International Journal of Auditing and Accounting Studies
ISSN: 2582-3272 • Volume 7; Number 2; 2025 : pp. 153-176
https://DOI:10.47509/IJAAS.2025.v07i02.02

ARF INDIA
Academic Open Access Publishing
www.arfjournals.com

Pricing and Persistence of Discretionary Accrual in The Post-Sox Era: U.S. Evidence

Rajat Bhandari[1*] and Shraddha Bhandari[2]

[1]*Senior Data Quality Engineer, Optum Services Inc., Minnetonka, MN, USA.*
E-mail: rajatb001@gmail.com / rajat.bhandari@optum.com
[2]*Chief Financial Officer, Bhageshwor Sugar and Chemical Industries, Kathmandu, Nepal.*
E-mail: shraddhabhandari2008@gmail.com
(*Corresponding author)

Received: 20 March 2025; Revised: 2 & 6 April Accepted: 15 April 2025; Publication: 12 August 2025

Abstract: This study focuses on two related research questions. First, using Sloan's (1996) model, we investigate the effect of the Sarbanes-Oxley Act (SOX) on the persistence of accruals. Specifically, we examine whether SOX has improved the persistence of accruals. Second, we assess the impact of SOX on the pricing of discretionary accruals, investigating whether the overpricing of discretionary accruals has decreased in the post-SOX period. The post-SOX accounting literature suggests that SOX acts as a deterrent to accrual management. An increased deterrent to accrual management is likely to improve the persistence of accruals and should also reduce the overpricing of discretionary accruals. Consistent with our expectations, we find that SOX has improved the persistence of accruals and has decreased the overpricing of discretionary accruals. Our findings suggest a key benefit of SOX, its role in improving persistence of accrual and reducing the mispricing of discretionary accruals, thereby enhancing both financial reporting reliability and market efficiency. These results have important implications for regulators, standard setters, auditors, audit committees and financial statement users by offering evidence that SOX delivers meaningful benefits that may offset its widely debated costs.

Keywords: Discretionary Accruals, Pricing of Accruals, Persistence of Accruals, Sarbanes-Oxley Act.

To cite this paper:
Rajat Bhandari & Shraddha Bhandari (2025). Pricing and Persistence of Discretionary Accrual in the Post-Sox Era: U.S. Evidence. *International Journal of Auditing and Accounting Studies*. 7(2), 153-176. *https://DOI:10.47509/IJAAS.2025.v07i02.02*

1. INTRODUCTION

U.S. Congress approved the historic Sarbanes-Oxley Act (henceforth referred to as SOX) in 2002 in reaction to a number of corporate accounting scandals, including those involving Tyco, Enron, and WorldCom. The act's purpose was to improve the accuracy and dependability of corporate disclosures to regain investor confidence. SOX introduced significant changes to the financial reporting environment. Managers are now directly accountable for the financial information that a firm release. Specifically, CEOs and financial officers are required to certify periodic financial reports and are subject to criminal penalties for false certifications.

In this study, we aim to address two research questions. First, did accrual persistence improve in the post-2002 period (hereafter referred to as the post-SOX period)? Second, if accrual persistence improved, did this improvement reduce the overpricing of discretionary accruals, as documented in Xie (2001)? In our study, persistence refers to the extent to which discretionary accruals remain consistent and continue to affect earnings in future periods and pricing refers to how the stock market values or reacts to discretionary accruals when forming stock prices (Sloan, 1996; Xie, 2001).

Prior accounting literature documents that managers engage in earnings management primarily by manipulating the accrual component of earnings. Dechow *et al.* (1995) examine a sample of earnings manipulations subject to SEC enforcement actions and find that earnings manipulations are primarily attributable to accruals that reverse in the subsequent year. However, several recent papers suggest that managers' preference for accrual-based earnings management has decreased in the post-SOX period, shifting instead toward real earnings management. Graham *et al.* (2005) survey 401 financial executives and find that executives prefer to use real earnings management rather than accrual-based earnings management. This preference is largely driven by the perception that real earnings management is less likely to be detected by auditors and regulators, and because it involves actual business activities, such as delaying R&D, cutting discretionary expenses, or accelerating sales that have a direct impact on cash flows.

Graham *et al.* (2005) acknowledge that the aftermath of accounting scandals at Enron and WorldCom, along with the certification requirements imposed by SOX, may have changed managers' preferences regarding the mix

of accounting versus real actions to manage earnings. Wilson (2012) also finds that managers increasingly engage in real earnings management to avoid the costs associated with accrual management under SOX. Using a large sample of firms from 1987 to 2005, Cohen *et al.* (2008) document that accrual-based earnings management increased steadily from 1987 to 2002 but declined significantly thereafter, suggesting that firms, on average, have decreased accrual management in the post-SOX period. This forms the basis for our first hypothesis in Section 2: accrual persistence improved in the post-SOX period.

Our first hypothesis is closely related to studies by Chambers and Payne (2011) and Kao *et al.* (2010). These studies also investigate post-SOX accrual persistence and find that it improved following SOX. However, our study differs from Chambers and Payne (2011) in that we employ a different research method and use a larger sample of firms, whereas Chambers and Payne's (2011) sample is limited to those audited by Big 6 auditing firms. Kao *et al.* (2010) also use a relatively small sample and a narrow time window. Additionally, Kao *et al.* (2010) report that the persistence of both cash flow and accrual components of earnings improved in the post-SOX period. However, this finding is debatable, as much of the post-SOX earnings management literature suggests that managers have shifted from accrual management to real earnings management, thereby improving the persistence of accruals at the cost of cash flow persistence. By using a large sample of firm-year observations over a broader time window, our finding that accrual persistence improved after SOX not only validates prior research but also extends its scope.

Furthermore, our study expands on Chambers and Payne (2011) and Kao *et al.* (2010) by investigating whether the improvement in accrual persistence reduced the overpricing of discretionary accruals, as documented by Xie (2001). To our knowledge, no prior studies have examined the implications of SOX on the pricing of discretionary accruals.

Our second hypothesis that the overpricing of discretionary accruals has declined in the post-SOX period is most closely related to studies by Subramanyam (1996) and Xie (2001). Prior research on discretionary accruals, such as Subramanyam (1996), provides empirical evidence that the market prices discretionary accruals. Xie (2001) extends this research by demonstrating that the market not only prices but also overprices abnormal accruals, attributing this overpricing to an overestimation of accrual persistence. Our study extends

Xie (2001) by investigating whether the overpricing of accruals has decreased in the post-SOX period. This forms the basis for our second hypothesis in Section 2.

