

The effect of the Sarbanes-Oxley Act on Reporting Conservatism

Master Thesis

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Abstract

There is an ongoing debate in the literature on the effect of the Sarbanes-Oxley Act on reporting conservatism. This paper uses 30.731 firm-year observations from 5,773 publicly traded companies in the U.S. over the period 1999-2006 and documents that reporting conservatism declined after the Sarbanes-Oxley Act came into effect. Finally, where the market-to-book ratio and leverage significantly strengthen the link between the Sarbanes-Oxley Act and reporting conservatism, firm size undermines this relationship.

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1. Introduction

Enron, once one of the largest companies of corporate America and a darling of Wall Street, collapsed almost overnight after financial intermediaries and the general public picked upon fraudulent practices perpetrated by the company's executives. Enron started to cook the books subsequently to the transition to Mark-to-Market accounting, which allows a company to adjust the values of assets as well as liabilities according to their fair value. Specifically, the energy trader and supplier exploited the accounting method to prematurely recognize unverifiable revenues of its investment projects to inflate the bottom line. Gradually, it became clear that the projects were performing less than projected. However, instead of bearing the financial losses, the executives of Enron orchestrated constructions to hide the piles of debt and toxic assets inside Special Purpose Vehicles. By spring 2001, the United States Security and Exchange Commission started to detect the problematic accounting practices, and by the summer of 2001, Enron's stock plummeted. Shortly after, Enron filed for bankruptcy resulting in a \$74 billion loss in shareholder value, 20 000 employees lost their jobs, \$2 billion in pension and retirement funds disappeared and one of the largest accounting firms in the world imploded.

In addition to Enron, other high-profile corporate scandals in the late 1990s and early 2000s like WorldCom and Tyco International deeply impaired the confidence of both investors and the general public in the U.S. capital market, that the U.S. Senate deemed it to be necessary to pass a federal law in July of 2002, that is commonly known as the Sarbanes-Oxley Act. Specific acts of fraud or corruption can result in investor suspicion towards all entities, and eventually lead to the end of capital allocation into the capital market. The finances supplied by investors are a vital component of a functioning stock market and a running economy. To prevent further erosion of investor trust in publicly traded companies and a severe economic recession, the U.S Senate unanimously voted in favour of the Public Company Accounting Reform and Investor Protection Act of 2002, generally known as the Sarbanes-Oxley Act. The Act mandates that its provisions be complied with by all publicly traded companies and entities in the process of initiating an initial public offer, and attempts to plant the ideals of integrity, accuracy and accountability into these companies' financial reports. In other words, the Sarbanes-Oxley Act tries to eliminate fraudulent and erroneous reporting and terminate the untouchable nature of the blameable party within the U.S. capital market.

In the late 1990s and early 2000s, deception inside financial statements usually involved legitimate and widely used accounting methods, which were misapplied in an aggressive manner. Aggressive accounting practices are the opposite of conservative accounting techniques. Both aggressive and conservative financial reporting involves the application of asymmetric verification requirements with respect to the recognition of accounting gains and losses, but in the opposite direction. In other words, conservative accounting means that financial losses have a higher likelihood of being recognized than financial gains even though these two events have the same probability of occurring, and aggressive accounting works the other way around. The Sarbanes-Oxley Act aims to both stop and penalize

aggressive misapplication of General Accepted Accounting Standards. Therefore, one can argue that the level of reporting conservatism employed inside financial statements has increased subsequently to the passage of the Sarbanes-Oxley Act of 2002. For instance, financial advisers consulted their clients to apply a more conservative approach during the preparation of financial statements after the Sarbanes-Oxley Act came into effect (Protiviti, 2002). The question whether accounting conservatism increased after the Sarbanes-Oxley Act has been studied, but the answer is yet an ongoing debate. Lobo and Zhou (2006) document an increase in reporting conservatism in the two years subsequent to the passage of the Sarbanes-Oxley Act. However, the question whether the documented increase persists over a longer period of time remains unanswered. For example, Perino (2002) claims the Sarbanes-Oxley Act mostly formalises an assortment of previously active regulations, and therefore the Act is heavy in rhetoric and light in reform. Moreover, previous literature utilizes an industry-year level for conservatism. This proxy of reporting conservatism neglects firm-specific factors like the market-to-book ratio, firm size and leverage, that potentially have a moderating effect on the relationship between the Sarbanes-Oxley Act and accounting conservatism. Therefore, this research attempts to fill the gap in the literature by answering the following research question.

What is the effect of the Sarbanes-Oxley Act on accounting conservatism?

