financial reporting and this study provides evidence that quarterly financial reporting improves for aggressive earnings management firms after the implementation of these provisions. Second, because SOX 302 and 906 primarily affect managements' incentives to improve quarterly financial reporting quality, and financial reporting quality improves for aggressive earnings management firms in interim quarters as well as the fourth quarter, this study provides some evidence that management has improved financial reporting quality separate from the effect of the auditor on the financial statements. Third, in an environment that continues to debate the implementation of SOX Section 404 for non-accelerated filers, this study provides evidence of improved financial reporting quality for non-accelerated filers following the implementation of Sections 302 and 906. Specifically, my results indicate that aggressive earnings management for non-accelerated filers decreased in all four quarters while aggressive earnings management for accelerated filers only decreased in quarters 3 and 4. Fourth, because my results indicate improved financial reporting quality for aggressive earnings management firms, this study provides some indication of an association between increased individual criminal liability and changes in managers' behaviors when faced with relatively higher potential personal cost versus relatively lower potential personal cost while holding the gain function essentially constant. The results of this study should be interesting to

policy setters and regulators (SEC and PCAOB), auditors, investors, academic researchers, and managers.

The remainder of this paper is organized as follows: Section II describes the background of SOX, the importance of quarterly reporting, and the measurement of financial reporting quality and then develops the research hypotheses tested in this study. Section III discusses research design including sample selection, model selection and variable definition. Section IV presents and discusses the results. Section V defines additional analyses and the related results. Section VI concludes with a brief summary of the results, implications and limitations of this study.

II. Background and Hypotheses

As a response to the extensive corporate frauds of the late 1990's and early 2000's, and in light of the growing participation of millions of Americans in the capital markets, Congress signed into law the Sarbanes-Oxley Act of 2002 on July 30, 2002. SOX was intended to reinforce corporate accountability and to restore investor confidence in corporate financial reporting. In his July 9, 2002 speech on Wall Street, President George W. Bush stated that he was "calling for a new ethic of personal responsibility in the business community, an ethic that will increase investor confidence" (President Bush's Speech from Wall Street 2002).

Selected Sarbanes-Oxley Act Provisions

SOX instituted many corporate reporting, corporate governance and auditor-related changes including Sections 302, 906 and 404. Section 302 of SOX became effective for all SEC registrants for fiscal years ending after August 29, 2002. Section 302 requires corporate executives (CEO and CFO) to certify in each annual or quarterly report filed with the SEC that:

1. the executive has reviewed the report filed;
2. based on the executive's knowledge, the report does not contain any untrue or misleading fact, nor does it omit any material fact necessary to make the filing not misleading;
3. based on the executive's knowledge, the financial statements and other financial information included in the filed report fairly present, in all material respects, the financial condition and results of operations for the relevant periods;
4. the signing executives are responsible for establishing and maintaining internal controls, have designed the internal controls to ensure that material information is

- made known to the executives, have evaluated the effectiveness of the internal controls as of a date within 90 days prior to the report date, and have presented in the report their conclusions about the effectiveness of their internal controls based on their evaluation as of that date;
5. the signing executives (a) have disclosed to the auditors and the audit committee all significant deficiencies in the design or operation of internal controls which could adversely affect the company's ability to record, process, summarize and report financial data, (b) have identified any material weaknesses in internal controls for the external auditors, and (c) have identified any fraud, whether material or not, that involves management or other employees who have a significant role in the internal control process;
 6. the signing executives have indicated in the report whether or not there have been any significant changes in internal control subsequent to the report date, including any corrective actions relative to significant deficiencies and material weaknesses.

An example of the CEO and CFO certifications under SOX Section 302 are included in Appendix 1.⁴

Some legal professionals have stated that the provisions of SOX have “altered significantly the prosecutorial landscape on which the Justice Department and agency investigations will play out ”(Clayton and Mackintosh 2002). Specifically, Section 302 targets the preferred defense of “who me?” offered by individual senior managers during a corporate fraud investigation. Using this defense, the senior manager usually demonstrated that he had no

⁴ The public filings and Section 302 certifications for all public companies are available at www.sec.gov.

knowledge of the problem and would have remedied the problem if he had known and, the defense went, because the problem was a corporate issue not an individual issue, the senior manager should not be charged. Section 302 now requires by law that senior managers maintain a system of internal controls designed to ensure that material information concerning corporate activities are made known to them. Additionally, the senior management of a company is responsible for validating that the system of internal controls is functional. Fairfax (2002) states that the 302 certification requirement is not nominal, but rather subjects a senior manager, who signs the certification knowing that it contains material inaccuracies, to both civil and criminal liability.

Recently several accounting studies have looked at the impact of Section 302 on financial reporting. In June 2004, McEnroe (2007) surveyed CFOs of the Fortune 500 firms and 500 audit partners from the 33 largest audit firms by revenue and determined that the respondents perceived that SOX reduced earnings management only a little more than 25% of the time. McEnroe hypothesized that Section 302 would result in improved financial reporting quality because managers could no longer use GAAP as a safe harbor defense against charges of creative accounting;⁵ however, his results indicate that CFOs and audit partners did not perceive an overall decrease in earnings management.

A few studies examine companies disclosing material weaknesses under Section 302. Ge and Mc Vay (2005) provide a descriptive analysis of firms reporting at least one Section 302 material weakness. They find that poor internal control is usually associated with insufficient

⁵ SOX Section 302(a) explicitly states that fair presentation of the financial statements is not limited to the assertion of compliance with GAAP. Previous audit report language indicated that the financial statements were fairly stated when in compliance with GAAP.

resources allocated to accounting controls. They also find that material weaknesses in internal controls are usually related to deficient revenue recognition policies, inadequate segregation of duties, deficiencies in the end-of-period reporting process, deficiencies in accounting policies and inadequate account reconciliations.

Doyle et al. (2007) examine the relation between accruals quality and internal controls for firms disclosing a material weakness under either Section 302 or Section 404 from August 2002 to November 2005. These authors determine that internal control weaknesses are generally associated with poorly estimated accruals that are not realized as cash flows.⁶ Interestingly, they also find that material weakness disclosures made under Section 302 seem to be more strongly associated with lower accruals quality than are those made under Section 404. They suggest that these findings are due to the increased level of scrutiny provided by Section 404; Section 404 requires that the external auditor provide an audit opinion on the internal control environment. This would suggest two things relevant to my study. First, the role of the auditor may have a significant impact on a company's accrual quality; this study examines the role of management (separate, as much as possible, from the role of the auditor) in improving financial reporting quality when there are new incentives for them to do so. Second, as Section 404 has yet to be implemented by non-accelerated filers, the results of my study may inform the debate over whether Section 404 might improve financial reporting quality beyond the provisions of SOX that are already in effect for non-accelerated filers.

Similar to Doyle et al. (2007), Bédard (2006) examines the association between companies disclosing a material weakness under either Section 302 or Section 404 and

⁶ These authors estimate accruals for the five years leading up to the passage of SOX (1996 – 2002).

unexpected accruals in the year of the material weakness disclosure.⁷ Bédard finds that the absolute level of unexpected accruals increases in the year a material weakness is disclosed. This author attributes these results to managements' reversal of earlier accruals that were too large, either voluntarily or at the auditor's request, indicating improved earnings quality. Together these studies would indicate that for companies disclosing a material weakness under either Section 302 or 404, generally accruals were poorly estimated during the period preceding the material weakness disclosure and accruals quality improved in the year of disclosure.⁸

Lobo and Zhou (2006) examine both earnings management and conservatism for the two years prior to SOX and the two years following SOX. These authors find that, similar to the studies above, firms are more conservative according to both measures post-SOX than they were pre-SOX.

Cohen et al.(2008) examine whether the time period leading up to the passage of SOX was characterized by a widespread increase in earnings management, or if SOX was precipitated primarily by a few highly publicized events, and whether the passage of SOX resulted in lower earnings management. These authors examine annual accrual-based earnings management as well as "real" earnings management⁹ during three time periods (pre-SOX, pre-fraud 1987 – 1999; pre-SOX scandal period 2000 – 2001; and post-SOX 2002 – 2005), focusing on changes and levels of equity based compensation for executives as the motivation for earnings management. Overall, their results indicate that annual accrual-based earnings management

⁷ This author examines material weakness disclosures from September 2002 to September 2005.

⁸ The disclosure of material weaknesses does not affect my study as only eight companies in my sample disclosed material weaknesses in 2003.

⁹ These authors estimate management's use of real operational activities to manage earnings.

increased steadily until the passage of SOX in 2002, after which there was a significant decline. Conversely, “real” earnings management activities declined prior to the passage of SOX, and subsequently increased. Combined, these results indicate that managers switched from accrual-based to “real” earnings management as a consequence of SOX. Lastly, Cohen et al. (2008) provide evidence that increases in accrual-based earnings management pre-SOX are associated with increases in the fraction of equity based compensation received by executives.

By using annual earnings management measures, each of the above studies examines “joint measures” of financial reporting quality. There are two significant differences between these studies and my study. First, I examine quarterly versus annual financial reporting quality. Second, by using the quarterly reporting environment following the implementation of Sections 302 and 906, my study offers some opportunity to disentangle managements’ effect on financial reporting quality from the auditor’s effect on financial reporting quality.

Section 906 requires that each periodic financial report containing financial statements filed with the SEC include a written statement by the CEO and CFO certifying that the report fully complies with the regulations of the Securities Exchange Act of 1934 and that the information in the report fairly presents, in all material respects, the financial condition and results of operations of the filer.¹⁰ An example of the CEO certification under SOX Section 906 is included in Appendix 1, Exhibit 3 (CFO certifications are very similar).¹¹

Section 906 also imposes severe criminal penalties for CEOs and CFOs who knowingly or willfully provide false certifications of periodic financial reports. Executives, who knowingly

¹⁰ This sounds similar to the provisions of Section 302, however Section 906 additionally requires CEOs and CFOs to certify that the report “fully complies” with the requirements of the Securities Exchange Act.

¹¹ The public filings and Section 906 certifications for all public companies are available at www.sec.gov.

certify a filing that does not meet all of the requirements of this section, can be fined not more than \$1,000,000, or be imprisoned not more than 10 years, or both. Additionally, anyone who *willfully* certifies a statement as noted above, knowing that the filing does not meet all of the requirements of this section, can be fined not more than \$5,000,000, or be imprisoned not more than 20 years, or both.

To date, Section 906 has not been the subject of much accounting research. Levinsohn (2003) cites a June 2003 survey by the Association for Financial Professionals¹² regarding the prevalence of a “subcertification” affidavit among corporate managers.¹³ Among the 555 members and non-members who responded to the survey, 37% of those professionals who work for public companies were asked to sign an affidavit certifying the accuracy of the financial information they provided. Nearly all of those who were asked to sign, did sign. The survey also found that financial professionals providing “subcertification” did so for a median of three items in their company’s financial reports. Specifically, of those who work for a public company and provided “subcertification”, 63% certified disclosures in Management Discussion and Analysis, 60% certified specific account balances, 60% certified compliance with company policies, and 58% certified the adequacy of internal controls. The frequency and scope of “subcertifications” would seem to indicate that CEOs and CFOs considered the penalties identified in Section 906 to be concerning.

¹² <http://www.afponline.org>

¹³ Levinsohn suggests that CEOs and CFOs require “subcertification” because they typically do not personally prepare the financial information included in the 10-Ks and 10-Qs.

Section 404 of SOX became effective for accelerated filers for fiscal years ending after November 15, 2004.¹⁴ Section 404 requires that each *annual* report (1) contain an internal control report which states the responsibility of management for establishing and maintaining an adequate internal control system and related procedures for financial reporting; (2) contain an assessment by management of the effectiveness of the internal control structure and procedures at the end of the most recent fiscal year; and (3) contain a statement that the audit firm issuing the audit report attests to, and reports on, the assessment of internal controls made by management.

This study is interested only in the effect of Section 302 certifications and the Section 906 penalties on quarterly financial reporting quality, as it is within this environment that I can offer some contribution regarding the actions and motivations of management separate from the actions and motivations of the auditor. The Section 404 certifications require both managements' certification and an auditor's opinion resulting in financial statements that provide a joint measure of financial reporting quality. In order to isolate the effects of Sections 302 and 906 from those of Section 404, I compare the quarterly financial reporting quality for 2001 and 2003.¹⁵

Importance of Quarterly Reporting

Existing literature indicates that quarterly earnings numbers are valuable to investors. Beaver (1998) developed three theoretical links between earnings and share prices: current

¹⁴ Accelerated filers are defined by SEC rule 13b-2 and generally refer to public companies with market capitalization of at least \$75 million. The effective date was extended 45 days for accelerated filers with a market capitalization of less than \$700 million as of November 2004 (Federal Register 2004).

¹⁵ Section 302 and 906 became effective in 2002 and Section 404 became effective in late 2004, so this research design allows me to isolate the effects of Sections 302 and 906 from the effects of Section 404.

earnings provide information to predict future earnings, future earnings provide information about future dividends, and future dividends provide information to determine share value. Extensive literature has shown that negative earnings surprises often have severe adverse valuation consequences (Brown and Caylor 2005; Dechow et al. 2003; Skinner and Sloan 2002) and that executives appear to use earnings management techniques in order to avoid negative earnings surprises (Barton and Simko 2002; Bartov et al. 2002; Burgstahler and Eames 2006; Matsumoto 2002).

Management can influence interim quarter earnings for two primary reasons: first the accounting rules allow for more management judgment when reporting earnings for interim quarters and second, auditors review, but do not audit, interim period results. The Accounting Principles Board Opinion No. 28 - Interim Financial Reporting (APB 28) contains GAAP for interim financial statements (*Accounting Principles Board Opinion No. 28: Interim Financial Reporting* 1973). Specifically, APB 28 states that the accounting profession adopted an integral approach for interim financial reporting (as opposed to a discrete approach)¹⁶. Under an integral approach, the fiscal year is the primary reporting period and interim reports are integral parts of the annual reporting period. Under this approach, interim revenues are recognized on the same basis as for the entire fiscal year, while certain costs that must be expensed during the fiscal year may be accrued or deferred at the end of an interim period based on managers' expectations for the remainder of the year. APB 28 requires that interim reports contain reasonable estimates of costs or expenses based on all available information applied consistently across periods.

¹⁶ Under the discrete approach each interim period is viewed as a separate accounting period and the same expense recognition principles would be applied to interim and annual reports. The discrete methodology would not allow for special interim accruals or deferrals.

However, period costs that benefit more than one interim period may be expensed as incurred or allocated between interim periods based on several methods.¹⁷ The use of managers' expectations to form cost estimates in an interim period can provide managers with greater influence over quarterly earnings than over fourth quarter earnings.

The fact that quarterly earnings are reviewed but not audited, also allows more management discretion over quarterly results. Statement on Auditing Standards No. 100: Interim Financial Information (SAS 100) provides guidance to auditors of public companies regarding the review of interim financial information (*Statement on Auditing Standards No. 100: Interim Financial Information* 2002). SAS 100 states that a review of interim financial information is significantly different from an audit of financial information because a review consists primarily of inquiry and analytical procedures while an audit includes substantive audit tests and the collection of corroborative evidence. An example of an auditor's report for a review of a quarterly filing is included in Appendix 1, Exhibit 4.¹⁸ The limited scope of the auditor's involvement in the quarterly financial reporting process potentially allows management more discretion and provides a unique environment for this research project to separate the joint measure of financial reporting quality.

Measuring Quarterly Financial Reporting Quality

In this study, I investigate whether Sections 302 and 906 provisions result in changes to managers' behaviors, resulting in improved quarterly financial reporting quality as proxied by earnings management. In recent years, the SEC has made a connection between earnings

¹⁷ For example: estimate of time period expired, benefit received, expected sales, expected volumes, etc.

¹⁸ The public filings and auditor reports for all public companies are available at www.sec.gov.

management and restatements or improper accounting (Public Accounting Report 1998). Additionally, in a 1998 speech, then SEC Chairman Levitt made a direct connection between earnings management, earnings quality and the quality of financial reporting (Chairman Levitt Speech 1998). Previous research has used accruals quality as a proxy for earnings management and financial reporting quality and this paper will do the same.