Our findings contribute to the ongoing debate regarding the benefits and costs of SOX, particularly its effect on accrual quality. In the corporate world, SOX has been criticized for being expensive to implement, with many arguing that it imposes substantial costs on firms without delivering commensurate benefits. Much of the existing academic research on SOX focuses on its costs (Borgia & Seigel, 2008; Krishnan *et al.*, 2008; Leuz *et al.*, 2008; Engel *et al.*, 2007; Romano, 2005; Solomon & Bryan-Low, 2004; Ribstein, 2002), with relatively little emphasis on its benefits. One often-overlooked benefit of SOX is its potential to improve accrual quality, widely measured as accrual persistence in the accounting literature.

Additionally, our findings contribute to the literature on market efficiency. In recent years, concerns have been raised about stock market efficiency, as there is evidence that shares are often mispriced relative to their intrinsic value. Chelikani and D'Souza (2011) examine stock mispricing of acquiring firms in mergers and acquisitions before and after SOX and find that SOX has improved market efficiency by bringing market prices closer to intrinsic values. Our study extends this literature by demonstrating that the decrease in accrual mispricing following SOX reflects improved market efficiency, as it brings the market price of accruals closer to their intrinsic value.

Understanding why managers make specific accrual choices is a fundamental question in accounting literature, explored by Subramanyam (1996), Xie (2001), and Bernard & Skinner (1996). Regulations like SOX can influence managerial incentives in unpredictable ways. Agency theory describes the inherent conflict between shareholders and managers, as individuals tend to act in their own best interest rather than maximizing shareholder value (Bhandari & Bhandari, 2024; Jensen & Meckling, 1976; Hope & Thomas, 2008). Our findings contribute to this literature by showing that changes in accrual persistence and pricing are a consequence of shifts in managerial incentives following SOX.

Our results also have important implications for regulators, standard setters, public companies, financial statement users, and analysts. Regulators and standard setters need to understand the areas where SOX has been effective

to evaluate and maintain the regulation. By highlighting the benefits of SOX, our findings may influence public perception and corporate attitudes toward the regulation. Financial statement users and analysts can use our findings to make more informed financial decisions, particularly regarding earnings quality. Understanding how managers make accrual choices enhances analysts' ability to interpret earnings figures more accurately.

This study makes a significant contribution to the literature on audit, financial reporting quality and earnings management by providing empirical evidence on the impact of the Sarbanes-Oxley Act (SOX) on the persistence and pricing of discretionary accruals (Abdelwahed *et al.*, 2023; Joshi, 2025; Joshi & Wakil, 2004; Ismail *et al.*, 2024; Kwanbo, 2020). While prior research has primarily focused on the costs of SOX compliance, this study highlights an often-overlooked benefit—enhanced accrual quality through improved accrual persistence.

The motivation for this study stems from the ongoing debate over the costs and benefits of SOX, particularly regarding its impact on financial reporting quality and market efficiency. While SOX has been widely criticized for imposing high compliance costs on firms, its potential to enhance accrual quality, measured by the persistence of discretionary accruals, remains underexplored. Given prior evidence that managers shifted from accrual-based to real earnings management following SOX, we seek to empirically test whether this shift improved the persistence of accruals. Furthermore, we investigate whether improved accrual persistence has reduced the overpricing of discretionary accruals in equity markets, an issue previously raised by Xie (2001). By addressing these questions, our study aims to fill a gap in literature and offer new insights into the unintended benefits of SOX, thereby contributing to academic research, regulatory evaluation, and investor decision-making.

The remainder of this paper is organized as follows. Section 2 provides background literature and develops our hypotheses. Section 3 outlines our research methodology. Section 4 presents our sample and empirical results. Section 5 discusses conclusions and implications.

2. RELATED LITERATURE AND HYPOTHESES DEVELOPMENT

Pre-SOX earnings management literature, such as Sloan (1996), suggests that accruals are more susceptible to managerial bias, which weakens the association

between current accruals and next period's net income. Operating cash flows, another component of earnings, result from continuing operations and are therefore less likely to reverse and less subject to managerial bias. Sloan (1996) argues that the accrual component of earnings is less persistent than the cash flow component. In a large sample of 40,769 annual earnings announcements from 1962 to 1991, Sloan (1996) finds that net income is more strongly associated with the operating cash flow component than with the accrual component of earnings, supporting the argument of greater cash flow persistence. Other studies after Slong (1996) also provide similar findings (Čupić *et al*., 2023; Farshadfa & Monem, 2019; Mostafa & Dixon, 2024).

Recent accounting literature provides empirical evidence that managers' preference for accrual-based earnings management has declined in the post-SOX period, shifting instead toward real earnings management (Mason & Morton, 2020; Pincus *et al*., 2022). Graham *et al*. (2005) survey 401 financial executives and find that executives prefer to use real earnings management rather than accrual-based management. They acknowledge that the aftermath of accounting scandals at Enron and WorldCom, along with the certification requirements imposed by SOX, may have influenced managers' choices between accounting-based and real actions to manage earnings. Prior studies document that managers engage in real earnings management to avoid the costs associated with accrual management under SOX (Attia *et al*., Habib *et al*., 2022; Srivastava, 2019; Wilson, 2012). Similarly, Cohen *et al*. (2008) document that accrual-based earnings management increased steadily from 1987 to 2002 but then declined significantly post-SOX, suggesting that, on average, firms reduced earnings management after the enactment of SOX. Supporting this perspective, Huang *et al*. (2020) find an increase in real earnings management following the threat of litigation, aligning with the notion that managers shift toward real methods of managing earnings in response to heightened regulatory scrutiny.

An important step toward corporate governance reform is increasing the proportion of outside and independent directors on corporate boards and committees. Outside directors, being independent from management, are expected to challenge managerial decisions that do not align with shareholders' interests. Prior studies find that the likelihood of managers using income-increasing discretionary accruals to avoid reporting losses or earnings reductions

is negatively related to the proportion of independent directors on board (Chen *et al.*, 2020; Mwaungulu *et al.*, 2023; Peasnell & Young, 2005). These studies also find that the probability of abnormal accruals being large enough to turn a loss into a profit or to ensure that profit does not decline - is significantly lower in firms with a high proportion of outside board members.