This paper explores the relationship between the Sarbanes-Oxley Act and conditional conservatism with an Ordinary Least Squares (OLS) regression analysis and employs the Khan and Watts (2009) measure for accounting conservatism as a proxy for conditional conservatism. The findings suggest that conditional conservatism has decreased subsequent to the passage of the Sarbanes-Oxley Act. Additionally, the results provide evidence of the importance to consider firm-specific factors in the process of analysing accounting conservatism. Specifically, the market-to-book ratio and leverage strengthen the effect of the Sarbanes-Oxley Act on conditional conservatism and firm size weakens the effect.

The remaining of this paper is structured as follows. The second section provides background information, a debate of previous literature and develops four hypotheses. Next, the third section summarizes the sample selection and elaborates on the empirical approach. Subsequently, the fourth section reports and discusses the empirical findings. Finally, the fifth and last section delivers the conclusion.

2. Theoretical Framework, Literature Review, and Hypothesis Development

2.1 Conservatism

To get a deeper understanding of (conditional) accounting conservatism, this paper decomposes a firm's market value of equity into several components. Figure 1 of the Appendix reveals the layers of what a firm's equity value consists of. The lower bound observed in Figure 1 is equal to zero. The first level of equity value represents net assets, which are valued at historical cost. In other words, the value of a net asset is the sum of the historic cost of an asset, adjusted for its accumulated depreciation. The second tier displays the book value of net assets. The difference between the book value of net assets and valuation at historical cost, is that the former includes verifiable gains in the value of separable assets. However, the first and second level of a firm's market value of equity both only incorporate verifiable information in the valuation of net assets.

The incremental value of the third tier is the equivalent of all unverifiable increases in value of separable net assets. Therefore, accountants do not include these financial gains, as they are unverifiable. However, the value of the third tier is expected to be gradually incorporated in the future book value of net assets, once these gains can be confirmed by the accountant. And so, there exists an accounting slow-up between the book value of net assets and the net asset value (Roychowdhury & Watts, 2007). Besides, verification thresholds for recognizing gains or losses can vary per firm, and conservatism is a particular form of verification thresholds. Specifically, conditional conservatism entails asymmetric verification requirements for the recognition of financial gains and losses. In other words, the accountant necessitates a higher level of verification to recognize good news compared to bad news. Consequently, the size of the divergence concerning the recognition requirements for gains versus losses reflects the magnitude of the gap between the second and third level in Figure 1.

Finally, the fourth and contemptuously highest layer of Figure 1 displays rents. Rents is defined as abnormal returns on a firm's net asset base. Thus, rents include among other things, growth opportunities and monopoly power. These net assets are both unverifiable as non-separable. Non-separable means that the economic gains result from an efficient combination of assets and can therefore not be attributed to one line item. Accounting standards recognize rents only in business contexts like mergers and acquisitions. In such circumstances the rents are merged to a separable line item, which is referred to as goodwill. Rents are only accounted for by exception, and should therefore not be included in a measure of (conditional) conservatism.

2.2 Sarbanes-Oxley Act

Publicly traded companies are obligated to prepare financial statements free from material misstatements. Additionally, the financial statements must be in accordance with an applicable accounting standard framework. In other words, a publicly traded entity is responsible for providing faithful and accurate financial information to investors, and other users of financial statements. However, the former mentioned accounting scandals and corporate scandals confronted both investors

and the general public with a harsh truth. Specifically, these corporate scandals provide evidence that executives and accountants purposefully mislead users of financial statements. Therefore, corporate scandals like Enron, WorldCom, and Tyco International impaired the confidence of both investors and the general public in the U.S. capital market. To restore trust in the capital market, the U.S. senate passed a federal law in 2002, which is referred to as the Sarbanes-Oxley Act. The Sarbanes-Oxley Act is mandated for all publicly traded companies, and entities that are in the process of initiating an initial public offer. The Act reinforces both auditor and corporate legislation, that encourage more transparent and accurate financial reporting for publicly traded entities (Anand, 2011).

2.3 Agency Theory

The agency theory involves two economic actors. The shareholders and stakeholders (principles), and the executive directors (agents). In addition to land, labour and capital, economic actors vary from each other with respect to information access, aspirations and risk attitudes. These divergences result in a conflict of interest appearing in best-perceived business decisions. Costs arising from these disputes are called agency costs. Examples of agency costs are sub-optimal business decisions for shareholder wealth and cost incurred to monitor managers. Moreover, asymmetric pay-off functions, information asymmetry, limited tenure and limited liability intensify agency problems. First of all, asymmetric pay-off functions serve as an incentive for managers to transfer shareholder wealth to themselves. Secondly, information asymmetry introduces adverse selection and presents opportunities to mislead principles. Finally, limited liability and limited tenure provide executive directors with an opportunity to behave in a manner, which is referred to as moral hazard. For instance, limited liability makes it impossible to force reimbursement of deadweight losses. Principles attempt to reduce agency costs through contractual agreements and corporate governance. The corporate scandals in the late 1990s and early 2000s are an example of agency problems and the passage of the Sarbanes-Oxley Act is an example of an attempt to reduce agency problems through corporate governance.