Management accruals can be of poor quality for two basic reasons. First, management could intentionally bias accruals in order to manage earnings to a desirable level. Second, accruals can contain unintentional management errors in accrual estimation caused by either a difficulty in the estimation of an event or because there are errors in the estimation that the internal control environment does not detect (Doyle et al. 2007).

Previous research indicates that managers use discretionary accruals to intentionally manage earnings to their benefit. In these studies, managers are presumed to have evaluated their cost-benefit function and decide to intentionally manage earnings. Sections 302 and 906 increase the cost side of this function, while the benefit side of the equation remains constant, potentially resulting in reduced intentional earnings management.

Several research papers have separately examined aggressive earnings management firms and low earnings management firms in their research design (Bédard et al. 2004; Johl et al. 2007; Koh 2007). The results for these papers indicate that firms that exhibit aggressive earnings management are differentially associated with firm level corporate governance characteristics, institutional investor type and audit opinions. It seems reasonable that SOX 302 and 906 could differentially affect managers' behaviors based on whether a firm exhibits aggressive earnings management or low earnings management in the pre-SOX period.

I test the relation between Sections 302 and 906 and quarterly financial reporting quality as measured by a reduction in quarterly earnings management between the “same-quarter” periods before and after the implementation of these Sections. I limit my study to companies with December 31st year-ends in order to eliminate the confounding effects of different year-end dates and different seasonality within industries.¹⁹ The four calendar quarters of 2001 are defined as the pre-SOX Sections 302 and 906 period and the four calendar quarters of 2003 as the post-SOX Sections 302 and 906 period. For example, this study will compare abnormal accruals for Q1 (Q2, Q3, Q4) of 2001 with abnormal accruals for Q1 (Q2, Q3, Q4) of 2003.

I expect that if Sections 302 and 906 are effective in modifying corporate managers’ behavior, quarterly abnormal accruals post-SOX Sections 302 and 906 (2003) will be lower than the corresponding quarterly abnormal accruals pre-SOX Sections 302 and 906 (2001). This leads to my first hypothesis (expressed in alternate form):

H1a: There will be a decline in the absolute value of performance –adjusted abnormal accruals for each of the four quarters post-SOX Sections 302 and 906 (2003) as compared to the respective same-quarter pre-SOX Sections 302 and 906 (2001) (i.e., company abnormal accruals will become closer to zero).

One of the goals of SOX is to improve overall financial reporting quality, and for this reason, I also expect that, in addition to an overall decrease in abnormal accruals, after the implementation of these provisions, there will also be a decrease for each of the two subsets of companies: those that had positive (income increasing) abnormal accruals and those that had negative (income decreasing) abnormal accruals in the pre-SOX Sections 302 and 906 period as

¹⁹ For example Q2 will not be comparable between a retailer with a 12/31 year end and a retailer with a 6/30 year end.

compared to the post-SOX Sections 302 and 906 period. This leads to my second and third hypotheses (expressed in alternate form):

H2a: For companies with positive abnormal accruals (performance-adjusted) pre-SOX Sections 302 and 906, there will be a decline in the value of abnormal accruals for each of the four quarters post-SOX Sections 302 and 906 (2003) as compared to the respective same-quarter pre-SOX Sections 302 and 906 (2001) (i.e., company abnormal accruals will become closer to zero).

H3a: For companies with negative abnormal accruals (performance-adjusted) pre-SOX Sections 302 and 906, there will be a decline in the value of abnormal accruals for each of the four quarters post-SOX Sections 302 and 906 (2003) as compared to the respective same-quarter pre-SOX Sections 302 and 906 (2001) (i.e., company abnormal accruals will become closer to zero).

While the provisions of SOX 302 and 906 do not specifically address levels of financial reporting quality, it is likely that management would respond to these provisions differently based on whether the firm had relatively aggressive earnings management pre-SOX as compared to a firm with relatively low earnings management pre-SOX. I hypothesize that the additional responsibilities and legal penalties associated with these Sections will motivate management of firms that had more aggressive earnings management pre-SOX to reduce earnings management. However, it is an empirical question as to whether these provisions differentially affect firms with different levels of earnings management pre-SOX. This leads to my fourth hypothesis (expressed in alternate form):

H4a: For firms with aggressive earnings management pre-SOX, there will be a decline in the absolute value of performance –adjusted abnormal accruals for each of the four quarters post-SOX Sections 302 and 906 (2003) as compared to the respective same-quarter pre-SOX Sections 302 and 906 (2001) (i.e., company abnormal accruals will become closer to zero).

Similar to the argument above, for companies with aggressive earnings management pre-SOX, I also expect a decrease for each of the two subsets of companies: those that had positive (income increasing) abnormal accruals and those that had negative (income decreasing) abnormal accruals in the pre-SOX period as compared to the post-SOX period. This leads to my fifth and sixth hypotheses (expressed in alternate form):

H5a: For firms with aggressive earnings management and positive abnormal accruals (performance-adjusted) pre-SOX Sections 302 and 906, there will be a decline in the value of abnormal accruals for each of the four quarters post-SOX Sections 302 and 906 (2003) as compared to the respective same-quarter pre-SOX Sections 302 and 906 (2001) (i.e., company abnormal accruals will become closer to zero).

H6a: For firms with aggressive earnings management and negative abnormal accruals (performance-adjusted) pre-SOX Sections 302 and 906, there will be a decline in the value of abnormal accruals for each of the four quarters post-SOX Sections 302 and 906 (2003) as compared to the respective same-quarter pre-SOX Sections 302 and 906 (2001) (i.e., company abnormal accruals will become closer to zero).

For all of my samples, I expect the interim quarter results (Q1, Q2 and Q3) to indicate the change in reporting quality due primarily to the managers' effect on financial reporting quality because, as stated previously, the auditor's role in quarterly financial reporting did not directly change during the test period. However, I expect the Q4 results to indicate the change in reporting quality due to both the managers' effect and the auditor's effect on financial reporting quality as both parties play a part in the reporting quality for the fourth quarter results. The comparison of the interim quarter results and the fourth quarter results should provide information about the relative change in reporting quality attributable to both managers and auditors in the time period surrounding the implementation of SOX.

III. Research Design

Data

The provisions of SOX that I am interested in testing apply to all U.S. publicly traded companies with December 31st year ends and available data on Compustat quarterly industrial files in order to calculate discretionary accruals for the four quarters of 2001 and the four quarters of 2003.²⁰ This restriction likely introduces survivorship bias into the sample resulting in the inclusion of a higher number of larger and more stable companies. I expect that this bias would cause me to be less likely to find results, thereby creating a more conservative test of my research question.

Consistent with DeFond and Park (2001), I calculate accruals using all firms on Compustat with the same two-digit SIC code, where each SIC group has at least 20 observations and at least five firms with negative operating cash flow. Consistent with Ball and Shivakumar (2006), I eliminate influential observations by winsorizing the extreme 0.5% of the observations for each variable for each quarter.²¹ Consistent with Matsumoto (2002), I exclude financial and insurance institutions (SIC codes 6,000 – 6,499), utility companies (SIC codes 4,800 – 4,999) and other quasi-regulated industries (SIC codes 4,000 – 4,499, and 8,000 and higher). Consistent with Hribar and Collins (2002), I use accruals and cash flows data from the Statement of Cash Flows rather than estimating the variables indirectly from balance sheet data.

²⁰ I will exclude ADRs from this analysis to focus on U.S. companies.

²¹ This will winsorize observations in the 0.5% and 99.5% tails.

Selection of Earnings Management Model

Researchers have used many different models to estimate earnings management using abnormal accruals. Dechow et al. (1995) evaluate several different earnings management models in order to determine which model is the most effective at differentiating “abnormal” accruals from “normal” accruals. Their results indicate that the Modified Jones Model is best at identifying abnormal accruals; this model is the original Jones (1991) model as modified by Dechow et al. (1995). The Modified Jones Model assumes that the change in revenue less the change in accounts receivable is free from managerial discretion; only credit sales are discretionary.²²

More recently, Ball and Shivakumar (2006) evaluate the usefulness of nonlinear models in estimating abnormal accruals. Their results indicate that conventional linear models of abnormal accruals are poorly specified, suffer from attenuation bias, and explain substantially less of the variation in accruals as compared to models that include a nonlinear specification. Overall, their results show that for the industry-specific regressions using the Jones Model, the addition of the nonlinear term increases the R^2 from 12% to approximately 30%, a 150% increase.²³

Kothari et al. (2005) evaluate the ability of performance-matching to improve the specification and power of the existing discretionary accrual models. Their results indicate that discretionary accruals estimated using the Jones or Modified Jones Models, and adjusted for performance-matching on ROA_t , tend to be the best specified measures of discretionary accruals

²² The original Jones model did not include the change in accounts receivable term.

²³ A few recent research papers also use this non-linear specification of the Modified Jones model (Ashbaugh-Skaife et al. 2008; Daniel et al. 2008).

across a wide variety of simulated event conditions. The authors do admit that performance-matching may not be best in all settings. Specifically, they conclude that a performance-matched discretionary accrual measure is useful in mitigating type 1 error when the partitioning variable in the study is correlated with performance.

Recently, Hribar and Nichols (2007) examine the implications of using the absolute value of discretionary accruals when testing for earnings management. Their results indicate that, when using the absolute-value of abnormal accruals as a measure of earnings management, lack of fit can bias tests in favor of rejecting the null hypothesis of no earnings management when the partitioning variable is correlated with firm characteristics such as size and volatility. These authors suggest that controlling for operating volatility and size variables in the second stage of the discretionary accrual modeling will minimize the possibility of falsely rejecting the null hypothesis of no earnings management²⁴. The lack of fit these authors describe should not affect my study for two reasons. First, my partitioning variable (SOX) should not be correlated with operating volatility or size. Second, I examine not only the decline in the absolute-value of abnormal accruals (Hypothesis 1 and 4) but I also separately examine whether abnormal accruals decline (approach zero) for companies with positive abnormal accruals and companies with negative abnormal accruals (Hypotheses 2, 3, 5 and 6).

Based on the above literature, I evaluate quarterly financial reporting quality measuring the absolute value of performance-adjusted abnormal accruals (and separately measuring positive

²⁴ Hribar and Nichols include the five-year standard deviation of CFO, the five-year standard deviation of revenues, the log of total assets and CFO as control variables in their tests.

and negative abnormal accruals) using the Ball and Shivakumar nonlinear specification of the Modified Jones model.

To calculate the absolute value of performance-adjusted abnormal accruals using this model, I first estimate the expected (non-discretionary) accruals for each firm i in industry j for quarter t using ordinary least squares regression.

$$\begin{aligned} \frac{TAcc_{ijt}}{LagTA_{ijt}} = & \alpha_{jt} + \beta_{1jt} \frac{1}{LagTA_{ijt}} + \beta_{2jt} \frac{(\Delta Sales_{ijt} - \Delta AR_{ijt})}{LagTA_{ijt}} + \beta_{3jt} \frac{PPE_{ijt}}{LagTA_{ijt}} \\ & + \beta_{4jt} \frac{CFO_{ijt}}{LagTA_{ijt}} + \beta_{5jt} DCFO_{ijt} + \beta_{6jt} \frac{CFO_{ijt} * DCFO_{ijt}}{LagTA_{ijt}} + \varepsilon_{ijt} \end{aligned} \quad (1)$$

where:

- $TAcc_{ijt}$ = total accruals for firm i in industry j in quarter t ;
- $\Delta Sales_{ijt}$ = the quarterly change in net sales [change in Compustat item #2] for firm i in industry j in quarter t (versus quarter $t-1$);
- ΔAR_{ijt} = the quarterly change in accounts receivable [Compustat item #103] for firm i in industry j in quarter t (versus quarter $t-1$);
- PPE_{ijt} = gross property, plant and equipment [Compustat item #118] for firm i in industry j in quarter t ;
- CFO_{ijt} = quarterly cash flow from operations from the Statement of Cash Flows (Compustat item # 108) for firm i in industry j in quarter t ;
- $DCFO_{ijt}$ = a binary variable which is 1 if operating cash flow is less than zero for firm i in industry j in quarter t ;
- $LagTA_{ijt}$ = beginning of the quarter total assets (Compustat item # 44) for firm i in industry j in quarter $t-1$.

Consistent with previous research, total accruals is calculated as earnings from continuing operations minus cash flow from continuing operations [Compustat item #76 – (Compustat item #108- Compustat item # 78)] (Bradshaw et al. 2001; Healy 1985; Healy and Palepu 2001; Phillips et al. 2003). The changes in sales and accounts receivable, and the fixed assets balance

are used to control for the expected portion of total accruals. I also control for cash flow from operations and the nonlinear specification identified by Ball and Shivakumar (2006).²⁵

When estimating the “normal” accruals, some researchers include an intercept term and some do not. Similar to Kothari et al. (2005), I include an intercept term in the estimation to provide an additional control for heteroskedasticity which is not entirely eliminated by using lagged total assets as a deflator, and it also mitigates problems from omitting a size (or other scale) variable.

Next, I use the industry-quarter-specific parameters from equation (1) above to estimate firm-quarter-specific abnormal accruals (AAC) (all of the variables are already defined above):

$$\begin{aligned}
 AAC_{ijt} = & \frac{TAcc_{ijt}}{LagTA_{ijt}} - (\hat{\alpha}_{jt} + \hat{\beta}_1 jt \frac{1}{LagTA_{ijt}} + \hat{\beta}_2 jt \frac{(\Delta Sales_{ijt} - \Delta AR_{ijt})}{LagTA_{ijt}} + \hat{\beta}_{3jt} \frac{PPE_{ijt}}{LagTA_{ijt}} \\
 & + \hat{\beta}_{4jt} \frac{CFO_{ijt}}{LagTA_{ijt}} + \hat{\beta}_{5jt} DCFO_{ijt} + \hat{\beta}_{6jt} \frac{CFO_{ijt} * DCFO_{ijt}}{LagTA_{ijt}}) \quad (2)
 \end{aligned}$$

Next, as explained by Kothari et al. (2005), I rank each firm into industry group deciles based on their prior year’s return on assets (ROA). Within each industry group, I then calculate the median abnormal accruals. Last, I calculate performance-adjusted abnormal accruals (PAAC) by taking the difference between the sample firm’s abnormal accruals and the median abnormal accruals for the industry group. (The median ROA value excludes the specific sample firm.)

²⁵ Consistent with the intent of the Modified Jones model, I do not scale the intercept by average total assets (Ball and Shivakumar 2006).

Empirical Model

I use the following regression to test the relation between quarterly abnormal accruals and Sections 302 and 906:

$$ABSPAAC_{it} = \alpha_0 + \beta_1 SOX_{it} + \beta_2 Size_{it} + \beta_3 BIGN_{it} + \beta_4 CFO_{it} + \beta_5 Distress_{it} + \beta_6 MTB_{it} + \beta_7 Leverage_{it} + \varepsilon$$

where:

$ABSPAAC_{it}$	=	absolute value of performance-adjusted discretionary accruals calculated using the Ball and Shivakumar (2006) piecewise adjustment to the Modified Jones Model (PAAC) for firm i in quarter t ;
SOX_{it}	=	1 if the quarterly financial statement is for a quarter in 2003, 0 otherwise;
$Size_{it}$	=	natural log of the market value of equity for firm i at the end of the quarter $(t-1)$ [Compustat item #13 (price) * Compustat item # 61 (common stock outstanding)]; ²⁶
$BIGN_{it}$	=	1 if firm i is audited by a Big N firm in quarter t , 0 otherwise; ²⁷
CFO_{it}	=	firm i 's quarterly cash flow from operations from the Statement of Cash Flows in quarter t (Compustat item # 108) scaled by beginning of the quarter total assets (Compustat item # 44 in quarter $t-1$);
$Distress_{it}$	=	Zmijewski's (1984) financial condition index for firm i in quarter t ;
MTB_{it}	=	market value of firm i divided by the book value of assets measured at the beginning of the quarter t ; ²⁸
$Leverage_{it}$	=	total debt [Compustat item # 45 (short term debt) + Compustat item # 51 (long term debt)] divided by total assets (Compustat item # 44) for firm i in quarter t .