The SOX Act introduced new accountability standards for boards of U.S. public companies, imposing severe penalties, including large fines and prison sentences, for accounting fraud. The law requires companies listed on major stock exchanges to have a majority of independent directors. A growing body of literature suggests that the monitoring quality of U.S. boards has improved post-SOX (Linck *et al.*, 2009; Jiraporn *et al.*, 2009; Tosun & Senbet, 2020). Consequently, it is reasonable to argue that the integrity of accruals has improved in the post-SOX period, partly due to enhanced board monitoring quality.

These arguments collectively suggest that SOX has served as a strong deterrent to accrual management. Therefore, it is reasonable to conclude that accrual persistence has improved in the post-SOX period. This forms the basis for our first hypothesis: accrual persistence improved after SOX.

Hypothesis 1: *SOX significantly increases the persistence of accruals.*

There are two components of accruals: accruals that reflect economic fundamentals (non-discretionary accruals) and accruals that represent managerial choices (discretionary accruals) (Abad *et al.*, 2018; Jones, 1991). The cross-sectional version of the Jones (1991) model estimates non-discretionary accruals as a function of the level of property, plant, and equipment (PPE) and changes in revenue (ΔREV) by estimating the following model. The estimation of non-discretionary and discretionary accruals is presented in Section 3.2.

Management exercises some level of discretion in determining discretionary accruals, such as bad debt expense and warranty costs. Prior research on discretionary accruals provides evidence that the market prices these accruals (Moscariello *et al.*, 2020; Pham *et al.*, 2019; Subramanyam, 1996). Xie (2001) extends Subramanyam (1996) by demonstrating that the market not only prices but also overprices discretionary accruals. Xie (2001) further suggests that the overpricing of accruals, as discussed in Sloan (1996), is largely attributable to discretionary accruals. The study attributes this overpricing to the market's overestimation of accrual persistence.

Since our study hypothesizes that accrual persistence improves significantly in the post-SOX period, it is reasonable to argue that SOX reduces the overpricing of accruals, provided that accrual persistence has indeed improved post-SOX. This forms the basis for our second hypothesis: SOX reduces the overpricing of discretionary accruals.

Hypothesis 2: *SOX significantly reduces the over-pricing of accruals.*

3. RESEARCH DESIGN

Our hypotheses require two distinct research designs to test two related research questions. First, in Section 3.1, we develop a persistence model to address our first hypothesis. Second, in Section 3.2, we develop a pricing model to address our second hypothesis.

3.1. Persistence Model

This research design addresses the first research question of this paper: does the persistence of accruals improve in the post-SOX period? This issue is examined using Equation (3) below, which analyzes the effect of SOX on accrual persistence.

We employ a persistence model by Sloan (1996) and Freeman *et al.* (1982), which has also been validated in more recent studies (Gardner *et al.*, 2024; Pirveli, 2020). Persistence Equation (1) expresses the relationship between current earnings performance and future earnings performance, following the approach of Freeman *et al.* (1982). However, Sloan (1996) argues that Equation (1) is misspecified because it constrains the coefficients on the cash and accrual components of earnings to be equal. To address this limitation, Sloan (1996) recommends an alternative specification, Persistence Equation (2).

In Equation (3), we introduce an interaction term, SOX × Accruals (SOX_X_ACR), to test our first hypothesis: SOX significantly increases the persistence of accruals.

$$EARN_{j,t+1} = \alpha_0 + \alpha_1 EARN_{j,t} + e_{j,t} \quad (1)$$

$$EARN_{j,t+1} = \gamma_0 + \gamma_1 ACCR_{j,t} + \gamma_2 OCF_{j,t} + e_{j,t} \quad (2)$$

$$EARN_{j,t+1} = \gamma_0 + \gamma_1 ACCR_{j,t} + \gamma_2 OCF_{j,t} + \gamma_3 SOX_{j,t} + \gamma_4 (SOX\_X\_ACR)_{j,t} + e_{j,t} \quad (3)$$

Where,

$EARN_{j,t+1}$= Net income before extraordinary items for a firm j at a time period t, standardized by total assets at the beginning of time period t.

ACCRj,t= Total Accrual for a firm j at a time period t, standardized by total assets at the beginning of time period t.

$OCF_{j,t}$= Net operating cash flows for a firm j at a time period t, standardized by total assets at the beginning of time period t.

$SOX_{j,t}$= An indicator variable equal to one if firm observation is in year 2003 and onwards, otherwise zero.

$SOX\_X\_ACR_{j,t}$ = An interaction term measured as SOX times accruals at time period t for a firm j.

Net income before extraordinary items (EARN) is used to measure the earnings variable. Net cash flow from operations (OCF) is used to measure the cash flow variable. The accrual component of earnings (ACCR) is calculated as net income minus operating cash flows, as is common in the earnings management literature (Jones, 1991; Subramanyam, 1996).

Accruals = Net Income – Operating Cash Flows

The dummy variable SOX is a binary indicator that takes the value of 1 for the post-SOX period (year 2003 and onwards) and 0 otherwise. All three continuous variables: Earnings, Accruals, and Cash Flows are standardized by total assets at the beginning of the year. The dependent variable, earnings of a firm j, is measured for period t+1, while all independent variables are measured as of time t for firm j, unless otherwise indicated.

3.2. Pricing Model

This research design addresses second research question of this paper: does the SOX Act significantly reduce the stock market over pricing of the discretionary component of earnings? This issue is investigated by Equation (8) below which examines the effect of SOX on pricing of discretionary accruals.

Nondiscretionary accruals are determined using the cross-sectional variation of the Jones model (DeFond and Jimbalvo, 1994). This method estimates nondiscretionary accruals as a function of the level of property, plant, and equipment (PPE) and changes in revenue (ΔREV) by estimating the following model:

$$ACR_{j,t} = \alpha\ INVTA_{j,t-1} + \beta\ \Delta REV_{j,t} + \gamma\ PPE_{j,t} + e_{j,t} \quad (4)$$

Where,

ACRj,t= Total Accrual for a firm j at a time period t, standardized by total assets at the beginning of time period t.

$INVTA_{j,t-1}$= Inverse of total assets at the beginning of time period t.