2.4 Explanations for accounting conservatism

Watts (2003) documents four explanations for the demand of accounting conservatism inside financial statements. These four explanations deal with contracting, litigation, income-tax, and regulation. Firstly, the contracting explanation argues that accounting conservatism is a means of addressing agency problems. As mentioned before, agency problems are lessened through contractual agreements and corporate governance. Asymmetric verifications requirements result in timely loss recognition. Timely loss recognition increases the quality of information used in debt contracts, compensation contracts, and decisions surrounding corporate governance. Therefore, reporting conservatism serves as an efficient contracting mechanism (Watts, 2003). The litigation explanation articulates that the probability of litigation is much more likely when earnings or net assets are overstated instead of understated.

Next, the income-tax explanation argues that tax-book conformity serves as an incentive to practice accounting conservatism. Specifically, the firm uses asymmetric verification standards in order to reduce the firm's taxation costs. Lastly, the regulation explanation for accounting conservatism expresses that companies undervalue net assets and income to steer clear from regulation costs (Watts, 2003).

2.5 Sarbanes-Oxley Act and Conservatism

The Sarbanes-Oxley Act formulates several obligations for firms, auditors and the management of firms. These obligations relate to accountability, accuracy, integrity and corporate governance.

First of all, the Sarbanes-Oxley Act requires Chief Executive Officers (CEOs), and Chief Financial Officers (CFOs) to verify the accuracy of financial reports and to take accountability for any material errors inside financial statements (Anand, 2011). If any material errors inside financial statements exist, the CEO or CFO faces penalties in the form of legal liabilities. These potential penalties increase the prospective litigation costs of CEOs and CFOs (Lobo & Zhou, 2006). In addition, when an entity's net assets and/or net income numbers are less conservative, the probability of litigation increases (DuCharme et al., 2004). Therefore, the Sarbanes-Oxley Act advocates reporting conservatism to CEOs and CFOs to avoid litigation costs.

Next, company executives bear the responsibility to establish a reporting process, that includes internal controls to ensure the accuracy of the financial information. The Sarbanes-Oxley Act obligates CEOs and CFOs to attest the company's internal control system, every consecutive year. First, they perform baseline test on internal controls, thereafter the CEO and CFO attest whether the firm's internal controls are sufficient and effective. Likewise material errors inside financial statements, CEOs and CFOs can be prosecuted for ineffective or insufficient internal control systems. Thus, the Sarbanes-Oxley Act provides an incentive to implement internal control systems that allows the CEO and CFO to enforce the preparation of financial statement using asymmetric verification requirements to dodge litigation costs (Ribstein, 2002).

Besides, internal controls are an integral part of an entity's corporate governance system. Corporate governance is a collection of procedures in order to ensure that the firm's assets are used as intended. To put it differently, corporate governance structures ensure that entities' executives and employees behave in an ethical manner, while attempting to achieve pre-determined objectives. The corporate scandals in the late 1990s and early 2000s shed light on the fact that corporate governance systems of at least some publicly traded companies were insufficient and ineffective. Therefore, the Sarbanes-Oxley Act focusses on improving the corporate governance environment of publicly traded entities. For example, the Sarbanes-Oxley Act requires that at least half members of the board are non-executive directors. Non-executive directors have disadvantage regarding information access compared to managers. Furthermore, asymmetric verification requirements result in timely loss recognition, and therefore provides independent directors more timely information. Hence, a well-functioning corporate

governance system values conservative accounting numbers (García Osma & Penalva, 2009). Moreover, prior research provides supporting evidence that firms can adjust their information environment to suit the informational demands of a particular board structure (Armstrong et al., 2014).

The Sarbanes-Oxley act set up the Public Company Accounting Oversight Board (PCAOB). The main objective of the PCAOB is to improve the information environment of the capital market through guiding and disciplining accounting firms. The PCAOB has the authority to charge accounting firms or individuals of an accounting firm, that participated in corrupt practices, either intentionally or unintentionally. The PCAOB increases the potential litigation costs for accounting firms and individual auditors (Lobo & Zhou, 2006). Further, section 103 of the Sarbanes-Oxley Act requires that auditors keep all documents related to the audit report for a minimum of seven years. These documents increase the likelihood of getting caught in subsequent years after committing fraud in the past. Moreover, the probability of litigation increases when a company's net assets and/or net income numbers are more aggressive (DuCharme et al., 2004). Therefore, the PCAOB introduces a litigation demand for conservatism (Watts, 2003). Therefore, the first hypothesis of this paper states as follows.