Consistent with prior studies (Ashbaugh-Skaife et al. 2008; Klein 2002), I use the absolute value of performance-adjusted abnormal accruals as my dependent variable, as I am

²⁶ I also modeled the size variable with the natural log of total assets with (untabulated) similar results with two exceptions: (1) for the aggressive earnings management sample in the quarter 3, positive abnormal accruals subsample the test variable (SOX) was significant at the 10% level (one-tailed); and (2) for the aggressive earnings management sample in the quarter 2, positive abnormal accruals subsample the test variable (SOX) was significant at the 5% level (one-tailed).

²⁷ I exclude from my sample firms that were audited by Andersen pre-SOX and firms that changed auditor during the test period as previous research has indicated that these variables are significant in abnormal accruals modeling.

²⁸ I also modeled growth as quarter over quarter sales growth with (untabulated) similar results.

primarily interested in determining whether abnormal accruals are moving closer to zero.²⁹ For this same reason, I separately examine the change in abnormal accruals for companies with positive (negative) abnormal accruals in the pre-Section 302 and 906 timeframe. I expect that the absolute value of abnormal accruals will decline following the implementation of Sections 302 and 906, therefore, I expect a negative relation between ABSPAAC and my test variable (SOX).

Control Variables

I control for factors that previous research has indicated are significant in determining the magnitude of abnormal accruals. Specifically, I control for certain company characteristics: size, Big N auditor, operating cash flow, financial distress, growth (proxied using the market-to-book ratio), and leverage. Based on previous research, I expect a negative relation between abnormal accruals and size (Ashbaugh-Skaife et al. 2008; Bédard 2006; Klein 2002), Big N auditor (Ashbaugh-Skaife et al. 2008; Becker et al. 1998; DeAngelo 1981; Francis et al. 1999; Ge and McVay 2005), operating cash flow (Bédard 2006; Ge and McVay 2005; Reynolds and Francis 2000), and leverage (Francis et al. 2005; Klein 2002; Reynolds and Francis 2000) and a positive relation between abnormal accruals and financial distress (Ashbaugh-Skaife et al. 2008; Reynolds and Francis 2000) and growth (market-to-book)³⁰ (Francis et al. 2005; Klein 2002).

For the extreme earnings management models, I identified the 20% of the sample firms with the highest positive performance-adjusted abnormal accruals (calculated as detailed above)

²⁹ For my study, quarterly financial reporting quality would not have improved if abnormal accruals before Section 302 and 906 were at a mean of negative three and after Sections 302 and 906 were at a mean of positive three.

³⁰ I also modeled the growth variable with Tobin's Q. In this model, the Tobin's Q variable was significantly positive approximately half of the time, however the SOX test variable results were similar to the primary model with one exception: for the aggressive earnings management sample in the quarter 3, positive abnormal accruals subsample the test variable (SOX) was significant at the 10% level (one-tailed).

and the 20% of the sample firms with the highest negative performance-adjusted abnormal accruals as the extreme earnings management sample. The remaining 60% of the sample firms are identified as the low earnings management sample. The empirical model is the same as above and is calculated separately for the extreme earnings management and low earnings management samples.

My model includes two observations for each company: the pre-Section 302 and 906 period and the post-Section 302 and 906 period. Because having multiple observations from one company can result in serial correlation of the error terms, I use robust standard errors in my main analysis and perform a robustness test using a panel data fixed effects model.

IV. Results

Descriptive Statistics and Univariate Tests – Full Sample

Table 1³¹ presents the sample firm composition and the number of unique firms in the sample. Overall, my analysis includes 1,210 unique firms with 8,596 firm quarters.

Table 2 presents the two-digit SIC code for the 8,596 firm-quarter observations in total and by pre-SOX aggressive earnings management behavior.

In Table 3, the univariate test of differences in means for the full sample shows that the pre-SOX and post-SOX quarters (2001 and 2003, respectively) are statistically different in the absolute value of abnormal accruals (ABSPAAC) only for quarter 4, where the abnormal accruals are smaller post-SOX. Company size (Size) is statistically different for all four quarters however size is significantly smaller post-SOX for quarters 1 and 2 and is significantly larger in quarters 3 and 4. Cash flow from operations (CFO) is significantly smaller post-SOX but only in quarter 1. Financial distress (Distress) and Leverage are both significantly larger post-SOX in all four quarters. Market to book (MTB) is statistically different for all four quarters however market to book is significantly smaller post-SOX for quarters 1 and 2 and is significantly larger in quarters 3 and 4. In all four quarters, the proportion of firms with a Big 4 auditor is not significantly different pre-SOX and post-SOX. This is not surprising as my sample only includes firms that did not change auditors during the sample period.

Because of these statistically significant differences between the pre-SOX and post-SOX periods, it seems appropriate to control for these variables in my multivariate tests.

³¹ Tables appear in Appendix 3.

Multivariate Analysis – Full Sample

In a multivariate analysis, I examine whether quarterly financial reporting quality (proxied by the absolute value of abnormal accruals) has improved following SOX Sections 302 and 906 while controlling for those variables previous research has shown to have an independent effect on abnormal accruals. The multivariate results for the full sample are in Table 4. For each quarter, the model (for the full sample, the positive sample and the negative sample) is highly significant ($p < 0.001$), and the adjusted R-squared values are 25.7% to 37.0% for the full sample, 18.4% to 49.0% for the positive sample, and 32.8% to 35.1% for the negative sample across the four quarters.

In quarter 1, as expected, the absolute value of abnormal accruals is lower post-SOX for the full sample, the sample of firms that had positive (income increasing) abnormal accruals in the pre-SOX period, and the sample of firms that had negative (income decreasing) abnormal accruals in the pre-SOX period. The adjusted R-squared values are 25.7%, 18.4% and 32.8% for the full, positive and negative samples, respectively. In all three samples, most of the control variables were significant in the expected direction except for the market to book and size variables, which were not significant.

In quarter 2, the absolute value of abnormal accruals is not statistically different post-SOX for the full sample and the negative abnormal accrual sample. For the positive abnormal accruals sample, the absolute value of abnormal accruals is statistically larger post-SOX. This result is contrary to my expectation. The adjusted R-squared values are 26.6%, 31.1% and 33.1% for the full, positive and negative samples, respectively. In all three samples, most of the

control variables were significant in the expected direction, except for the market to book and size variables, which were not significant.

In quarter 3, the absolute value of abnormal accruals is not statistically different post-SOX for the full sample and the negative abnormal accrual sample. For the positive abnormal accruals sample, the absolute value of abnormal accruals is statistically larger post-SOX. Similar to quarter 2 results, this result is contrary to my expectation. The adjusted R-squared values are 37.0%, 49.0 and 33.0% for the full, positive and negative samples, respectively. In all three samples, most of the control variables were significant in the expected direction, except for the market to book variable, which was not significant.

In quarter 4, the absolute value of abnormal accruals is lower post-SOX for the full sample and the sample of firms that had negative abnormal accruals in the pre-SOX period. For the positive abnormal accruals sample, the absolute value of abnormal accruals is not significantly different post-SOX. The adjusted R-squared values are 32.5%, 36.6% and 35.1% for the full, positive and negative samples, respectively. In all three samples, most of the control variables were significant in the expected direction, except for the market to book variable, which was mostly not significant.

Regarding Hypothesis 1, the results indicate that in quarters 1 and 4, the absolute value of abnormal accruals for the full sample are lower post-SOX, while there is no significant change in the absolute value of abnormal accruals in quarters 2 and 3. Overall, the data do not appear to support Hypothesis 1.

Regarding Hypothesis 2, the results indicate that in quarter 1, the absolute value of abnormal accruals for the positive sample are lower post-SOX, however, unexpectedly, in

quarters 2 and 3, the absolute value of abnormal accruals for the positive sample are higher post-SOX, and there is no significant change in the absolute value of abnormal accruals in quarter 4. Overall, the data do not appear to support Hypothesis 2.

Regarding Hypothesis 3, the results indicate that, as expected, in quarters 1 and 4, the absolute value of abnormal accruals for the negative sample are lower post-SOX while there is no significant change in the absolute value of abnormal accruals in quarters 2 and 3. Overall, the data do not appear to support Hypothesis 3.

Overall, the results from the full sample model indicate that quarterly financial reporting quality (proxied by the absolute value of abnormal accruals) has not systematically improved following SOX.

Descriptive Statistics and Univariate Tests – Aggressive Earnings Management Subsample

In Table 5, the univariate test of differences in means for the aggressive earnings management subsample shows that the absolute value of abnormal accruals (ABSPAAC) for the 40% of firms from the full sample with extreme earnings management is statistically larger than the low earnings management subsample for all four quarters. Company size (Size), Big 4 auditor (BIGN), and cash flow from operations (CFO) are all statistically smaller for firms in the aggressive earnings management subsample for all four quarters. Financial distress (Distress) and Leverage are statistically larger for firms in the aggressive earnings management subsample for all four quarters. The market to book (MTB) variable is statistically larger for firms in the aggressive earnings management subsample, but only for quarter 4; the difference between the subsamples is not statistically significant for the first three quarters.

In Table 6, the univariate test of differences in means pre-SOX versus post-SOX for the aggressive earnings management subsample shows that: the absolute value of abnormal accruals (ABSPAAC) is statistically smaller post-SOX for all four quarters; company size (Size) is statistically smaller post-SOX (except for quarter 3 when it is larger); Financial distress (Distress) and Leverage are statistically larger for all four quarters; the market to book (MTB) variable is statistically smaller in quarters 1 and 2 and significantly larger in quarters 3 and 4; cash flow from operations (CFO) is not statistically different in any quarter.

Again, in Table 6, the univariate test of differences in means pre-SOX versus post-SOX for the low earnings management subsample shows that: the absolute value of abnormal accruals (ABSPAAC) is statistically larger post-SOX for all four quarters; cash flow from operations (CFO) is statistically smaller post-SOX for all four quarters; Financial distress (Distress) and Leverage are statistically larger in quarters 1 and 2 and are not statistically different in quarters 3 and 4; the market to book (MTB) variable is statistically larger in quarters 3 and 4 and not statistically different in quarters 1 and 2; company size (Size) is significantly smaller in quarter 1, larger in quarter 4 and not different in quarters 2 and 3.

These results support modeling abnormal accruals separately for extreme earnings management firms and low earnings management firms.

Multivariate Analysis – Aggressive Earnings Management Subsample

In a multivariate analysis, I examine whether quarterly financial reporting quality (proxied by the absolute value of abnormal accruals) has improved following SOX Sections 302 and 906 for firms with aggressive earnings management and low earnings management, separately, while controlling for those variables previous research has shown to have an

independent effect on abnormal accruals. The results are in Table 7. Overall, consistent with my expectations, abnormal accruals decrease post SOX for the aggressive earnings management full sample, the positive subsample and the negative subsample. These results are consistent for all four quarters, except the quarter 3 positive abnormal accruals subset of the extreme earnings management sample where there is no significant difference in abnormal accruals post-SOX. Surprisingly, for the low earnings management sample, abnormal accruals increased post-SOX for the full sample, the positive subsample and the negative subsample. These results were also consistent for all four quarters. For each quarter, the model (for the full sample, the positive subsample and the negative subsample) is highly significant ($p < 0.001$), and the adjusted R-squared values are 13.8% to 39.3% for the full sample, 18.1% to 52.2% for the positive subsample, and 12.9% to 38.8% for the negative subsample across the four quarters.

In quarter 1, as expected, abnormal accruals decreases post SOX for the aggressive earnings management full sample, the positive subsample and the negative subsample. Surprisingly, for the low earnings management sample, abnormal accruals increased post-SOX for the full sample, the positive subsample and the negative subsample. In all three samples, most of the control variables are significant in the expected direction except for the market to book and size variables, which are not significant. The BIGN auditor variable is significantly negative in three of the models and not significant in the other three models. The financial distress (Distress) and leverage variables are significant in the expected direction, except for the aggressive abnormal accruals positive abnormal accruals subsample where the variables are both significant in the opposite direction.

Similar to quarter 1, in quarter 2, abnormal accruals decrease post SOX for the aggressive earnings management full sample, the positive subsample and the negative subsample.

Surprisingly, for the low earnings management sample, abnormal accruals increased post-SOX for the full sample, the positive subsample and the negative subsample. In all three samples, most of the control variables are significant in the expected direction except for the market to book variable, which is not significant. The size and BIGN auditor variables are significantly significant in the expected direction, but only in two models. In the other four models, the variables are not significant. The financial distress (Distress), leverage, and cash flow from operations variables are significant in the expected direction but only in three or four of the models. In the other models, these variables are not significant.

Again in quarter 3, as expected, abnormal accruals decrease post SOX for the aggressive earnings management full sample and the negative subsample, however, for the low earnings management sample, abnormal accruals increase post-SOX for the full sample, the positive subsample and the negative subsample. In quarter 3, the change in abnormal accruals for the positive subsample of the extreme earnings management sample is not significant different from zero. In all three samples, only the cash flow from operations variable is significant in the expected direction. The BIGN auditor variable was significantly negative in four of the models and not significant in the other two models. The size variable is significant in the expected direction in two models and not significant in the remaining four models. The financial distress (Distress) and leverage variables are significant in the expected direction for three models, significant in the opposite direction for two models and not significant in the last model.

In quarter 4, as expected, abnormal accruals decreases post SOX for the aggressive earnings management full sample, the positive subsample and the negative subsample. Again, for the low earnings management sample, abnormal accruals increase post-SOX for the full sample, the positive subsample and the negative subsample. In all three samples, the cash flow from operations variable is significant in the expected direction. The size variable is significant in the expected direction for four models and not significant in the other two models. The Big 4 auditor variable is significant in two of the models and not significant in the other four models. The market to book variable is significant in the opposite direction for two of the models and not significant in the other four models. The financial distress (Distress) and leverage variables are significant in the expected direction for two models and not significant in the other four models.

Regarding Hypothesis 4, the results indicate that for firms with aggressive earnings management pre-SOX, there is a decline in the absolute value of performance-adjusted abnormal accruals for each of the four quarters post-SOX as compared to the respective same-quarter pre-SOX.

Regarding Hypothesis 5, the results indicate that for firms with aggressive earnings management and positive abnormal accruals (performance-adjusted) pre-SOX Sections 302 and 906, there is a decline in the absolute value of abnormal accruals in quarters 1, 2 and 4 post-SOX as compared to the respective same-quarter pre-SOX. There is no significant change in abnormal accruals in quarter 3.

Regarding Hypothesis 6, the results indicate that for firms with aggressive earnings management and negative abnormal accruals (performance-adjusted) pre-SOX Sections 302 and

906, there is a decline in the value of abnormal accruals for each of the four quarters post-SOX as compared to the respective same-quarter pre-SOX.

Interestingly, for all three samples and for all four quarters, firms in the low earnings management sample increase abnormal accruals post-SOX.

Overall, the results indicate that SOX 302 and 906 are associated with lower earnings management for the firms that exhibit the most aggressive earnings management pre-SOX, and are associated with higher earnings management for the firms that exhibit the lowest earnings management pre-SOX.