$\Delta REV_{j,t}$= Change in net revenue for a firm j during the time period t, standardized by total assets at the beginning of time period t.

$PPE_{j,t}$ = Net Property Plant and Equipment for a firm j at a time period t, standardized by total assets at the beginning of time period t.

The fitted value in Equation (4) represents non-discretionary accruals (NDAC), while the residual represents discretionary accruals (DAC). The calculations for NDAC and DAC are shown in Equations (5) and (6), respectively.

$$\mathbf{NDAC_{j,t}} = \hat{\alpha}\ INVTA_{j,t-1} + \hat{\beta}\ \Delta REV_{j,t} + \hat{\gamma}\ PPE_{j,t} \quad (5)$$

$$\mathbf{DAC_{j,t}} = ACCR_{j,t} - \hat{\alpha}\ INVTA_{j,t-1} - \hat{\beta}\ \Delta REV_{j,t} - \hat{\gamma}\ PPE_{j,t} \quad (6)$$

The cross-sectional version of the Jones (1991) model is chosen over its time-series counterpart for several reasons cited by Subramanyam (1996). First, the cross-sectional model generates a larger sample than the time-series model. Second, the number of observations per model is considerably higher in the cross-sectional model. Finally, the use of the time-series model lowers the power of tests due to overlapping estimation and treatment periods.

We employ the pricing of discretionary accruals model in Equation (7), similar to those used in Dechow (1994) and Subramanyam (1996). This model has been validated in the recent studies (Dechow *et al*., 2022; Moscariello *et al*., 2020). We added the interaction term SOX × DAC in Equation (8) to test our second hypothesis: SOX significantly reduces the overpricing of accruals.

$$RET_{j,t} = \alpha + \beta_1\ OCF_{j,t} + \beta_2\ NDAC_{j,t} + \beta_3\ DAC_{j,t} + e_{j,t} \quad (7)$$

$$RET_{j,t} = \alpha + \beta_1\ OCF_{j,t} + \beta_2\ NDAC_{j,t} + \beta_3\ DAC_{j,t} + \beta_4\ SOX_{j,t} + \beta_5\ (SOX\_X\_DAC)_{j,t} + e_{j,t} \quad (8)$$

Where,

$RET_{j,t}$= Annual stock returns (Returns) for a firm j measured as compounded monthly stock returns for a twelve-month period ending three months after the

end of the fiscal year of the firm, standardized by total assets at the beginning of the year.

$OCF_{j,t}$= Net operating cash flows for a firm j at a time period t, standardized by total assets at the beginning of time period t.

NDACj,t= Non-discretionary accruals for a firm j at a time period t measured using cross-sectional version of Jones (1991) model.

DACj,t= Discretionary accruals for a firm j at a time period t measured using cross-sectional version of Jones (1991) model.

SOX= An indicator variable equal to one if firm observation is in year is 2003 and onwards, otherwise zero

SOX _X _$DAC_{j,t}$ = An interaction term measured as SOX times discretionary accruals at time period t for a firm j.

Annual stock returns (RET) are measured as compounded monthly stock returns over a twelve-month period ending three months after the firm's fiscal year-end. All continuous variables for firm j at time t are standardized by total assets at the beginning of the period. DAC and NDAC represent discretionary and non-discretionary accruals, respectively, and are measured using the cross-sectional version of the Jones (1991) model.

4. SAMPLE AND EMPIRICAL RESULTS

We first explain the sample formation, followed by a discussion of the sample attributes (Section 4.1). Next, we present the results from estimating the persistence model (Section 4.2), followed by the results from estimating the pricing model (Section 4.3).

4.1. Description of Sample

The initial sample consists of all public firm-year observations for which necessary data is available in the SEC EDGAR Database, Yahoo Finance API, and Quandl databases from 1992 to 2013, produced by Python coding. The following observations are collected from financial statements: total assets, net revenue, net income before extraordinary items, net operating cash flows, and net property, plant, and equipment. Monthly stock returns are collected using Yahoo Finance API. The initial firm financial statements and return data-merged sample consists of 150,367 firm-year observations.

From this sample, we delete firm-year observations with: (1) zero asset value, (2) missing values for dependent and independent variables, (3) missing prior-year observations, and (4) observations that are more than three standard deviations from the mean of operating cash flows (OCF), discretionary accruals (DAC), and non-discretionary accruals (NDAC). The final sample consists of 12,721 firms and 103,187 firm-year observations from 1992 to 2013 (Table 1).

Table1: Formation of Sample

All public firms in SEC EDGAR 2013 for which complete set of variable information is available	150367
Less: Firm year observations	
Zero assets	29
Missing values on dependent and independent variables	19321
Less than 10 firms available in an industry-year group	1536
Missing Prior Year Observations	13742
Observations that are more than three standard deviations from the mean of operating cash flows, discretionary accruals, and non-discretionary accruals	12552
Final Sample	103187

Descriptive statistics for our sample are reported in Table 2. Panel A presents descriptive statistics for variables in the persistence model. The mean values of EARN and ACR are negative, whereas the mean of OCF is positive. Panel B presents descriptive statistics for variables in the pricing model. Consistent with Subramanyam (1996), total accruals (ACR) and non-discretionary accruals (NDAC) are negative on average due to depreciation. The mean and median of discretionary accruals (DAC) and annual stock returns (RET) are close to zero. Prone to higher managerial bias, discretionary accruals (DAC) understandably exhibit a higher standard deviation than non-discretionary accruals (NDAC).

Table 3 summarizes Pearson correlation coefficients, with significant correlations (*P*-value < .05) highlighted in bold letters. Panel A reports the Pearson correlation matrix for variables in the persistence model. Of particular interest is the significant correlation between future earnings ($EARN_{t+1}$) and accruals (ACR_t), as well as between future earnings ($EARN_{t+1}$) and the interaction term (SOX × ACR). Conceptually, the significant relationship between earnings and accruals remains in the presence of SOX. We hypothesize that this relationship improves in the post-SOX period. Hence, the correlation findings suggest support for our first hypothesis. A more rigorous statistical

regression analysis in support of our first hypothesis is presented in Section 4.2 of the research results. Many significant correlations are expected due to the nature of the variables, which include earnings and its components.