V. Additional Analyses

In addition to my main analysis above, I performed several additional sensitivity analyses. First, to further strengthen my contribution regarding the financial reporting quality attributed to managers versus the “joint measure” of financial reporting quality, I compare the abnormal accruals from Q2 of 2002 to Q3 of 2002, the last quarter before and the first quarter after the implementation of Sections 302 and 906. This period is the most likely to have experienced a change in financial reporting quality that can be attributed primarily to management versus both management and the auditors. However, as Figure 1³² indicates, performance-adjusted abnormal accruals have a quarterly pattern that makes a quarter 3 to quarter 4 analysis problematic. In Figure 1, I plot the signed quarterly performance-adjusted abnormal accruals from 2000 to 2006 in total and separately for the positive and negative abnormal accruals subsamples (positive and negative abnormal accruals were calculated for each year separately in this graph).³³

From Figure 1, it is apparent that the performance-adjusted abnormal accruals increase in each quarter from quarter 1 to quarter 4 and then decline in quarter 1 of the next year. For this reason, a levels comparison of quarter 2 to quarter 3 of 2002 would not be appropriate. Instead, I compared the average change in performance-adjusted abnormal accruals from Q2 to Q3 of 2001 to the average change in performance-adjusted abnormal accruals from Q2 to Q3 of 2002. My

³² Graph 1 appears in Appendix 4.

³³ It is not relevant to my study to look at quarterly financial reports before 2000 because for fiscal quarters ending on or after March 15, 2000, the SEC required that registrants have contemporaneous reviews (by auditors) of quarterly financial reports. Prior to that, registrants could choose contemporaneous or retrospective reviews of quarterly reports and disclosure of the choice was not necessary. This change in 2000 would affect the ability of this study to contribute to the literature regarding managements’ effect on financial reporting quality separate from the auditor’s effect prior to the change.

results indicate that performance-adjusted abnormal accruals are larger in Q3 than Q2 in both 2001 and 2002. However, in 2002, the average change in performance-adjusted abnormal accruals from Q2 to Q3 is smaller than the related change in 2001. This would indicate that SOX Sections 302 and 906 had a dampening effect on performance-adjusted abnormal accruals.

Second, while SOX 302 and 906 did not directly affect auditor responsibility for the quarterly financial reports, in light of the well-published corporate frauds and Andersen troubles, it might be true that auditor behavior related to quarterly financial reporting had changed (separate from SOX) resulting in improved financial reporting quality in quarter 2 of 2002 (pre-SOX). In order to provide some evidence that auditor behavior had not changed on a quarterly basis pre-SOX, I compared performance adjusted abnormal accruals (controlling for all of the variables in the primary model) between quarter 2 of 2000, 2001 and 2002. For firms with aggressive earnings management in quarter 2 of 2001, abnormal accruals increased significantly from 2000 to 2001 and did not change from 2001 to 2002. For firms with low earnings management in quarter 2 of 2001, abnormal accruals increased significantly from 2000 to 2001 and decreased significantly from 2001 to 2002; the overall change from 2000 to 2002 was not significant. These results do not indicate that abnormal accruals pre-SOX (quarter 2 of 2002) were systematically improved as a result of increased auditor involvement in quarterly financial reporting.

Third, existing literature has indicated a relation between improvements in corporate governance and earnings quality (Bédard et al. 2004; Braiotta and Zhou 2006; Carcello et al. 2006; Carcello and Neal 2000; Carcello and Neal 2003; Klein 2002; Lin et al. 2006). However, these studies usually involve small sample sizes and hand-collected governance variables. As

my sample has 1,210 unique firms and 8,596 individual firm quarters, hand collecting governance variables is not reasonable (other studies with large sample sizes have examined earnings management for large samples without hand collecting these variables (Ashbaugh-Skaife et al. 2008; Cohen et al. 2008; Doyle et al. 2007; Francis et al. 2005; Lobo and Zhou 2006). Using the available databases, I was able to download three common governance variables from the Risk Metrics Database³⁴: the boss variable,³⁵ the percent of outsiders sitting on the Board of Directors, and the percent of outsiders sitting on the Audit Committee of the Board of Directors. However, after merging the firms with available Compustat data to calculate my model and the firms with available governance data, there were only 204 unique firms with 1,474 individual firm quarters on which to run the model. As a result, the models were not significant in almost all of the cases.³⁶ Therefore, the question as to whether a firm's corporate governance characteristics are associated with quarterly earnings management in the post-SOX environment is a topic for another study.

Fourth, in an environment that continues to debate the implementation of SOX Section 404 for non-accelerated filers, I examine the results of my tests separately for accelerated filers and non-accelerated filers. My results (untabulated) provide evidence of improved financial reporting quality for non-accelerated filers following Sections 302 and 906. Specifically, my results indicate that aggressive earnings management for non-accelerated filers decreased in all four quarters while aggressive earnings management for accelerated filers only decreased in

³⁴ Provided through ISS Governance Services and previously known as IRRC.

³⁵ The variable is usually a binary variable equal to 1 if the CEO and Chairman of the Board are the same individual and 0 otherwise.

³⁶ It should be noted that all 204 of these firms had a 100% independent Audit Committee; 67% of the observations had the same individual as the CEO and Chairman, and more than 75% of the observations had a Board of Directors that was comprised of more than 75% of independent directors.

quarters 3 and 4. These results provide some indication that non-accelerated filers improve financial reporting quality following the implementation of SOX 302 and 906, even though Section 404 is not relevant for these firms.

Fifth, to rule out the possibility that my results are attributable to the PCAOB limited inspections, rather than Sections 302 and 906, I tested for a greater improvement in quarterly financial statement quality in the Q3 and Q4 analyses than in the Q1 and Q2 analyses, only for clients of the largest 4 accounting firms. (See Appendix 1 for more information regarding the PCAOB inspections.) The results of this test (untabulated) were very similar to my main model results. There is no indication that the PCAOB limited inspections are driving my main model results.

Sixth, my sample includes two observations for each company, introducing serial correlation of the error terms. To address this issue, I also run a panel data fixed effects model. My results, in Table 8, are very similar to my primary model results except in one case where my test variable was no longer significant. In the panel data model, for firms with aggressive earnings management, the positive abnormal accruals subsample in quarter 3 is no longer significant using a panel data model. This difference does not materially change the interpretation of the results of the primary model.

Seventh, in order to test the sensitivity of my results to the model selected, I also calculate abnormal accruals using the Jones (1991) model and the modified Jones model (Dechow et al. 1995). The Jones (1991) model results (untabulated) were very similar to the performance-adjusted abnormal accruals used in my primary analysis. The modified Jones model results (untabulated) were also very similar to my primary model results except for the

aggressive earnings management sample of firms with negative abnormal accruals where the results for quarters 2 and 3 are no longer significant. This indicates that my results are not primarily driven by my model selection.

Eighth, examining abnormal accruals is only one measure of financial reporting quality. In order to provide additional evidence regarding quarterly financial reporting quality surrounding the implementation of SOX 302 and 906, I also examined the likelihood of companies to meet or just beat their quarterly earnings forecasts before and after SOX 302 and 906. Previous literature has indicated that the ability of a company to just meet or beat their earnings estimates is a sign of earnings management (or expectations management) and is therefore a sign of lower financial reporting quality (Cotter et al. 2006; Matsumoto 2002; Richardson et al. 2004). Previous research has also shown that firms have capital market incentives to achieve earnings forecasts (Bartov et al. 2002; Brown and Pinello 2008; Skinner and Sloan 2002). Based on this literature, I would expect that firms would be less likely to just meet or beat their quarterly earnings forecasts after the implementation of SOX 302 and 906.

Specifically, I use a logistic regression model to evaluate the likelihood that a firm would just meet or beat their quarterly earnings forecast before and after SOX 302 and 906.³⁷ My test model is as follows:

³⁷ Similar to my primary model above, the pre-SOX period is 2001 and the post-SOX period is 2003.

$$MBE_{it} = \alpha_0 + \beta_1 SOX_{it} + \beta_2 Loss_{it} + \beta_3 Size_{it} + \beta_4 Growth_{it} + \varepsilon$$

where:

MBE_{it}	=	is a binary variable that equals 1 if the firm either met or just beat (by \$0.01) their quarterly earnings forecast for firm i in quarter t , 0 otherwise (earnings forecasts are from the IBES database);
SOX_{it}	=	is a binary variable that equals 1 if the quarterly financial statement is for a quarter in 2003, 0 otherwise;
$Loss_{it}$	=	is a binary variable that equals 1 if the firm reports a loss for firm i in quarter t , 0 otherwise;
$Size_{it}$	=	natural log of the market value of equity for firm i at the end of the quarter $(t-1)$;
$Growth_{it}$	=	natural log of the market to book ratio for firm i at the end of the quarter $(t-1)$;

I use this model to evaluate the proclivity of a firm to just meet or beat their quarterly earnings forecasts for three samples of firms: (1) all firms with the necessary data in IBES and Compustat to calculate this model (10,088 firm-quarters), (2) the same set of firms that were included in my primary earnings management model³⁸ and with the necessary information available in IBES (3,156 firm-quarters), and (3) the set of firms in group (2) above examined separately for extreme and low earnings management firms. The results (untabulated) for the first two groups of firms above, the full set of firms with IBES information available and the set of firms that were included in my earnings management sample (and with the necessary IBES information available) are similar: firms are less likely to just meet or beat their quarterly earnings forecasts in quarters 2, 3 and 4 for both groups. For both groups, there is no difference in the likelihood to just meet or beat their quarterly earnings forecasts in quarter 1. Similar to the results from my primary analysis above, these results provide some indication that firms have improved financial quarterly reporting quality following the implementation of SOX Sections

³⁸ These firms also had available the necessary information to calculate earnings management.

302 and 906. The statistical models for the extreme and low earnings management samples were not significant in almost all cases.³⁹

³⁹ The model was only significant for the low earnings management subsample and only in quarters 2 and 4. In these two models, the coefficient on the test variable (SOX) is significant and negative, indicating that firms with low earnings management in quarters 2 and 4 have a lower likelihood of just meeting or beating their earnings forecasts (indication of higher earnings quality).

VI. Summary, Implications and Limitations

This study examines whether the provisions of SOX Sections 302 and 906 are associated with improved financial reporting quality. These provisions of SOX require the management of public companies to personally certify the financial statements, including the effectiveness of internal controls over financial reporting and any material changes in internal control, and they impose severe criminal penalties for false management certifications made knowingly or willfully. Congress clearly intends that these new requirements and penalties would result in improved financial reporting.

In this paper, I offer some evidence that this goal was met in the year following the implementation of SOX 302 and 906. The results indicate that financial reporting quality (proxied by the absolute value of performance-adjusted abnormal accruals) improves following the implementation of SOX Sections 302 and 906 for firms exhibiting aggressive earnings management behavior in the pre-SOX period. Interestingly, firms exhibiting low earnings management in the pre-SOX period have higher abnormal accruals (and lower earnings quality) in the post-SOX period. These results were consistent across all four quarters and for the total sample, the subsample with positive (income increasing) abnormal accruals, and the subsample with negative (income decreasing) abnormal accruals pre-SOX, with one exception. For quarter 2, financial reporting quality did not change for the positive abnormal accruals subsample of the extreme earnings management sample.

Because these provisions directly changed only the expectations of management related to quarterly filings, this study provides some evidence regarding the managers' effect on financial reporting quality separate from the auditor's effect, to the extent that financial reporting

quality improved in the interim quarters as well as the fourth quarter. These results would seem to indicate that managers of firms that exhibited extreme earnings management behavior in the pre-SOX period improved quarterly financial reporting quality following SOX 302 and 906.

A limitation of this study is the inability to isolate the effect on financial reporting quality of actions taken by management by their own initiative versus actions taken by management or by the auditor at the request of the Board of Directors or the Audit Committee. It is possible that either the Board or the Audit Committee required management or the auditor to take certain actions or make specific changes to their normal processes during the time period of my analysis either as a result of SOX or the macro-environment in general. Because I cannot observe the actions of the Board or Audit Committee, the result is (best case) noise in my model or (worst case) correlated omitted variables. While I have tried to isolate the effects of Sections 302 and 906 in my research design, at the very least, this study should provide useful information about quarterly financial reporting quality during this very interesting time.

A second limitation of this study is that it only provides evidence of improved quarterly financial reporting quality in the year following the implementation of SOX. It would be interesting for a future paper to examine quarterly financial reporting quality over a longer time horizon, providing an indication if the change in management behavior was short-term or longer-term.

Another limitation of this study is the use of discretionary accruals as a proxy for earnings management. As with all studies that use this measure, I cannot observe earnings management directly, so I use estimates calculated with the Modified Jones model. I do,

however, control for misspecification in this model using both the Kothari et al. (2005) performance matching and the Ball and Shivakumar (2006) nonlinear specification.

Subject to these limitations, this study makes several contributions to the literature. First, it provides evidence that quarterly financial reporting quality improves following the implementation of Sections 302 and 906 for firms that exhibited extreme earnings management behavior pre-SOX. Second, it provides some evidence about managements' effect on quarterly financial reporting quality separate from the auditor's effect because this study indicates that quarterly financial reporting quality improves (there is a decrease in abnormal accruals for aggressive earnings management firms during my test period) for the interim quarters as well as for the fourth quarter. Third, it can inform the ongoing debate surrounding the implementation of Section 404 requirements for non-accelerated filers; non-accelerated filers exhibiting aggressive earnings management in the pre-SOX period show improved financial reporting quality post-SOX. Fourth, my results provide an indication of an association between increased individual criminal liability and changes in manager's behavior. As a result of these contributions, the results of this study should be interesting to policy setters and regulators (SEC and PCAOB), auditors, investors, academic researchers, and managers.

References

- Accounting Principles Board Opinion No. 28: Interim Financial Reporting*. 1973. New York: The American Institute of Certified Public Accountants.
- Alverson, L. 2005. Sarbanes-Oxley S302 & 906: Corporate Reform or Legislative Redundancy? A Critical Look at the "New" Corporate Responsibility For Financial Reports. *Securities Regulation Law Journal* 33 (1):15.
- Anonymous. 1998. Chairman Levitt attacks earnings management. *The CPA Journal* 68 (11):8.
- Ashbaugh-Skaife, H., D. W. Collins, W. R. Kinney Jr, and R. LaFond. 2008. The Effect of SOX Internal Control Deficiencies and Their Remediation on Accrual Quality. *The Accounting Review* 83 (1):217-250.
- Ball, R., and L. Shivakumar. 2006. The Role of Accruals in Asymmetrically Timely Gain and Loss Recognition. *Journal of Accounting Research* 44 (2):207-242.
- Barton, J., and P. J. Simko. 2002. The Balance Sheet as an Earnings Management Constraint. *The Accounting Review* 77:1-27.
- Bartov, E., D. Givoly, and C. K. Hayn. 2002. The rewards to meeting or beating earnings expectations. *Journal of Accounting & Economics* 33 (2):173-204.
- Beaver, W. H. 1998. *Financial Reporting: An Accounting Revolution*. Third ed. Upper Saddle, NJ: Prentice Hall.
- Becker, C. L., M. L. Defond, J. Jiambalvo, and K. R. Subramanyam. 1998. The effect of audit quality on earnings management. *Contemporary Accounting Research* 15 (1):1.
- Bédard, J. 2006. *Sarbanes Oxley Internal Control Requirements and Earnings Quality*: SSRN.
- Bédard, J., S. M. Chtourou, and L. Courteau. 2004. The Effect of Audit Committee Expertise, Independence, and Activity on Aggressive Earnings Management. *Auditing* 23 (2):13-35.
- Bradshaw, M. T., S. A. Richardson, and R. G. Sloan. 2001. Do analysts and auditors use information in accruals? *Journal of Accounting Research* 39 (1):45-73.
- Braiotta, J., Louis, , and J. Zhou. 2006. An exploratory study of the effects of the Sarbanes-Oxley Act, the SEC and United States stock exchange(s) rules on audit committee alignment. *Managerial Auditing Journal* 21 (1/2):166-191.
- Brown, L. D., and M. L. Caylor. 2005. A Temporal Analysis of Quarterly Earnings Thresholds: Propensities and Valuation Consequences. *The Accounting Review* 80 (2):423-440.