Table 2: Descriptive Statistics

PANEL A- Persistence Model Variables

Variables[1] (N=103187)	*Mean*	*Standard Deviation*	*25th Percentile*	*Median*	*75th Percentile*
EARN(t+1)	-0.025	0.302	-0.036	0.028	0.079
EARN(t)	-0.023	0.36	-0.031	0.03	0.083
ACR(t)	-0.062	0.174	-0.106	-0.049	-0.005
OCF(t)	0.039	0.323	0.004	0.069	0.137
SOX	0.485	0.5	0	0	1
SOX_X_ACR(t)	-0.033	0.111	-0.051	0	0

PANEL B- Pricing Discretionary Model Variables

Variables[1] (N=103187)	*Mean*	*Standard Deviation*	*25th Percentile*	*Median*	*75th Percentile*
ACR	-0.067	0.183	-0.109	-0.05	-0.006
INVTA	0.037	3.125	0.001	0.004	0.018
ΔREV	-0.133	0.958	-0.195	-0.051	0.01
PPE	0.299	0.861	0.061	0.184	0.423
DAC	0.001	0.179	-0.045	0.005	0.057
NDAC	-0.068	0.141	-0.101	-0.059	-0.022
RET	0.005	0.1	-0.001	0	0.001
OCF	0.031	0.494	0	0.066	0.134
SOX	0.485	0.5	0	0	1
SOX_X_DAC	-0.002	0.12	0	0	0.001

[1]Variable definitions: EARN(t+1) is future earnings measured as net income before extraordinary items at time period t+1, standardized by total assets at the beginning of the year; EARN(t) is net income before extraordinary items, standardized by total assets at the beginning of the year; OCF is net operating cash flows, standardized by total assets at the beginning of the year; ACR is total accrual measured as net income minus operating cash flows, standardized by total assets at the beginning of the year; SOX is an indicator variable equal to one if firm year is 2003 and onwards, otherwise zero; SOX_X_ACCR(t) is an interaction term measured as SOX times accruals at time period t; INVTA is the inverse of total assets at the beginning of the period t; ΔREV is the change annual total revenue standardized by total assets of the firm; PPE is the net property plant and equipment standardized by total assets at the beginning of the year; DAC is discretionary accruals measured using Jones (1991) model; NDAC is non-discretionary accruals measured using Jones (1991) model; RET is annual stock returns measured as compounded monthly stock returns for a twelve-month period ending three months after the end of the fiscal year of the firm, standardized by total assets at the beginning of the year; SOX_X_DAC is an interaction term equals to SOX times discretionary accruals.

Table 3: Pearson Correlation Matrix

PANEL A- Persistence Model Variables

Variables[1] *(N=103,187)*	$EARN_{(t+1)}$	$EARN_{(t)}$	$ACR_{(t)}$	$OCF_{(t)}$	*SOX*	*SOX_X_ACR(t)*
$EARN_{(t+1)}$	1					
$EARN_{(t)}$	**0.504**	1				
$ACR_{(t)}$	**0.185**	**0.445**	1			
$OCF_{(t)}$	0.463	0.875	-0.045	1		
SOX	**0.028**	**0.034**	**-0.009**	**0.042**	1	
SOX_X_ACR(t)	**0.112**	**0.253**	**0.587**	**-0.035**	**-0.288**	1

PANEL B- Pricing Model Variables

Variables[1] *(N=103,187)*	*ACR*	*INVTA*	*ΔREV*	*PPE*	*DAC*	*NDAC*	*RET*	*OCF*	*SOX*	*SOX_X_ DAC*
ACR	1									
INVTA	-0.016	1								
ΔREV	-0.023	-0.004	1							
PPE	**-0.086**	**0.008**	**-0.148**	1						
DAC	**0.696**	0.002	**-0.016**	**0.012**	1					
NDAC	0.415	-0.023	-0.009	**-0.127**	**-0.364**	1				
RET	**0.046**	**-0.011**	**-0.01**	**0.078**	**0.026**	**0.026**	1			
OCF	0.014	-0.768	-0.028	0.089	-0.045	0.076	**0.136**	1		
SOX	**0.021**	-0.001	**0.051**	**-0.045**	**-0.024**	**0.057**	**-0.012**	**0.023**	1	
SOX_X_ DAC	**0.348**	0.001	**-0.006**	**0.009**	**0.675**	**-0.403**	0.002	**-0.031**	**-0.014**	1

[1] See Table 2 for variable definitions (N = 103187). Significant correlations (p-value < 0.05) are indicated in bold.

Panel B presents the Pearson correlation matrix for variables in the pricing model. Of particular interest is the significant correlation between returns and discretionary accruals. However, the correlation between returns and the interaction term (SOX × DAC) is insignificant. Many significant correlations are expected due to the nature of the variables, which are components of earnings.

4.2. Analysis of SOX on Persistence of Accruals

Table 4 reports the regression results for three different persistence models. The third column in Table 4 provides parameter estimates for Equation (1). We find that the coefficient of earnings persistence (α_1 = 0.423, *p*-value < .001)

is less than unity, confirming prior studies that accounting rates of return are mean-reverting (Beaver, 1970; Freeman *et al.*, 1982; Sloan, 1996).

However, Sloan (1996) argues that the persistence model in Equation (1) is misspecified as it constrains the coefficients on the cash and accrual components of earnings to be equal. Her study recommends the use of the persistence model in Equation (2). The fourth column in Table 4 provides parameter estimates for Sloan's (1996) persistence model. Individually, the persistence coefficients for both accrual and cash flow components are significant, with *p*-values of t-statistics less than 0.01. Consistent with Sloan (1996), we also find that the persistent component of cash flow ($\gamma_2 = 0.441$) is significantly greater than the persistent component of accrual ($\gamma_1 = 0.356$). An F-test rejects the null hypothesis that the coefficients are equal (*F*-statistic = 241.72, *p*-value < .01). These results align with prior research indicating that cash flows are more persistent than accruals (Sloan, 1996; Collins & Hribar, 2000; Xie, 2001; Kao *et al.*).

Empirical results for the impact of SOX on the persistence of accruals are shown in the fifth column of Table 4, which provides parameter estimates for Equation (3). We find that SOX significantly improves the persistence of accruals ($\gamma_4 = 0.069$, *p*-value < 0.01). The sign and significance of the coefficients for accruals and cash flow remain unchanged from Equation (2) to Equation (3). Cash flow is still more persistent than accruals; however, this does not affect our finding that SOX significantly increases the persistence of accruals.