- Brown, L. D., and A. S. Pinello. 2008. An Investigation of Firms' Propensities to Meet or Miss Analysts' Forecasts of Cash Flows and Earnings: SSRN.
- Burgstahler, D., and M. Eames. 2006. Management of Earnings and Analysts' Forecasts to Achieve Zero and Small Positive Earnings Surprises. *Journal of Business Finance & Accounting* 33 (5/6):633-652.
- Carcello, J. V., C. Hollingsworth, and S. A. Mastrolia. 2008. The Effect of PCAOB Inspections on Big 4 Audit Quality. *Working Paper*.
- Carcello, J. V., C. W. Hollingsworth, and T. L. Neal. 2006. Audit Committee Financial Experts: A Closer Examination Using Firm Designations. *Accounting Horizons* 20 (4):351-374.
- Carcello, J. V., and T. L. Neal. 2000. Audit Committee Composition and Auditor Reporting. *The Accounting Review* 75 (4):453-467.
- . 2003. Audit committee characteristics and auditor dismissals following "new" going-concern reports. *The Accounting Review* 78 (1):95-117.
- Clayton, R. D., and T. Mackintosh. 2002. Corporate Governance: Avoiding Criminal Liability under Sarbanes-Oxley. *Holland & Hart, LLP*.
- Cohen, D. A., A. Dey, and T. Z. Lys. 2008. Real and Accrual-Based Earnings Management in the Pre- and Post-Sarbanes-Oxley Periods. *The Accounting Review* 83 (3):757-788.
- Cotter, J., I. Tuna, P. D. Wysocki, and J. L. Callen. 2006. Expectations Management and Beatable Targets: How Do Analysts React to Explicit Earnings Guidance?: Discussion of "Expectations Management and Beatable Targets: How Do Analysts React to Explicit Earnings Guidance?". *Contemporary Accounting Research* 23 (3):593-624.
- Cunningham, L. A. 2002. Sarbanes-Oxley Yawn: Heavy Rhetoric, Light Reform (and It Just Might Work), The. *Connecticut Law Review* 35:915.
- Daniel, N. D., D. J. Denis, and L. Naveen. 2008. Do firms manage earnings to meet dividend thresholds? *Journal of Accounting & Economics* 45 (1):2-26.
- DeAngelo, L. E. 1981. Auditor Size and Audit Quality. *Journal of Accounting & Economics* 3 (3):183-199.
- Dechow, P. M., S. A. Richardson, and I. Tuna. 2003. Why Are Earnings Kinky? An Examination of the Earnings Management Explanation. *Review of Accounting Studies* 8 (2):355-384.
- Dechow, P. M., R. G. Sloan, and A. P. Sweeney. 1995. Detecting earnings management. *The Accounting Review* 70 (2):193-225.

- DeFond, M. L., and C. W. Park. 2001. The reversal of abnormal accruals and the market valuation of earnings surprises. *The Accounting Review* 76 (3):375-405.
- Doyle, J. T., W. Ge, and S. McVay. 2007. Accruals Quality and Internal Control over Financial Reporting. *The Accounting Review* 82 (5):1141-1170.
- Fairfax, L. M. 2002. Form over Substance? Officer Certification and the Promise of Enhanced Personal Accountability under the Sarbanes–Oxley Act. *Rutgers Law Review* 55 (1).
- Federal Register. 2004. Securities and Exchange Commission, 70291.
- Francis, J., R. LaFond, P. Olsson, and K. Schipper. 2005. The market pricing of accruals quality. *Journal of Accounting and Economics* 39 (2):295.
- Francis, J. R., E. L. Maydew, and H. C. Sparks. 1999. The role of Big 6 auditors in the credible reporting of accruals. *Auditing-A Journal Of Practice & Theory* 18 (2):17-34.
- Ge, W., and S. McVay. 2005. The disclosure of material weaknesses in internal control after the Sarbanes-Oxley Act. *Accounting Horizons* 19 (3):137-159.
- Gunny, K., and T. C. Zhang. 2006. *The Association Between Earnings Quality and Regulatory Report Opinions in the Accounting Industry - AICPA Peer Review and PCAOB Inspections*: SSRN.
- Hackenbrack, K., and W. R. Knechel. 1997. Resource allocation decisions in audit engagements. *Contemporary Accounting Research* 14 (3):481-500.
- Hay, D. C., W. R. Knechel, and N. Wong. 2006. Audit Fees: A Meta-analysis of the Effect of Supply and Demand Attributes. *Contemporary Accounting Research* 23 (1):141-191.
- Healy, P. M. 1985. The Effect of Bonus Schemes on Accounting Decisions. *Journal of Accounting & Economics* 7 (1-3):85-107.
- Healy, P. M., and K. G. Palepu. 2001. Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting & Economics* 31 (1-3):405-440.
- Hribar, P., and D. W. Collins. 2002. Errors in estimating accruals: Implications for empirical research. *Journal of Accounting Research* 40 (1):105-134.
- Hribar, P., and D. C. Nichols. 2007. The Use of Unsigned Earnings Quality Measures in Tests of Earnings Management. *Journal of Accounting Research* 45 (5):1017-1053.

- Johl, S., C. A. Jubb, and K. A. Houghton. 2007. Earnings management and the audit opinion: evidence from Malaysia. *Managerial Auditing Journal* 22 (7):688.
- Jones, J. J. 1991. Earnings Management During Import Relief Investigations. *Journal of Accounting Research* 29 (2):193-228.
- Klein, A. 2002. Audit committee, board of director characteristics, and earnings management. *Journal of Accounting & Economics* 33 (3):375-400.
- Koh, P.-S. 2007. Institutional investor type, earnings management and benchmark beaters. *Journal of Accounting and Public Policy* 26 (3):267-299.
- Kothari, S. P., A. J. Leone, and C. E. Wasley. 2005. Performance matched discretionary accrual measures. *Journal of Accounting and Economics* 39 (1):163-197.
- Levinsohn, A. 2003. Legal liability for your financial reporting? *Strategic Finance* 85 (3):63-64.
- Lin, J. W., J. F. Li, and J. S. Yang. 2006. The effect of audit committee performance on earnings quality. *Managerial Auditing Journal* 21 (9):921.
- Lobo, G. J., and J. Zhou. 2006. Did Conservatism in Financial Reporting Increase after the Sarbanes-Oxley Act? Initial Evidence. *Accounting Horizons* 20 (1):57-73.
- Matsumoto, D. A. 2002. Management's incentives to avoid negative earnings surprises. *The Accounting Review* 77 (3):483-515.
- McEnroe, J. E. 2007. Perceptions of the Effect of Sarbanes-Oxley on Earnings Management Practices. *Research in Accounting Regulation* 19:137-157.
- Mendenhall, R. R., and W. D. Nichols. 1988. Bad News and Differential Market Reactions to Announcements of Earlier-Quarters Versus Fourth-Quarter Earnings. *Journal of Accounting Research* 26:63-86.
- Menon, K., and D. D. Williams. 2001. Long-term trends in audit fees. *Auditing* 20 (1):115-136.
- Phillips, J., M. Pincus, and S. O. Rego. 2003. Earnings management: New evidence based on deferred tax expense. *The Accounting Review* 78 (2):491-521.
- President Bush's Speech from Wall Street. 2002. July 9, 2002.
- Public Accounting Report. 1998. *Levitt scolds auditors for 'managed' earnings*, October 15, 4.
- Raghunandan, K., and D. V. Rama. 2006. SOX Section 404 Material Weakness Disclosures and Audit Fees. *Auditing: A Journal of Practice & Theory* 25 (1):99-114.

- Reynolds, J. K., and J. R. Francis. 2000. Does size matter? The influence of large clients on office-level auditor reporting decisions. *Journal of Accounting & Economics* 30 (3):375-400.
- Richardson, S. A., S. H. Teoh, and P. D. Wysocki. 2004. The Walk-down to Beatable Analyst Forecasts: The Role of Equity Issuance and Insider Trading Incentives*. *Contemporary Accounting Research* 21 (4):885-924.
- Sarbanes-Oxley Act of 2002*. 107-204. 107th Congress, July 30, 2002.
- Simunic, D. A. 1980. The Pricing of Audit Services: Theory and Evidence. *Journal of Accounting Research* 18 (1):161-190.
- Skinner, D. J., and R. G. Sloan. 2002. Earnings Surprises, Growth Expectations, and Stock Returns or Don't Let an Earnings Torpedo Sink Your Portfolio. *Review of Accounting Studies* 7 (2):289-312.
- Statement on Auditing Standards No. 100: Interim Financial Information*. 2002. New York: The American Institute of Certified Public Accountants.
- Zmijewski, M. E. 1984. Methodological Issues Related to the Estimation of Financial Distress Prediction Models. *Journal of Accounting Research* 22:59-82.

Appendix

Appendix 1: Exhibits

Exhibit 1
Example of SOX Section 302 Certification of CEO (Microsoft Corporation)

I, Steven A. Ballmer, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Microsoft Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

January 24, 2008

/s/ Steven A. Ballmer

Steven A. Ballmer, Chief Executive Officer

Exhibit 2
Example of SOX Section 302 Certification of CFO (Microsoft Corporation)

I, Christopher P. Liddell, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Microsoft Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

January 24, 2008

/s/ Christopher P. Liddell

Christopher P. Liddell, Chief Financial Officer

Exhibit 3
Example of SOX Section 906 Certification of CEO (Microsoft Corporation)

**CERTIFICATIONS PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002
(18 U.S.C. SECTION 1350)**

In connection with the Quarterly Report of Microsoft Corporation, a Washington corporation (the “Company”), on Form 10-Q for the quarter ended December 31, 2007, as filed with the Securities and Exchange Commission (the “Report”), Steven A. Ballmer, Chief Executive Officer of the Company, does hereby certify, pursuant to § 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. § 1350), that to his knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

/s/ Steven A. Ballmer

Steven A. Ballmer
Chief Executive Officer
January 24, 2008

[A signed original of this written statement required by Section 906 has been provided to Microsoft Corporation and will be retained by Microsoft Corporation and furnished to the Securities and Exchange Commission or its staff upon request.]

Exhibit 4
Example of Auditor's Review Report for Quarterly Filing (Microsoft Corporation)

January 24, 2008

Microsoft Corporation
One Microsoft Way
Redmond, Washington

We have reviewed, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the unaudited interim financial information of Microsoft Corporation and subsidiaries for the periods ended December 31, 2007 and 2006, as indicated in our report dated January 24, 2008; because we did not perform an audit, we expressed no opinion on that information.

We are aware that our report referred to above, which was included in your Quarterly Report on Form 10-Q for the quarter ended December 31, 2007, is incorporated by your reference in Registration Statements Nos. 333-120511, 333-109185, 333-06298, 333-16665, 333-118764, 333-91755, 333-52852, 333-102240, 33-36498, 33-45617 and 333-132100 of Microsoft Corporation on Forms S-8 and Registration Statement Nos. 333-43449, 333-110107, and 333-108843 of Microsoft Corporation on Forms S-3.

We also are aware that the aforementioned report, pursuant to Rule 436© under the Securities Act of 1933, is not considered a part of the Registration Statement prepared or certified by an accountant or a report prepared or certified by an accountant within the meaning of Sections 7 and 11 of that Act.

DELOITTE & TOUCHE LLP

/s/ DELOITTE & TOUCHE LLP
Seattle, Washington

Appendix 2

The PCAOB

According to their mission statement, the Public Company Accounting Oversight Board (PCAOB) “is a private-sector, non-profit corporation, created by the Sarbanes-Oxley Act of 2002, to oversee the auditors of public companies in order to protect the interests of investors and further the public interest in the preparation of informative, fair and independent audit reports.”⁴⁰ The creation of the PCAOB was one of the significant provisions of SOX. The PCAOB sets auditing standards and oversees the auditors of public companies. Specifically related to the oversight of auditors, the PCAOB ensures the registration and inspection of auditors of public companies. They also have the authority to enforce their rules related to auditors through disciplinary hearings and the power to revoke the registration of audit firms who do not comply. I am aware of two papers that are currently in progress related to the effect of the PCAOB inspection process on financial reporting quality. Gunny and Zhang (2006) determine that the opinions from the PCAOB inspections are able to distinguish earnings quality, as measured by the use of discretionary accruals, the propensity to meet earnings benchmarks and the use of earnings smoothing techniques. Carcello et al. (2008) examine abnormal accruals for all clients of each Big 4 audit firm⁴¹ in the first two years after a PCAOB inspection. Their results indicate that there is a significant decrease in abnormal accruals in each of the two years following the inspection, primarily driven by clients that had positive (income increasing) abnormal accruals in the year before the inspection.

⁴⁰ <http://www.pcaob.com/index.aspx>

⁴¹ The Big 4 firms include Deloitte & Touche LLP, Ernst & Young LLP, KPMG LLP and PricewaterhouseCoopers LLP.

Notwithstanding this research, I do not expect the PCAOB registration, inspection and enforcement actions to confound the results of this study because, while the PCAOB was created in 2002, it did not begin registration of audit firms until October 22, 2003,⁴² the very end of my test period. Inspections for all audit firms except the four largest firms⁴³ did not commence until 5/1/2004 and the first inspection report for these firms was issued 1/21/2005. For the four largest audit firms, the first inspections were identified as “limited inspections”. These limited inspections occurred in the second half of calendar 2003, and the limited inspection reports were issued in August of 2004. According to the 2003 limited inspection reports for the four largest audit firms, the limited inspection:

...included a review of certain portions of selected audit engagements and a review of policies and procedures in the following seven functional areas ... tone at the top; practices for partner evaluation, compensation, promotion, and assignment of responsibility; independence implications of non-audit services, business ventures, alliances and arrangements, and commissions and contingent fees; client acceptance and retention; the firm’s internal inspection program; practices for establishment and communication of audit policies, procedures and methodologies, including training; and the supervision by U.S. audit engagement teams of the work performed by foreign affiliates on foreign operations of U.S. audit clients.

⁴⁴

None of these topics can be clearly identified as affecting the quarterly review process.

Additionally, because audit fees are often used as a proxy for audit effort (Hackenbrack and Knechel 1997; Hay et al. 2006; Menon and Williams 2001; Simunic 1980), I calculated the annual average audit fee (in millions) for 2000 through 2006 for all companies in Audit

⁴² http://www.pcaob.com/Rules/Rules_of_the_Board/Section_2.pdf

⁴³ Deloitte & Touche LLP, Ernst & Young LLP, KPMG LLP, and PricewaterhouseCoopers LLP.

⁴⁴ The public portion of all inspection reports is available at the PCAOB website (<http://www.pcaob.com>).

Analytics⁴⁵ and determined that while average audit fees increased slightly in 2002-2003, the most significant increase was from 2003 to 2004, likely reflecting the additional audit effort related to internal control audits under Section 404 (Raghunandan and Rama 2006) and (potentially) from implementation of audit or risk assessment changes resulting from the PCAOB inspections. There is no clear indication that auditors were billing (or performing) significant additional work in 2003, supporting my argument that auditors likely did not perform extensive additional work on the quarterly SEC filings in 2003 as compared to 2001.

In summary, I do not expect PCAOB inspections to affect my sample because only the four largest firms had any PCAOB inspection activity during my test period (2001-2003), and even for those firms, the PCAOB only conducted limited reviews of *audit engagements*, not of quarterly reviews, from June of 2003 to December of 2003;⁴⁶ the reports were not issued until August of 2004. It is not likely that the four largest audit firms, each with 65+ offices and 15,000+ professional employees, improved their client risk assessment procedures resulting in enhancements to their quarterly financial statement review process and disseminated these changes to the local practice offices quickly enough after the PCAOB inspections began to affect quarterly reporting in 2003. Also, the PCAOB had not previously conducted inspections, so it is unlikely that the inspectors were able to identify and communicate quality issues related to the quarterly financial statement review process to the audit firm quickly enough to affect the September of 2003 or December of 2003 quarterly reviews. Lastly, it is not likely that the effort

⁴⁵ www.auditanalytics.com

⁴⁶ For PWC through January, 2004.

which an audit firm expended on quarterly reviews or annual audits would not be reflected in higher fees, which did not materialize to any great extent until 2004.

If my conclusions above are not correct, I would expect to see a greater improvement in quarterly financial statement quality in the 2003 Q3 and Q4 analyses than in the Q1 and Q2 analyses when examining only the clients of the largest 4 accounting firms. I conduct this as a sensitivity test.

Appendix 3: Tables

Table 1
Sample Firms Composition

Panel A: Sample Firms Screening:

	<u>2001</u>	<u>2003</u>
US Firms with data available in Compustat to calculate abnormal accruals	16,690	14,859
Drop Andersen clients	(2,641)	
Drop firms in excluded industries	(3,128)	(3,239)
Drop firms without data available in Compustat to calculate test model	(1,840)	(1,695)
Drop firms with merger events in the test period	(1,553)	(1,423)
Drop firms that were not in the sample for the same quarter of both years	(2,468)	(3,442)
Drop firms that changed auditors during test period	(762)	(762)
Firms in sample	4,298	4,298

Panel B: Number of Unique Firms in the Sample:

	<u>Number of Unique Firms</u>
Firms in sample for one quarter	116
Firms in sample for two quarters	61
Firms in sample for three quarters	72
Firms in sample for four quarters	<u>961</u>
Total	1,210

Table 2
Sample Industry Composition

2 Digit SIC Code		All Firms	Aggressive Earnings Management	
			Yes	No
10	Metal Mining	66	34	32
12	Coal Mining	10	0	10
13	Oil and Gas Extraction	326	70	256
14	Mng, Quarry Nonmtl Minerals	48	6	42
15	Bldg Cnstr – Gen Contr, Op Bldr	8	0	8
16	Heavy Construction	20	8	12
17	Construction – Special Trade	24	12	12
20	Food Products	220	36	184
21	Tobacco Products	20	6	14
22	Textile Mill Products	54	12	42
23	Apparel & Other Finished Pds	44	24	20
24	Lumber and Wood (Excl Furn)	50	8	42
25	Furniture and Fixtures	24	8	16
26	Paper and Allied Products	104	18	86
27	Printing, Publishing and Allied	98	34	64
28	Chemical and Allied Products	1416	492	924
29	Petroleum Refining and Related	46	14	32
30	Rubber & Misc Plastic Prod	142	12	130
31	Leather and Leather Products	44	24	20
32	Stone, Clay, Glass, Concrete Prod	70	10	60
33	Primary Metal Industries	196	26	170
34	Fabricated Metal	184	24	160
35	Industrial, Comml Machinery	622	296	326
36	Electrical	746	300	446
37	Transportation Equipment	182	42	140
38	Meas Instr, Photo Goods	860	460	400
39	Misc Manufacturing Indust	90	44	46
45	Transportation by Air	86	18	68
46	Pipe Lines	2	0	2
47	Transportation Services	32	0	32

Table 2 (continued)
Sample Descriptive Statistics

2 Digit SIC Code		All Firms	Aggressive Earnings Management	
			Yes	No
50	Durable Goods – Wholesale	206	58	148
51	Nondurable Goods – Wholesale	86	50	36
52	Bldg Matl, Hardwr, Garden	32	6	26
53	General Merchandise	8	2	6
54	Food Stores	38	10	28
55	Auto Dealers, Gas Stations	18	6	12
56	Apparel and Accessory Stores	24	14	10
57	Home Furniture & Equip Store	52	32	20
58	Eating and Drinking Places	222	38	184
59	Miscellaneous Retail	130	80	50
65	Real Estate	40	4	36
67	Holding, Other Investment Offices	138	78	60
70	Hotels, Other Lodging	60	22	38
72	Personal Services	38	12	26
73	Business Services	1,418	848	570
75	Auto Repair, Services, Parking	24	0	24
76	Misc Repair Services	6	4	2
78	Motion Pictures	40	18	22
79	Amusements, Recreation	<u>182</u>	<u>116</u>	<u>66</u>
Total		8,596	3,436	5,160

Table 3
Sample Descriptive Statistics - Difference in Sample Means
Full Sample (Pre-SOX versus Post-SOX)

Panel A: First Quarter Samples:

Variable	Pre-SOX^a Quarters Sample (n=1,006)			Post-SOX^a Quarters Sample (n=1,006)			Difference in sample Means
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	
ABSPAAC	0.073	0.034	0.195	0.069	0.027	0.217	-0.004
SOX	0.000	0.000	0.000	1.000	1.000	0.000	NA
Size	4.492	4.504	2.312	4.111	4.101	2.459	-0.381 ***
BIGN ^b	0.740	1.000	0.439	0.740	1.000	0.439	0.000
CFO	-0.031	-0.008	0.106	-0.047	-0.005	0.184	-0.016 **
Distress	-3.531	-3.917	2.431	-2.536	-3.975	7.743	0.995 ***
MTB	2.894	1.537	9.504	2.096	1.226	6.657	-0.798 **
Leverage	0.265	0.173	0.363	0.423	0.181	1.281	0.158 ***

Table 3 (continued)
Sample Descriptive Statistics - Difference in Sample Means
Full Sample (Pre-SOX versus Post-SOX)

Panel B: Second Quarter Samples:

Variable	Pre-SOX^a Quarters Sample (n=1,045)			Post-SOX^a Quarters Sample (n=1,045)			Difference in Sample Means
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	
ABSPAAC	0.118	0.043	0.335	0.130	0.047	0.312	0.012
SOX	0.000	0.000	0.000	1.000	1.000	0.000	NA
Size	4.559	4.565	2.379	4.359	4.416	2.448	-0.200 *
BIGN ^b	0.727	1.000	0.446	0.727	1.000	0.446	0.000
CFO	-0.066	-0.002	0.226	-0.078	0.009	0.311	-0.012
Distress	-3.331	-3.959	3.264	-2.620	-3.983	7.241	0.711 ***
MTB	4.011	1.930	11.626	2.525	1.578	10.535	-1.486 ***
Leverage	0.278	0.171	0.419	0.446	0.175	1.328	0.168 ***

Table 3 (continued)
Sample Descriptive Statistics - Difference in Sample Means
Full Sample (Pre-SOX versus Post-SOX)

Panel C: Third Quarter Samples:

Variable	Pre-SOX^a Quarters Sample (n=1,072)			Post-SOX^a Quarters Sample (n=1,072)			Difference in Sample Means
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	
ABSPAAC	0.187	0.067	0.436	0.213	0.083	0.418	0.026
SOX	0.000	0.000	0.000	1.000	1.000	0.000	NA
Size	4.212	4.173	2.389	4.489	4.669	2.437	0.277 ***
BIGN ^b	0.722	1.000	0.448	0.722	1.000	0.448	0.000
CFO	-0.113	0.007	0.409	-0.136	0.024	0.566	-0.023
Distress	-3.138	-3.940	3.934	-2.437	-4.013	8.191	0.701 **
MTB	1.590	1.291	7.486	3.179	1.803	11.764	1.589 ***
Leverage	0.312	0.169	0.581	0.433	0.173	1.344	0.121 ***

Table 3 (continued)
Sample Descriptive Statistics - Difference in Sample Means
Full Sample (Pre-SOX versus Post-SOX)

Panel D: Fourth Quarter Samples:

Variable	Pre-SOX ^a Quarters Sample (n=1,175)			Post-SOX ^a Quarters Sample (n=1,175)			Difference in Sample Means
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	
ABSPAAC	0.255	0.092	0.522	0.220	0.091	0.413	-0.035 *
SOX	0.000	0.000	0.000	1.000	1.000	0.000	NA
Size	4.387	4.504	2.525	4.653	4.790	2.442	0.266 ***
BIGN ^b	0.714	1.000	0.452	0.714	1.000	0.452	0.000
CFO	-0.131	0.033	0.537	-0.134	0.042	0.607	-0.003
Distress	-2.768	-3.873	5.095	-2.040	-3.989	9.054	0.728 **
MTB	2.599	1.703	9.753	3.820	2.138	11.395	1.221 ***
Leverage	0.333	0.173	0.697	0.474	0.179	1.371	0.141 ***

Test for differences in the means: * significant at 10%; ** significant at 5%; *** significant at 1% in two-tailed tests.

^a Pre-SOX quarters are in 2001; post-SOX quarters are in 2003.

^b It is reasonable that there is no change in the mean for BIGN as all firms in my sample had the same auditor in both time periods.

Table 3 (continued)
Sample Descriptive Statistics - Difference in Sample Means
Full Sample (Pre-Sox versus Post-SOX)

Variable Definitions (firm and quarter subscripts are not presented for simplicity):

ABSPAAC	=	absolute value of performance-adjusted discretionary accruals calculated using the Ball and Shivakumar (2006) piecewise adjustment to the Modified Jones Model for firm i in quarter t ;
SOX	=	1 if the quarterly financial statement is for a quarter in 2003, 0 otherwise;
Size	=	natural log of the market value of equity for firm i at the beginning of the quarter ($t-1$) [Compustat item #13 (price) * Compustat item # 61 (common stock outstanding)];
BIGN	=	1 if firm i is audited by a Big N firm in quarter t , 0 otherwise;
CFO	=	firm i 's quarterly cash flow from operations from the Statement of Cash Flows in quarter t (Compustat item # 108) scaled by beginning of the quarter total assets (Compustat item # 44 in quarter $t-1$);
Distress	=	Zmijewski's (1984) financial condition index for firm i in quarter t ;
MTB	=	market value of firm i divided by the book value of assets measured at the beginning of the quarter t ;
Leverage	=	total debt [Compustat item # 45 (short term debt) + Compustat item # 51 (long term debt)] divided by total assets (Compustat item # 44) for firm i in quarter t .

Table 4**Regressions with Dependent Variable Absolute Value of Performance –Adjusted Abnormal Accruals****Full Sample (No Division in Sample for Extreme Earnings Management)**

$$ABSPAAC_{fq} = \alpha_0 + \beta_1 SOX_{fq} + \beta_2 Size_{fq} + \beta_3 BIGN_{fq} + \beta_4 CF_{fq} + \beta_5 Distress_{fq} \\ + \beta_6 MTB_{fq} + \beta_7 Leverage_{fq} + \varepsilon$$

Panel A: SOX Variable Summary – Coefficient Value, Significance and Adjusted R-Squared:

SOX Variable	Full Sample	Positive Sample	Negative Sample
Q1	-0.018 ***	-0.011 **	-0.015 *
Adj R2	0.257	0.184	0.328
Q2	0.006	0.032 ***	-0.012
Adj R2	0.266	0.311	0.331
Q3	0.013	0.043 ***	-0.013
Adj R2	0.370	0.490	0.330
Q4	-0.030 **	0.009	-0.052 **
Adj R2	0.325	0.366	0.351

Table 4 (continued)

Regressions with Dependent Variable Absolute Value of Performance –Adjusted Abnormal Accruals – Full Sample (No Division in Sample for Extreme Earnings Management)

$$\text{ABSPAAC}_{fq} = \alpha_0 + \beta_1 \text{SOX}_{fq} + \beta_2 \text{Size}_{fq} + \beta_3 \text{BIGN}_{fq} + \beta_4 \text{CF}_{fq} + \beta_5 \text{Distress}_{fq} \\ + \beta_6 \text{MTB}_{fq} + \beta_7 \text{Leverage}_{fq} + \varepsilon$$

Panel B: First Quarter Samples:

Variables^a	Expected Sign	Full Sample	Positive Sample	Negative Sample
SOX	-	-0.018 ***	-0.011 **	-0.015 *
Size	-	-0.001	-0.002	0.003
BIGN	-	-0.028 ***	-0.017 *	-0.039 **
CF	-	-0.125	-0.181 ***	-0.039
Distress	+	0.048 ***	0.016	0.067 **
MTB	+	0.001	0.001 *	0.002
Leverage	-	-0.221 **	-0.018	-0.331 **
Intercept		0.312 ***	0.145	0.402 ***
N		2012	1032	980
F-statistic		10.69	10.09	5.93
P-value		0.000	0.000	0.000
Adjusted R2		0.257	0.184	0.328

Table 4 (continued)
Regressions with Dependent Variable Absolute Value of Performance –Adjusted Abnormal Accruals – Full Sample (No Division in Sample for Extreme Earnings Management)

Panel C: Second Quarter Samples:

Variables^a	Expected Sign	Full Sample	Positive Sample	Negative Sample
SOX	-	0.006	0.032 ***	-0.012
Size	-	-0.004	-0.003	-0.005
BIGN	-	-0.043 ***	-0.034 *	-0.027
CF	-	-0.333 ***	-0.341 ***	-0.212 *
Distress	+	0.033 **	0.013	0.081 ***
MTB	+	0.002	0.001	0.001
Leverage	-	-0.121 *	-0.007	-0.429 ***
Intercept		0.282 ***	0.150 **	0.545 ***
N		2090	1100	990
F-statistic		18.01	18.78	8.60
P-value		0.000	0.000	0.000
Adjusted R2		0.266	0.311	0.331

Table 4 (continued)
Regressions with Dependent Variable Absolute Value of Performance –Adjusted Abnormal Accruals – Full Sample (No Division in Sample for Extreme Earnings Management)

Panel D: Third Quarter Samples:

Variables^a	Expected Sign	Full Sample	Positive Sample	Negative Sample
SOX	-	0.013	0.043 ***	-0.013
Size	-	-0.008 ***	-0.006 **	-0.010 **
BIGN	-	-0.044 **	-0.030 *	-0.077 *
CF	-	-0.316 ***	-0.378 ***	-0.250 ***
Distress	+	0.054 **	0.057	0.058 **
MTB	+	0.000	-0.001	0.001
Leverage	-	-0.250 *	-0.368	-0.252 *
Intercept		0.466 ***	0.454 *	0.543 ***
N		2144	1124	1020
F-statistic		33.58	25.49	12.07
P-value		0.000	0.000	0.000
Adjusted R2		0.370	0.490	0.330

Table 4 (continued)
Regressions with Dependent Variable Absolute Value of Performance –Adjusted Abnormal Accruals – Full Sample (No Division in Sample for Extreme Earnings Management)

Panel E: Fourth Quarter Samples:

Variables^a	Expected Sign	Full Sample	Positive Sample	Negative Sample
SOX	-	-0.030 **	0.009	-0.052 **
Size	-	-0.012 ***	-0.014 ***	-0.004
BIGN	-	-0.071 ***	-0.049 *	-0.090 **
CF	-	-0.275 ***	-0.334 ***	-0.212 ***
Distress	+	0.043 **	0.005	0.074 ***
MTB	+	-0.002 *	-0.002	-0.005
Leverage	-	-0.220 **	-0.001	-0.398 ***
Intercept		0.523 ***	0.283 *	0.687 ***
N		2350	1226	1124
F-statistic		36.29	26.38	18.48
P-value		0.000	0.000	0.000
Adjusted R2		0.325	0.366	0.351

* significant at 10%; ** significant at 5%; *** significant at 1% based on one-tailed (two-tailed) tests for variables whose relation to the dependent variable is (is not) predicted.

^a All variables are defined at Table 3.