4.3. Analysis of SOX on Pricing of Discretionary Accruals

The cross-sectional version of the Jones (1991) model (Equation 4) is estimated separately for each combination of a two-digit SIC code and calendar year. The mean values of the estimates are shown in Table 5. The coefficients have the predicted signs, consistent with Jones (1991): positive for the change in revenue and negative for property, plant, and equipment. The fitted values calculated using these parameter estimates represent non-discretionary accruals (NDAC), while the residual terms represent discretionary accruals (DAC), as shown in Equations (5) and (6).

Table 6 presents parameter estimates of the pricing models. The third column in Table 6 provides parameter estimates for Subramanyam's (1996) pricing model, Equation (7) in this study. Consistent with his findings, we observe that the market prices abnormal accruals ($\beta_3 = 0.025$, *p*-value < 0.01).

Table 4: Regression Results- Persistence Model

Variables[1] (N=103,187)	*Pred.*	*Equation 1*		*Sloan (1996) Model - Equation 2*		*Includes SOX_X_ACR - Equation 3*	
		Estimated Coefficient	*t-statistic*	*Estimated Coefficient*	*t-statistic*	*Estimated Coefficient*	*t-statistic*
Intercept		-0.015***	175	-0.019***	-21.29	-0.028***	-22.05
EARN(t)	+	0.423***	-17.01				
ACR(t)	+			0.356***	71.37	0.330***	52.51
OCF(t)	+			0.441***	163.8	0.440***	163.38
SOX	+					0.019***	10.26
SOX_X_ACR(t)	H1:+					0.069***	6.78
Adj R-squared		25.40%		25.60%		25.70%	
F-test				$\gamma_{1=}\ \gamma_{2:}$ 241.72			

*/ **/*** indicate significance at the 0.10 / 0.05 / 0.01 level using two-tailed tests.
[1] Variables are defined in table 2. The regression results assume a normal distribution of variables, dependent variable is a linear function of independent variables, independent variables are unrelated to random errors, and homoscedasticity of error terms.

Table 5: Parameters Estimates of Jones (1991) Model

Variables[1]	Coefficient	Mean of Coefficient
Intercept	bo	-0.048
INVTA	$\hat{\alpha}$	2.224
ΔREV_j	$\hat{\beta}$	0.223
PPE	$\hat{\gamma}$	0.215

Table 6: Regression Results- Pricing Model

Variables[1] (N=103187)	*Pred.*	*Equation 7*		*Includes SOX_X_DAC Equation 8*	
		Estimated Coefficient	*t-statistic*	*Estimated Coefficient*	*t-statistic*
Intercept		0.005***	15.2	0.007***	14.25
OCF	+	0.027***	43.8	0.027***	43.96
NDAC	+	0.022***	9.55	0.020***	8.41
DAC	+	0.025***	13.32	0.032***	13.51
SOX	-			-0.003***	-5.16
SOX_X_DAC	H1:-			-0.018***	-4.95
Adj R-squared		2.03%		2.08%	

*/ **/*** indicate significance at the 0.10 / 0.05 / 0.01 level using two-tailed tests.
[1] Variables are defined in table 2. The regression results assume a normal distribution of variables, dependent variable is a linear function of independent variables, independent variables are unrelated to random errors, and homoscedasticity of error terms.

Xie (2001) extends Subramanyam (1996) by demonstrating that the market not only processes, but also overprices, discretionary accruals. Her study attributes the overestimation of accruals persistence as a major cause of overpricing. In Section 4.3, we document that accruals persistence improved significantly in the post-SOX period; hence, we also expect the mispricing of accruals to have significantly reduced in the post-SOX period.

Empirical results for the impact of SOX on the overpricing of accruals are shown in the fourth column of Table 6, which presents parameter estimates for Equation (8). Consistent with our expectation, we find that the market's pricing of discretionary accruals significantly decreased in the post-SOX period (β_5 = -0.018, *p*-value < 0.01). The sign and significance of the coefficients associated with OCF, NDAC, and DAC remain unchanged from Equation (7) to Equation (8). However, this does not affect our finding that the market's price response to discretionary accruals significantly declined in the post-SOX period. The adjusted *R*-squared value improved from 2.03 percent in Equation (7) to 2.08 percent in Equation (8). Thus, the increase in explanatory power of the regression, with the addition of the interaction term SOX × DAC, strengthens the validity of our statistical results.

Cross sectional version of Jones (1991) model (Equation 4) is estimated separately for each combination of two-digit SIC code and calendar year; the mean value of the estimates is shown in Table 5. The coefficients are of predicted signs consistent with Jones (1991): positive for change in revenue and negative of property, plant, and equipment. The fitted value calculated using these parameters estimates are non-discretionary accrual (NDAC) and the residual terms are discretionary accrual (DAC) as shown in Equation (5) and (6).

Our results are broadly consistent with those of Subramanyam (1996) and Xie (2001). Similar to Subramanyam (1996), we find that the market prices abnormal (discretionary) accruals, as evidenced by the positive and significant coefficient on DAC in Equation (7). Extending this, our finding that the market overprices discretionary accruals in the pre-SOX period aligns with Xie (2001), which attributes such mispricing to investors' overestimation of accrual persistence. However, our study provides new evidence by showing that this overpricing significantly declines in the post-SOX period, likely due to improved accrual persistence and increased scrutiny of financial reporting.

This decline in the pricing coefficient for discretionary accruals (from 0.025 to a significantly lower level post-SOX) suggests that SOX has enhanced market efficiency in pricing earnings components, an effect not explored in Xie (2001) or Subramanyam (1996). Moreover, the slight increase in adjusted R-squared when including the SOX interaction term further supports the incremental explanatory power of our model. Together, our findings both validate and extend prior literature by showing how a regulatory intervention such as SOX alters both managerial behavior and investor perception.

5. CONCLUSION

This study reports two primary findings. First, the persistence of the accrual component of earnings increased significantly in the post-SOX period. Second, the market's overpricing of the discretionary accrual component of earnings decreased significantly in the post-SOX period.

Recent accounting literature documents that SOX acts as a deterrent to accrual management. We argue that an increased deterrent to accrual management is likely to improve the persistence of accruals and, consequently, should also reduce the overpricing of discretionary accruals. Our two primary findings are related in that an increase in the persistence of accruals leads to a reduction in the overpricing of accruals. These findings expand upon prior accounting studies that suggest SOX acts as a deterrent to accrual-based earnings management (Cohen *et al.*, 2008; Wilson, 2012), leading managers to shift toward real earnings management instead.