Table 5
Sample Descriptive Statistics - Difference in Sample Means
Extreme Earnings Management versus Low Earnings Management Subsamples

Panel A: First Quarter Samples:

Variable^b	Extreme Earnings Management Sample^a (n=804)			Low Earnings Management Sample (n=1,208)			Difference in Sample Means
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	
ABSPAAC	0.129	0.073	0.303	0.033	0.019	0.080	0.096 ***
SOX	0.500	0.500	0.500	0.500	0.500	0.500	0.000
Size	3.591	3.618	2.283	4.775	4.705	2.349	-1.184 ***
BIGN	0.637	1.000	0.481	0.808	1.000	0.394	-0.171 ***
CFO	-0.074	-0.024	0.207	-0.015	0.002	0.088	-0.059 ***
Distress	-2.219	-3.900	7.981	-3.576	-3.960	3.485	1.357 ***
MTB	2.834	1.274	9.923	2.269	1.405	6.838	0.565
Leverage	0.438	0.145	1.309	0.282	0.194	0.582	0.156 ***

Table 5 (continued)
Sample Descriptive Statistics - Difference in Sample Means
Extreme Earnings Management versus Low Earnings Management Subsamples

Panel B: Second Quarter Samples:

Variable^b	Extreme Earnings Management Sample^a (n=836)			Low Earnings Management Sample (n=1,254)			Difference in Sample Means
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	
ABSPAAC	0.219	0.106	0.440	0.061	0.027	0.190	0.158 ***
SOX	0.500	0.500	0.500	0.500	0.500	0.500	0.000
Size	3.810	3.842	2.359	4.891	4.903	2.355	-1.081 ***
BIGN	0.605	1.000	0.489	0.809	1.000	0.394	-0.204 ***
CFO	-0.154	-0.034	0.367	-0.018	0.018	0.161	-0.136 ***
Distress	-1.966	-3.918	8.049	-3.648	-3.995	2.909	1.682 ***
MTB	3.710	1.530	14.146	2.973	1.784	8.511	0.737
Leverage	0.502	0.152	1.430	0.269	0.184	0.494	0.233 ***

Table 5 (continued)
Sample Descriptive Statistics - Difference in Sample Means
Extreme Earnings Management versus Low Earnings Management Subsamples

Panel C: Third Quarter Samples:

Variable^b	Extreme Earnings Management Sample^a (n=856)			Low Earnings Management Sample (n=1,288)			Difference in Sample Means
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	
ABSPAAC	0.366	0.179	0.601	0.090	0.041	0.183	0.276 ***
SOX	0.500	0.500	0.500	0.500	0.500	0.500	0.000
Size	3.572	3.462	2.295	4.868	4.978	2.357	-1.296 ***
BIGN	0.603	1.000	0.490	0.801	1.000	0.399	-0.198 ***
CFO	-0.281	-0.058	0.649	-0.020	0.036	0.314	-0.262 ***
Distress	-1.517	-3.843	9.124	-3.632	-4.000	3.439	2.115 ***
MTB	2.485	1.383	12.923	2.317	1.582	7.204	0.167
Leverage	0.530	0.128	1.483	0.267	0.187	0.548	0.263 ***

Table 5 (continued)
Sample Descriptive Statistics - Difference in Sample Means
Extreme Earnings Management versus Low Earnings Management Subsamples

Panel D: Fourth Quarter Samples:

Variable^b	Extreme Earnings Management Sample^a (n=940)			Low Earnings Management Sample (n=1,410)			Difference in Sample Means
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	
ABSPAAC	0.463	0.237	0.665	0.087	0.053	0.137	0.376 ***
SOX	0.500	0.500	0.500	0.500	0.500	0.500	0.000
Size	3.672	3.583	2.381	5.085	5.238	2.395	-1.414 ***
BIGN	0.579	1.000	0.494	0.804	1.000	0.397	-0.226 ***
CFO	-0.352	-0.073	0.789	0.013	0.073	0.281	-0.365 ***
Distress	-0.586	-3.795	11.010	-3.616	-3.972	2.388	3.030 ***
MTB	3.847	1.822	14.371	2.784	1.936	7.069	1.063 **
Leverage	0.617	0.136	1.633	0.262	0.198	0.387	0.355 ***

Test for differences in the means: * significant at 10%; ** significant at 5%; *** significant at 1% in two-tailed tests.

^a The extreme earnings management sample is identified as the 20% of firms with the highest (positive) and the 20% of firms with the highest (negative) abnormal accruals in each quarter of the pre-SOX period (2001). The mean, median and standard deviation are calculated for each the two groups of companies (extreme earnings management and low earnings management).

^b All variables are defined at Table 3.

Table 6
Sample Descriptive Statistics - Difference in Sample Means
Extreme Earnings Management Subsample – (Pre-SOX versus Post-SOX)

Panel A: First Quarter Samples:

Variable^b	Extreme Earnings Management Sample^a (n=804)			Low Earnings Management Sample (n=1,208)		
	Pre-SOX Mean	Post-SOX Mean	Difference in Sample Means	Pre-SOX Mean	Post-SOX Mean	Difference in Sample Means
ABSPAAC	0.155	0.103	-0.052 ***	0.019	0.047	0.028 ***
Size	3.808	3.375	-0.433 ***	4.948	4.602	-0.346 **
BIGN ^c	0.637	0.637	0.000	0.808	0.808	0.000
CFO	-0.065	-0.084	0.019	-0.009	-0.022	-0.013 ***
Distress	-3.072	-1.366	1.706 ***	-3.837	-3.315	0.522 ***
MTB	3.532	2.136	-1.396 **	2.470	2.069	-0.401
Leverage	0.289	0.588	0.299 ***	0.250	0.313	0.063 *

Table 6 (continued)
Sample Descriptive Statistics - Difference in Sample Means
Extreme Earnings Management Subsample – (Pre-SOX versus Post-SOX)

Panel B: Second Quarter Samples:

Variable^b	Extreme Earnings Management Sample^a (n=836)			Low Earnings Management Sample (n=1,254)		
	Pre-SOX Mean	Post-SOX Mean	Difference in Sample Means	Pre-SOX Mean	Post-SOX Mean	Difference in Sample Means
ABSPAAC	0.259	0.179	-0.080 ***	0.024	0.097	0.073 ***
Size	3.951	3.670	-0.281 *	4.965	4.818	-0.147
BIGN ^c	0.605	0.605	0.000	0.809	0.809	0.000
CFO	-0.156	-0.152	0.004	-0.006	-0.029	-0.023 **
Distress	-2.583	-1.349	1.234 **	-3.830	-3.467	0.363 **
MTB	5.251	2.170	-3.081 ***	3.184	2.762	-0.422
Leverage	0.335	0.668	0.333 ***	0.241	0.298	0.057 **

Table 6 (continued)
Sample Descriptive Statistics - Difference in Sample Means
Extreme Earnings Management Subsample – (Pre-SOX versus Post-SOX)

Panel C: Third Quarter Samples:

Variable^b	Extreme Earnings Management Sample^a (n=856)			Low Earnings Management Sample (n=1,288)		
	Pre-SOX Mean	Post-SOX Mean	Difference in Sample Means	Pre-SOX Mean	Post-SOX Mean	Difference in Sample Means
ABSPAAC	0.414	0.318	-0.096 **	0.036	0.143	0.107 ***
Size	3.380	3.764	0.384 **	4.765	4.971	0.206
BIGN ^c	0.603	0.603	0.000	0.801	0.801	0.000
CFO	-0.276	-0.286	-0.010	-0.004	-0.036	-0.032 *
Distress	-2.311	-0.724	1.587 ***	-3.688	-3.575	0.113
MTB	1.507	3.463	1.956 **	1.645	2.990	1.345 ***
Leverage	0.393	0.668	0.275 ***	0.258	0.277	0.019

Table 6 (continued)
Sample Descriptive Statistics - Difference in Sample Means
Extreme Earnings Management Subsample – (Pre-SOX versus Post-SOX)

Panel D: Fourth Quarter Samples:

Variable^b	Extreme Earnings Management Sample^a (n=940)			Low Earnings Management Sample (n=1,410)		
	Pre-SOX Mean	Post-SOX Mean	Difference in Sample Means	Pre-SOX Mean	Post-SOX Mean	Difference in Sample Means
ABSPAAC	0.562	0.364	-0.198 ***	0.051	0.124	0.073 ***
Size	3.497	3.847	-0.350 **	4.980	5.190	0.210 *
BIGN ^c	0.579	0.579	0.000	0.804	0.804	0.000
CFO	-0.361	-0.342	0.019	0.022	0.005	-0.017 **
Distress	-1.419	0.247	1.666 **	-3.666	-3.357	0.101
MTB	2.865	4.829	1.964 **	2.421	3.147	0.726 *
Leverage	0.461	0.773	0.312 ***	0.248	0.275	0.027

Test for differences in the means: * significant at 10%; ** significant at 5%; *** significant at 1% in two-tailed tests.

^a The extreme earnings management sample is identified as the 20% of firms with the highest (positive) and the 20% of firms with the highest (negative) abnormal accruals in each quarter of the pre-SOX period (2001). The mean, median and standard deviation are calculated for each the two groups of companies (extreme earnings management and low earnings management).

^b All variables are defined at Table 3.

^c It is reasonable that there is no change in the mean for BIGN as all firms in my sample had the same auditor in both time periods.

Table 7
Regressions with Dependent Variable Absolute Value of Performance –Adjusted Abnormal Accruals
Extreme Earnings Management Subsample

$$ABSPAAC_{fq} = \alpha_0 + \beta_1 SOX_{fq} + \beta_2 Size_{fq} + \beta_3 BIGN_{fq} + \beta_4 CF_{fq} + \beta_5 Distress_{fq} + \beta_6 MTB_{fq} + \beta_7 Leverage_{fq} + \varepsilon$$

Panel A: SOX Variable Summary – Coefficient Value, Significance and Adjusted R-Squared:

SOX Variable	Extreme Earnings Management Sample ^a			Low Earnings Management Sample		
	Full Sample	Positive Sample	Negative Sample	Full Sample	Positive Sample	Negative Sample
Q1	-0.070 ***	-0.054 ***	-0.062 ***	0.019 ***	0.017 ***	0.022 ***
Adj R2	0.267	0.241	0.349	0.266	0.351	0.147
Q2	-0.079 ***	-0.030 *	-0.113 ***	0.064 ***	0.070 ***	0.058 ***
Adj R2	0.273	0.364	0.348	0.200	0.208	0.240
Q3	-0.118 ***	-0.038	-0.182 ***	0.101 ***	0.096 ***	0.101 ***
Adj R2	0.393	0.435	0.388	0.393	0.522	0.312
Q4	-0.184 ***	-0.072 **	-0.260 ***	0.074 ***	0.068 ***	0.078 ***
Adj R2	0.309	0.349	0.351	0.138	0.181	0.129

Table 7 (continued)
Regressions with Dependent Variable Absolute Value of Performance –Adjusted Abnormal Accruals
Extreme Earnings Management Subsample

$$ABSPAAC_{fq} = \alpha_0 + \beta_1 SOX_{fq} + \beta_2 Size_{fq} + \beta_3 BIGN_{fq} + \beta_4 CF_{fq} + \beta_5 Distress_{fq} + \beta_6 MTB_{fq} + \beta_7 Leverage_{fq} + \varepsilon$$

Panel B: First Quarter Samples:

Variables ^b	Extreme Earnings Management Sample ^a (n=804)				Low Earnings Management Sample (n=1,208)		
	Expected Sign	Full Sample	Positive Sample	Negative Sample	Full Sample	Positive Sample	Negative Sample
SOX	-	-0.070 ***	-0.054 ***	-0.062 ***	0.019 ***	0.017 ***	0.022 ***
Size	-	0.007	0.001	0.012	0.000	0.000	0.000
BIGN	-	-0.044 **	-0.012	-0.061 *	-0.008	0.003	-0.021 ***
CF	-	-0.183	-0.206 **	0.094	-0.114 **	-0.127 ***	-0.087 *
Distress	+	0.049 **	-0.012 **	0.069 **	0.040 **	0.044 *	0.031 **
MTB	+	0.002	0.001 *	0.002	0.000	0.000	0.000
Leverage	-	-0.200 *	0.207 **	-0.317 **	-0.229 **	-0.246 *	-0.177 **
Intercept		0.357 ***	0.024	0.440 ***	0.238 **	0.250 *	0.195 ***
N		804	412	392	1208	620	588
F-statistic		9.04	7.96	5.25	13.27	7.60	6.29
P-value		0.000	0.000	0.000	0.000	0.000	0.000
Adjusted R2		0.267	0.241	0.349	0.266	0.351	0.147

Table 7 (continued)
Regressions with Dependent Variable Absolute Value of Performance –Adjusted Abnormal Accruals
Extreme Earnings Management Subsample

$$ABSPAAC_{fq} = \alpha_0 + \beta_1 SOX_{fq} + \beta_2 Size_{fq} + \beta_3 BIGN_{fq} + \beta_4 CF_{fq} + \beta_5 Distress_{fq} + \beta_6 MTB_{fq} + \beta_7 Leverage_{fq} + \varepsilon$$

Panel C: Second Quarter Samples:

Variables ^b	Expected Sign	Extreme Earnings Management Sample ^a (n=836)			Low Earnings Management Sample (n=1,254)		
		Full Sample	Positive Sample	Negative Sample	Full Sample	Positive Sample	Negative Sample
SOX	-	-0.079 ***	-0.030 *	-0.113 ***	0.064 ***	0.070 ***	0.058 ***
Size	-	0.002	-0.001	0.007	-0.007 **	-0.002	-0.012 **
BIGN	-	-0.082 ***	-0.056 **	-0.075	0.019	0.015	0.026
CF	-	-0.350 ***	-0.311 ***	-0.299 *	-0.114	-0.252 ***	0.124
Distress	+	0.029 **	0.012	0.076 ***	0.045 **	0.033	0.059 *
MTB	+	0.001	0.000	0.000	0.003	0.003	0.000
Leverage	-	-0.100	0.017	-0.411 ***	-0.168 **	-0.143	-0.223 *
Intercept		0.353 ***	0.225 **	0.593 ***	0.246 **	0.167	0.341 *
N		836	440	396	1254	660	594
F-statistic		13.43	15.12	7.18	13.81	10.92	11.40
P-value		0.000	0.000	0.000	0.000	0.000	0.000
Adjusted R2		0.273	0.364	0.348	0.200	0.208	0.240

Table 7 (continued)
Regressions with Dependent Variable Absolute Value of Performance –Adjusted Abnormal Accruals
Extreme Earnings Management Subsample

$$ABSPAAC_{fq} = \alpha_0 + \beta_1 SOX_{fq} + \beta_2 Size_{fq} + \beta_3 BIGN_{fq} + \beta_4 CF_{fq} + \beta_5 Distress_{fq} + \beta_6 MTB_{fq} + \beta_7 Leverage_{fq} + \varepsilon$$

Panel D: Third Quarter Samples:

Variables ^b	Extreme Earnings Management Sample ^a (n=856)				Low Earnings Management Sample (n=1,288)		
	Expected Sign	Full Sample	Positive Sample	Negative Sample	Full Sample	Positive Sample	Negative Sample
SOX	-	-0.118 ***	-0.038	-0.182 ***	0.101 ***	0.096 ***	0.101 ***
Size	-	-0.005	-0.016 *	0.005	-0.002	0.004	-0.007 **
BIGN	-	-0.056 *	-0.007	-0.138 *	-0.017 *	-0.022 *	-0.011
CF	-	-0.246 ***	-0.330 ***	-0.249 **	-0.325 ***	-0.394 ***	-0.148 **
Distress	+	0.092 ***	0.060	0.097 ***	-0.022 ***	0.037 **	-0.015 **
MTB	+	0.000	-0.001	0.002	-0.003 **	-0.003 *	-0.002
Leverage	-	-0.455 ***	-0.389	-0.472 ***	0.135 ***	-0.217 **	0.130 ***
Intercept		0.786 ***	0.597 *	0.882 ***	-0.056	0.235	-0.011
N		856	448	408	1288	676	612
F-statistic		25.94	16.73	12.38	34.24	24.03	21.75
P-value		0.000	0.000	0.000	0.000	0.000	0.000
Adjusted R2		0.393	0.435	0.388	0.393	0.522	0.312

Table 7 (continued)
Regressions with Dependent Variable Absolute Value of Performance –Adjusted Abnormal Accruals
Extreme Earnings Management Subsample

$$ABSPAAC_{fq} = \alpha_0 + \beta_1 SOX_{fq} + \beta_2 Size_{fq} + \beta_3 BIGN_{fq} + \beta_4 CF_{fq} + \beta_5 Distress_{fq} + \beta_6 MTB_{fq} + \beta_7 Leverage_{fq} + \varepsilon$$

Panel E: Fourth Quarter Samples:

Variables ^b	Expected Sign	Extreme Earnings Management Sample ^a (n=940)			Low Earnings Management Sample (n=1,410)		
		Full Sample	Positive Sample	Negative Sample	Full Sample	Positive Sample	Negative Sample
SOX	-	-0.184 ***	-0.072 **	-0.260 ***	0.074 ***	0.068 ***	0.078 ***
Size	-	-0.010	-0.021 **	0.015	-0.008 ***	-0.005 **	-0.009 ***
BIGN	-	-0.104 **	-0.037	-0.199 **	0.003	-0.010	0.010
CF	-	-0.253 ***	-0.323 ***	-0.197 ***	-0.081 **	-0.126 ***	-0.051 *
Distress	+	0.040 **	0.001	0.070 ***	0.005	0.004	0.001
MTB	+	-0.004 **	-0.003	-0.007 **	0.000	-0.001	0.001
Leverage	-	-0.203 *	0.040	-0.380 ***	-0.014	-0.054	0.034
Intercept		0.727 ***	0.417 ***	0.916 ***	0.111 ***	0.116	0.081 **
N		940	490	450	1410	736	674
F-statistic		27.22	18.63	14.81	17.23	9.21	9.43
P-value		0.000	0.000	0.000	0.000	0.000	0.000
Adjusted R2		0.309	0.349	0.351	0.138	0.181	0.129

Table 7 (continued)
Regressions with Dependent Variable Absolute Value of Performance –Adjusted Abnormal Accruals
Extreme Earnings Management Subsample

* significant at 10%; ** significant at 5%; *** significant at 1% based on one-tailed (two-tailed) tests for variables whose relation to the dependent variable is (is not) predicted.