Our findings have implications for regulators, standard setters, public companies, financial statement users, analysts, auditors and audit committees. Regulators and standard setters can use our findings to evaluate the effectiveness of the SOX Act. Analysts and other financial statement users may leverage our results to better interpret accounting numbers. By demonstrating the benefits of SOX, our results also influence public companies' perceptions of the regulation. Importantly, our findings provide valuable insights for auditors and audit committees, who play a critical role in overseeing financial reporting and ensuring compliance with SOX provisions. Improved accrual persistence and reduced mispricing of discretionary accruals may signal more effective internal controls and reduced earnings manipulation, thereby supporting the broader goal of strengthening corporate governance. Overall, our study contributes to

the current literature on the debate regarding the benefits and costs of SOX, accrual quality, earnings management, and the impact of SOX on market efficiency.

The results raise additional questions for future research. Of particular interest is the extent to which the reduction in the overpricing of accruals can be attributed to SOX. A fruitful extension of our study would be to first investigate whether the accrual component is overpriced, as Xie (2001) did. Second, if the accrual component is indeed overpriced, it would be valuable to quantify how much of this accrual mispricing declined in the post-SOX period. This would help strengthen the second finding of our study. Similarly, because our tests are based on annual observations, another meaningful extension would be to assess the effect of SOX on quarterly observations, thereby controlling for seasonal factors. Finally, future studies may investigate the impact of machine learning (Subedi, 2024) and artificial intelligence (Bhandari & Bhandari, 2025) on the pricing and persistence of discretionary accruals, particularly in the evolving regulatory environment. As AI-driven algorithms become increasingly integrated into financial reporting and market analysis, it would be valuable to examine whether these technologies enhance or distort the market's ability to accurately price accrual components.

Our study has three main limitations. First, our second primary finding that SOX significantly reduces the overpricing of accruals is based on Xie (2001), which assumes that the market overestimates accrual pricing. Second, while some literature (e.g., Dechow *et al.*, 2005; Benish, 1997) suggests alternative methods to the Jones (1991) model for capturing discretionary accruals, we rely on prior validations of the Jones model. Finally, our sample includes only U.S. public firms, meaning that our results may not be generalizable to private or nonprofit firms, or to firms outside the U.S. (Attia *et al.*, 2022).

Acknowledgement

The authors are grateful to the anonymous reviewers and editor of the journal for their thought provoking and helpful comments However, for any errors, the authors owe the responsibility.

Conflict of Interest

There is no conflict of interest involved in the publication of this paper.

Disclosure Statement

No external funding has been provided for the research presented in this study.

The authors used Grammarly to correct grammar and enhance the manuscript's readability. All AI generated text was thoroughly reviewed and edited by the authors to ensure accuracy and originality.

References

Abad, D., Cutillas-Gomariz, M. F., Sánchez-Ballesta, J. P., & Yagüe, J. (2018). Real earnings management and information asymmetry in the equity market. *European Accounting Review*, *27*(2), pp.209-235.

Abdelwahed, A. S., Abu-Musa, A. A., Moubarak, H., & Badawy, H. A. (2023). The adoption of big data analytics in the external auditing: bibliometric and content analyses. *International Journal of Auditing and Accounting Studies*, *5*(1), pp.49-85.

Attia, E. F., Ismail, T. H., & Mehafdi, M. (2022). Impact of board of directors attributes on real-based earnings management: further evidence from Egypt. *Future Business Journal*, *8*(1), pp. 56.

Bartov, E., Gul, F. A., & Tsui, J. S. (2000). Discretionary-accruals models and audit qualifications. *Journal of Accounting and Economics, 30*(3), pp.421-452.

Beneish, M. D. (1997). Detecting GAAP violation: Implications for assessing earnings management among firms with extreme financial performance. *Journal of Accounting and Public Policy, 16*(3), pp. 271-309.

Bernard, V. L., & Skinner, D. J. (1996). What motivates managers' choice of discretionary accruals? *Journal of Accounting and Economics, 22*(1), pp.313-325.

Bhandari, R., & Bhandari, S. (2025). Artificial intelligence: understanding deepfakes. *EDPACS*, pp.1–11.

Bhandari, R., & Bhandari, S. (2024). AI Governance and Global Stability: Why US Leadership Matters. Available at SSRN: https://ssrn.com/abstract=5095614.

Borgia, C., & Siegel, P. H. (2008). How the Sarbanes Oxley act is affecting profitability in the banking industry. *The CPA Journal, 78*, pp.13-14.

Chambers, D., & Payne, J. (2011). Audit quality and accrual persistence: Evidence from the pre-and post-Sarbanes-Oxley periods. *Managerial Auditing Journal, 26*(5), pp. 437-456.

Chelikani, S., & D'Souza, F. (2011). The impact of Sarbanes Oxley on market efficiency: Evidence from mergers and acquisitions activity. *International Journal of Business & Finance Research (IJBFR), 5*(4), pp.75-88.

Chen, J. Z., Cussatt, M., & Gunny, K. A. (2020). When are outside directors more effective monitors? Evidence from real activities manipulation. *Journal of Accounting, Auditing & Finance*, *35*(1), pp. 26-52.

Cohen, D. A., Dey, A., & Lys, T. Z. (2008). Real and accrual-based earnings management in the pre-and post-Sarbanes-Oxley periods. *The Accounting Review, 83*(3), pp.757-787.

Čupić, M., Todorović, M., & Benković, S. (2023). Value relevance of accounting earnings and cash flows in a transition economy: the case of Serbia. *Journal of Accounting in Emerging Economies*, *13*(3), pp.541-565.

Dechow, P. M., Larson, C. R., & Resutek, R. J. (2022). The effect of accrual heterogeneity on accrual quality inferences. *The Accounting Review*, *97*(5), pp.245-273.

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

Engel, E., Hayes, R. M., & Wang, X. (2007). The Sarbanes–Oxley act and firms' going-private decisions. *Journal of Accounting and Economics, 44*(1), pp.116-145.

Farshadfar, S., & Monem, R. M. (2019). Further evidence of the relationship between accruals and future cash flows. *Accounting & Finance*, *59*(1), pp.143-176.

Francis, J. R., & Krishnan, J. (1999). Accounting accruals and auditor reporting conservatism. *Contemporary Accounting Research, 16*(1), pp.135-165.

Gardner, J., Sloan, R. G., & Yoon, J. S. (2024). Distinguishing between recurring and nonrecurring components of earnings using unobserved components modeling. *Journal of Accounting and Economics*, *78*(1), pp.101687.

Graham, J. R., Harvey, C. R., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics, 40*(1), pp.3-73.

Habib, A., Ranasinghe, D., Wu, J. Y., Biswas, P. K., & Ahmad, F. (2022). Real earnings management: A review of the international literature. *Accounting & Finance*, *62*(4), pp. 4279-4344.

Hope, O., & Thomas, W. B. (2008). Managerial empire building and firm disclosure. *Journal of Accounting Research, 46*(3), pp. 591-626.

Huang, S., Roychowdhury, S., & Sletten, E. (2020). Does litigation deter or encourage real earnings management? *The Accounting Review*, *95*(3), pp. 251-278.

Ismail, T. H., Samy El-Deeb, M., & Abd El–Hafiezz, R. H. (2024). Ownership structure and financial reporting integrity: the moderating role of earnings quality

in Egyptian practice. *Journal of Humanities and Applied Social Sciences*, *6*(5), pp.471-495.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), pp.305-360.

Jiraporn, P., Singh, M., & Lee, C. I. (2009). Ineffective corporate governance: Director busyness and board committee memberships. *Journal of Banking & Finance, 33*(5), pp.819-828.

Jones, J. J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research,* 29(2), pp.193-228.

Joshi, P. L. (2025, Forthcoming). Modern Auditors' Attributes and Audit Quality (A New Perspective on an Old Issue). *International Journal of Auditing Technology*. DOI: 10.1504/ijaudit.2024.10067611.

Joshi, P. L., & Wakil, A. (2004). A study of the audit committees' functioning in Bahrain: Empirical findings. *Managerial Auditing Journal*, *19*(7), pp.832-858.

Kao, L., Lin, D., & Chen, A. (2010). Does Sarbanes-Oxley Act Affect Earnings Quality? *Working Paper Series.* Available at http://www.personal.psu.edu/users/j/x/jxz203/lin/Lin_pub/2011_RAAS.pdf.

Krishnan, J., Rama, D., & Zhang, Y. (2008). Costs to comply with SOX section 404. *Auditing: A Journal of Practice & Theory, 27*(1), pp.169-186.

Kwanbo, M. L. (2020). Determinants of Financial Reporting Quality of Nigerian Stock Exchange NSE Lotus Islamic Index LII. *International Journal of Auditing and Accounting Studies*, *2*(1), 95-106.

Leuz, C., Triantis, A., & Yue Wang, T. (2008). Why do firms go dark? causes and economic consequences of voluntary SEC deregistration. *Journal of Accounting and Economics, 45*(2), pp.181-208.

Linck, J. S., Netter, J. M., & Yang, T. (2009). The effects and unintended consequences of the sarbanes-oxley act on the supply and demand for directors. *Review of Financial Studies, 22*(8), pp.3287-3328.

Mason, T. W., & Morton, R. M. (2020). The economic effects of earnings management pre-and post-SOX. *Accounting and the Public Interest*, *20*(1), pp.76-103.

Moardi, M., Salehi, M., Poursasan, S., & Molavi, H. (2020). Relationship between earnings management, CEO compensation, and stock return on Tehran Stock Exchange. *International Journal of Organization Theory & Behavior*, *23*(1), pp.1-22.

Moscariello, N., Fera, P., & Cinque, E. (2020). The information content of discretionary accruals during systemic crises. *Journal of Applied Accounting Research*, *21*(3), 455-476.

Mostafa, W., & Dixon, R. (2024). The relative valuation of cash flow and current accruals affected by their extremity. *Review of Accounting and Finance*, *23*(1), pp.59-79.

Mwaungulu, E., Li-Kuehne, M., & Subedi, M. (2023). Corporate governance, internal control and leverage: Are we there yet? *EDPACS*, *68*(6), pp.1-24.

Peasnell, K. V., Pope, P. F., & Young, S. (2005). Board monitoring and earnings management: Do outside directors influence abnormal accruals? *Journal of Business Finance & Accounting, 32*(7-8), pp.1311-1346.

Pham, H. Y., Chung, R. Y. M., Roca, E., & Bao, B. H. (2019). Discretionary accruals: signalling or earnings management in Australia? *Accounting & Finance*, *59*(2), pp.1383-1413.

Pincus, M., Wu, S., & Hwang, J. (2022). Did accrual earnings management decline and real earnings management increase post-SOX? A re-examination over an extended post-SOX period and a closer look at REM-AEM substitution. *Journal of Financial Reporting*, *7*(2), pp.179-205.

Pirveli, E. (2020). Earnings persistence and predictability within the emerging economy of Georgia. Journal of Financial Reporting and Accounting, 18(3), pp.563-589.

Ribstein, L. E. (2002). Market vs. regulatory responses to corporate fraud: A critique of the Sarbanes Oxley act of 2002. *Journal of Corporation Law, 28*(1), pp.1-67.

Romano, R. (2005). The Sarbanes Oxley act and the making of quack corporate governance. *Yale Law Journal,* pp. 114 (7), pp.1521-1611.

Sloan, R. G. (1996). Do stock prices fully reflect information in accruals and cash flows about future earnings? *Accounting Review*, 71 (3), pp.289-315.

Solomon, D., & Bryan-Low, C. (2004). Companies complain about cost of corporate governance rules. *Wall Street Journal,* February 10.

Srivastava, A. (2019). Improving the measures of real earnings management. *Review of Accounting Studies*, *24*(4), pp.1277-1316.

Subedi, M. (2024). Principles based accounting standards, audit fees and going concern: evidence using advanced machine learning. *International Journal of Accounting & Information Management*, *32*(2), pp.308-344.

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

Tosun, O. K., & Senbet, L. W. (2020). Does internal board monitoring affect debt maturity. *Review of Quantitative Finance and Accounting*, *54*, pp.205-245.

Wilson, G. (2012). The Effect of Sarbanes-Oxley on Earnings Management Behavior. *Proceedings of the 18th International Business Research Conference 2012.* Available at SSRN: http://ssrn.com/abstract=2167039

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