^a The extreme earnings management sample is identified as the 20% of firms with the highest (positive) and the 20% of firms with the lowest (negative) abnormal accruals in each quarter of the pre-SOX period (2001).

^b All variables are defined at Table 3.

Table 8
Panel Regression (Fixed Effects) Dependent Variable Absolute Value of Performance –Adj. Abnormal Accruals
Extreme Earnings Management Subsample

$$ABSPAAC_{fq} = \alpha_0 + \beta_1 SOX_{fq} + \beta_2 Size_{fq} + \beta_3 BIGN_{fq} + \beta_4 CF_{fq} + \beta_5 Distress_{fq} + \beta_6 MTB_{fq} + \beta_7 Leverage_{fq} + \varepsilon$$

Panel A: SOX Variable Summary – Coefficient Value, Significance and Adjusted R-Squared:

SOX Variable	Extreme Earnings Management Sample ^a			Low Earnings Management Sample		
	Full Sample	Positive Sample	Negative Sample	Full Sample	Positive Sample	Negative Sample
Q1	-0.056 ***	-0.069 ***	-0.034 *	0.019 ***	0.017 **	0.022 ***
Adj R2	0.170	0.213	0.192	0.179	0.208	0.079
Q2	-0.066 ***	-0.021	-0.121 ***	0.064 ***	0.070 ***	0.059 ***
Adj R2	0.196	0.321	0.228	0.152	0.148	0.205
Q3	-0.116 ***	-0.028	-0.184 ***	0.094 ***	0.089 ***	0.095 ***
Adj R2	0.379	0.425	0.380	0.340	0.481	0.271
Q4	-0.191 ***	-0.075 *	-0.273 ***	0.075 ***	0.071 ***	0.079 ***
Adj R2	0.298	0.335	0.331	0.061	0.133	0.053

Table 8 (continued)
Panel Regression (Fixed Effects) Dependent Variable Absolute Value of Performance –Adj. Abnormal Accruals
Extreme Earnings Management Subsample

$$ABSPAAC_{fq} = \alpha_0 + \beta_1 SOX_{fq} + \beta_2 Size_{fq} + \beta_3 BIGN_{fq} + \beta_4 CF_{fq} + \beta_5 Distress_{fq} + \beta_6 MTB_{fq} + \beta_7 Leverage_{fq} + \varepsilon$$

Panel B: First Quarter Samples:

Variables ^b	Extreme Earnings Management Sample ^a				Low Earnings Management Sample		
	Expected Sign	Full Sample (n=804)	Positive Sample (n=412)	Negative Sample (n=392)	Full Sample (n=1208)	Positive Sample (n=620)	Negative Sample (n=588)
SOX	-	-0.056 ***	-0.069 ***	-0.034 *	0.019 ***	0.017 **	0.022 ***
Size	-	0.044 **	-0.022 *	0.081 *	0.012 **	0.019 **	0.008
CF	-	0.169	-0.117	0.339	-0.005	0.120	-0.017
Distress	+	0.055 **	-0.015	0.075 ***	0.071 ***	0.076 **	0.060 **
MTB	+	0.002	0.002	0.000	0.000	0.000	0.001
Leverage	-	-0.213 *	0.256	-0.313 **	-0.339 ***	-0.390 **	-0.334 **
Intercept		0.220 *	0.088	0.168	0.326 **	0.324 **	0.287 **
F-statistic		9.78 ***	6.66 ***	5.68 ***	10.31 ***	7.64 ***	5.30 ***
Within R2		0.259	0.162	0.391	0.389	0.505	0.226
Between R2		0.119	0.279	0.101	0.096	0.112	0.019
Overall R2		0.170	0.213	0.192	0.179	0.208	0.079

Table 8 (continued)
Panel Regression (Fixed Effects) Dependent Variable Absolute Value of Performance –Adj. Abnormal Accruals
Extreme Earnings Management Subsample

$$ABSPAAC_{fq} = \alpha_0 + \beta_1 SOX_{fq} + \beta_2 Size_{fq} + \beta_3 BIGN_{fq} + \beta_4 CF_{fq} + \beta_5 Distress_{fq} + \beta_6 MTB_{fq} + \beta_7 Leverage_{fq} + \varepsilon$$

Panel C: Second Quarter Samples:

Variables ^b	Extreme Earnings Management Sample ^a				Low Earnings Management Sample		
	Expected Sign	Full Sample (n=836)	Positive Sample (n=440)	Negative Sample (n=396)	Full Sample (n=1254)	Positive Sample (n=660)	Negative Sample (n=594)
SOX	-	-0.066 ***	-0.021	-0.121 ***	0.064 ***	0.070 ***	0.059 ***
Size	-	0.010	0.014	0.018	0.007	0.023	-0.008
CF	-	-0.364 ***	-0.308 ***	-0.467 **	0.100	-0.305 **	0.541
Distress	+	0.006	0.015	0.020	0.060 **	0.051	0.073 *
MTB	+	0.002	0.001	0.004	0.002	0.003	-0.001
Leverage	-	-0.031	0.010	-0.130	-0.163 *	-0.209	-0.185
Intercept		0.175	0.137	0.256	0.254	0.141	0.385
F-statistic		7.32 ***	4.88 ***	3.63 ***	11.66 ***	10.88 ***	6.12 ***
Within R2		0.105	0.175	0.141	0.252	0.233	0.341
Between R2		0.244	0.414	0.273	0.087	0.101	0.134
Overall R2		0.196	0.321	0.228	0.152	0.148	0.205

Table 8 (continued)
Panel Regression (Fixed Effects) Dependent Variable Absolute Value of Performance –Adj. Abnormal Accruals
Extreme Earnings Management Subsample

$$ABSPAAC_{fq} = \alpha_0 + \beta_1 SOX_{fq} + \beta_2 Size_{fq} + \beta_3 BIGN_{fq} + \beta_4 CF_{fq} + \beta_5 Distress_{fq} + \beta_6 MTB_{fq} + \beta_7 Leverage_{fq} + \varepsilon$$

Panel D: Third Quarter Samples:

Variables ^b	Extreme Earnings Management Sample ^a				Low Earnings Management Sample		
	Expected Sign	Full Sample (n=856)	Positive Sample (n=448)	Negative Sample (n=408)	Full Sample (n=1288)	Positive Sample (n=676)	Negative Sample (n=612)
SOX	-	-0.116 ***	-0.028	-0.184 ***	0.094 ***	0.089 ***	0.095 ***
Size	-	-0.007	-0.018	0.002	0.010	0.017	-0.014
CF	-	-0.267 ***	-0.354 ***	-0.221 *	-0.386 ***	-0.413 ***	-0.169 *
Distress	+	0.071 **	0.063	0.078 **	-0.039 ***	0.089 **	-0.026 ***
MTB	+	0.002	0.000	0.002	-0.002	-0.003	0.000
Leverage	-	-0.347 *	-0.472	-0.363 **	0.306 ***	-0.556 **	0.265 ***
Intercept		0.662 ***	0.629	0.731 ***	-0.235 ***	0.436 *	-0.059
F-statistic		8.29 ***	8.95 ***	4.59 ***	37.08 ***	19.34 ***	29.33 ***
Within R2		0.189	0.230	0.213	0.425	0.545	0.383
Between R2		0.467	0.549	0.450	0.292	0.427	0.242
Overall R2		0.379	0.425	0.380	0.340	0.481	0.271

Table 8 (continued)
Panel Regression (Fixed Effects) Dependent Variable Absolute Value of Performance –Adj. Abnormal Accruals
Extreme Earnings Management Subsample

$$ABSPAAC_{fq} = \alpha_0 + \beta_1 SOX_{fq} + \beta_2 Size_{fq} + \beta_3 BIGN_{fq} + \beta_4 CF_{fq} + \beta_5 Distress_{fq} + \beta_6 MTB_{fq} + \beta_7 Leverage_{fq} + \varepsilon$$

Panel E: Fourth Quarter Samples:

Variables ^b	Extreme Earnings Management Sample ^a				Low Earnings Management Sample		
	Expected Sign	Full Sample (n=940)	Positive Sample (n=490)	Negative Sample (n=450)	Full Sample (n=1410)	Positive Sample (n=736)	Negative Sample (n=674)
SOX	-	-0.191 ***	-0.075 *	-0.273 ***	0.075 ***	0.071 ***	0.079 ***
Size	-	-0.017	-0.015	0.005	-0.011	-0.015 *	-0.015
CF	-	-0.209 **	-0.403 ***	-0.121	0.074	-0.115	0.180 *
Distress	+	0.025 *	-0.007	0.047 **	0.003	-0.020	0.005
MTB	+	-0.001	0.000	-0.006	-0.001	-0.001	0.002
Leverage	-	-0.116	0.116	-0.231 **	0.054	0.020	0.074
Intercept		0.635 ***	0.317 *	0.765 ***	0.101 *	0.052	0.108 *
F-statistic		8.52 ***	6.62 ***	5.41 ***	21.04 ***	10.00 ***	13.76 ***
Within R2		0.133	0.173	0.192	0.163	0.167	0.247
Between R2		0.402	0.445	0.426	0.005	0.115	0.000
Overall R2		0.298	0.335	0.331	0.061	0.133	0.053

Table 8 (continued)
Panel Regression (Fixed Effects) Dependent Variable Absolute Value of Performance –Adj. Abnormal Accruals
Extreme Earnings Management Subsample

* significant at 10%; ** significant at 5%; *** significant at 1% based on one-tailed (two-tailed) tests for variables whose relation to the dependent variable is (is not) predicted.

^a The extreme earnings management sample is identified as the 20% of firms with the highest (positive) and the 20% of firms with the lowest (negative) abnormal accruals in each quarter of the pre-SOX period (2001).

^b All variables are defined at Table 3. The variable BIGN is dropped from this regression as only firms who did not change auditors are included in the sample.

Appendix 4

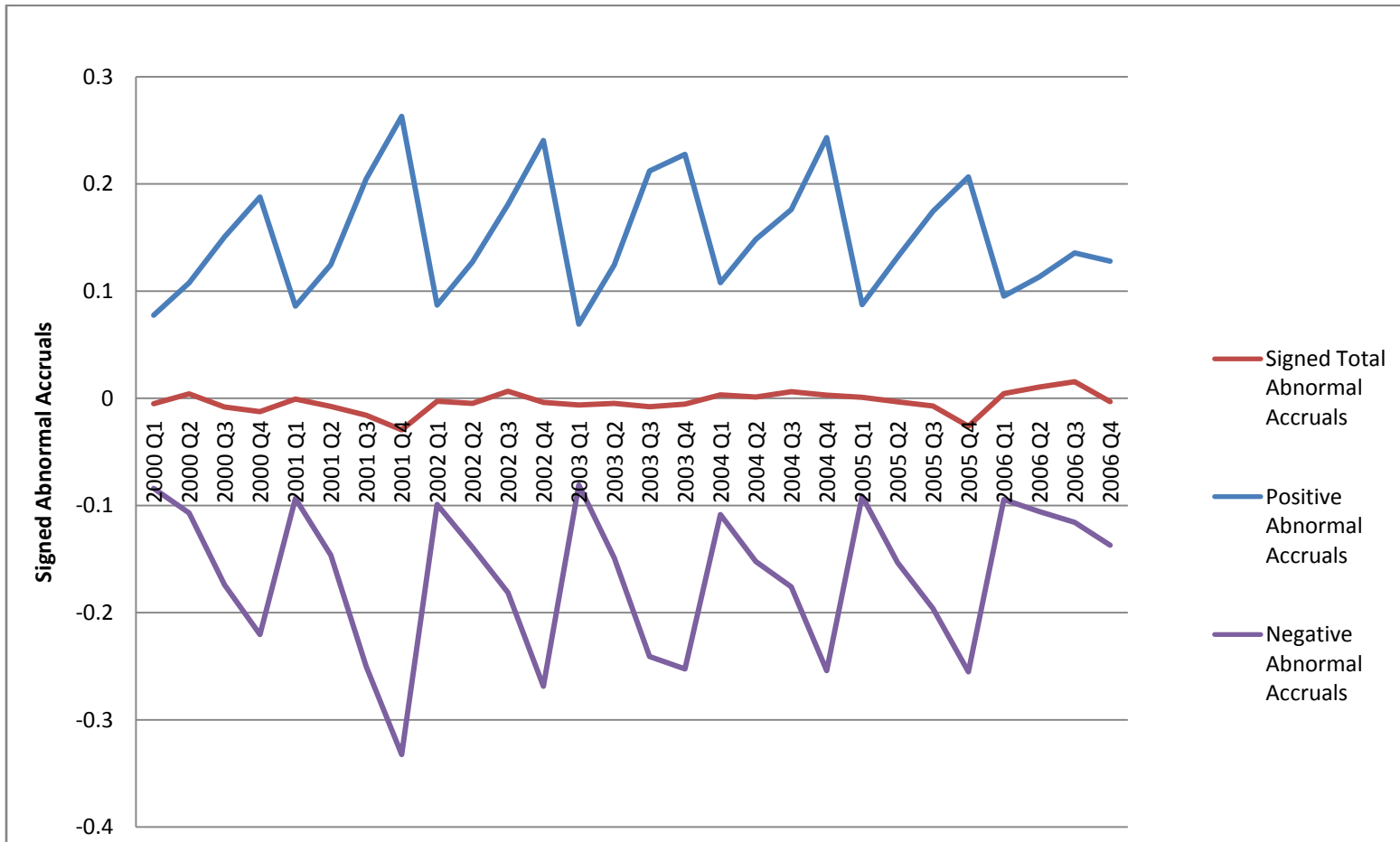


Figure 1
Quarterly Signed Performance-Adjusted Abnormal Accruals From 2000 to 2006

Vita

Stacy Mastrolia is a fifth-year doctoral student with research interests in audit and corporate governance. She has several research projects underway with faculty members at the University of Tennessee and at other universities. As a Ph.D. student, Stacy has taught 3 different undergraduate accounting classes and served as a business coach to undergraduate students in the capstone business class. She has also been awarded the Graduate Teaching Award from the College of Business at the University of Tennessee, a Citation of Professional Promise from the Chancellor of the University of Tennessee, and the Graduate Teaching Award from the Chancellor of the University of Tennessee. Stacy's teaching interests include auditing and financial accounting. Stacy has earned a B.S. degree in Accounting from Rutgers University, an M.B.A from Georgia State University and is a licensed C.P.A. in New Jersey. Stacy has extensive professional experience in Big 4 public accounting, manufacturing and international operations. She has accepted a position as an Assistant Professor at Bucknell University starting in the fall of 2009.