Hypothesis 1: Firms practice more conditional conservatism in the post-SOX period compared to the pre-SOX period.

2.6 The Sarbanes-Oxley Act and the Investment Opportunity Set

Watts (2003) argues that four factors influence a firm's level of reporting conservatism. All these factors are interrelated with a firm's investment opportunity set. A firm's investment opportunity set can be mapped out by three key variables, which are respectively the market-to-book ratio, firm size and leverage.

High-growth firms generally have a high market value in comparison to their book value. Additionally, high-growth firms tend to have substantial agency problems. Further, conservatism serves as an efficient mechanism to address agency problems through corporate governance (Watts, 2003). Therefore, this implies a positive association between the market-to-book ratio and reporting conservatism. Further, the Sarbanes-Oxley Act attempts to reduce agency problems through corporate governance. Thus, the Sarbanes-Oxley Act has a greater effect on firms with a high market-to-book ratio. As well, firms with a market value that significantly exceeds their book value tend to have unstable stock returns. Volatile stock returns tend to trigger shareholder class action litigation (Beck & Bhagat, 1997). Thus, firms with a high market-to-book ratio are hypothesized to have increased prospect of litigation costs. Moreover, the Sarbanes-Oxley Act overall increases the potential litigation costs for firms. For these reasons, firms with relatively low assets in place have an increased demand for accounting conservatism and the second hypothesis of this paper states the following.

Hypothesis 2: The positive relationship between the Sarbanes-Oxley Act and conditional conservatism is stronger for firms with a relatively high market-to-book ratio.

Generally, larger firms are more established and therefore have both a reduced amount of overall uncertainty and fewer agency problems related to information asymmetry (Yoon et al., 2011). This implies that larger entities have a lower contracting demand for conservatism. The Sarbanes-Oxley Act aims to decrease agency problems through an improvement of firms' corporate governance systems. Smaller firms normally have more agency problems. Therefore, smaller firms generally have more room for improvement in the context of corporate governance structures. Thus, the impact of the Sarbanes-Oxley Act is likely to be bigger on smaller firms in comparison to larger firms. In contrast, larger firms have a higher likelihood of being sued (Malm & Krolikowski, 2017). Hence, the measures of the Sarbanes-Oxley Act can increase prospective litigation costs. This suggests that larger firms have a higher litigation demand for conservatism. To this end, the third hypothesis is formulated as follows.

Hypothesis 3: The positive relationship between the Sarbanes-Oxley Act and conditional conservatism is similar for firms relatively large in size.

Following the pecking-order theory, highly levered firms generally have more agency problems in the form of information asymmetry (Hajawiyah et al., 2020). The Sarbanes-Oxley Act attempts to increase the reporting transparency by enforcing stricter corporate governance systems on publicly traded firms in the United States. Additionally, accounting conservatism provides more timely information regarding bad news to governance bodies. Therefore, corporate governance bodies value conservative accounting numbers. Thus, when highly leveraged firms demonstrate high information asymmetry, corporate governance mechanisms put more emphasis on conditional conservatism in order to relieve agency conflicts and to realize a more transparent system of financial reporting. Thus, highly levered firms have a higher contracting demand for accounting conservatism. Therefore, the fourth hypothesis of this papers states the following.

Hypothesis 4: The positive relationship between the Sarbanes-Oxley Act and conditional conservatism is stronger for firms with a relatively high leverage ratio.

3. Data and Methodology

3.1 Sample selection and descriptive statistics

To examine the effect of the Sarbanes-Oxley Act on conservatism, this paper conducts a quantitative research. The initial dataset is retrieved from Wharton Data Research Service (WRDS), where panel data about annual fundamentals and financial ratios is collected from Compustat and security information from CRSP. Subsequently, The three panel datasets are merged. The primary sample consists of 8,901 publicly traded firms in the United States that provide 62,896 firm-year observations over a sample period from 1995 until 2006. Thereafter, all firm-year observations before 1999 are deleted. Next, all firms that have missing data for any of the variables used in the empirical analysis are eliminated. These filters result in a final sample of 5,773 unique firms, which provide 30,731 firm-year observations. Subsequently, all firm-year observations are winsorized at the bottom and top five percent to eliminate the effect of outliers. Table 10 of the Appendix presents the definitions of the variables used in the regression analyses.

Table 1 Sample selection

	Observations
<i>Initial sample: collected from WRDS and CRSP</i>	62,896
<i>Less:</i>	
Firm-year observations before 1999	7,725
Missing data in any of the variables	24,440
<i>Final sample</i>	30,731

Table 1 presents the initial data sample, and the way the final sample is assembled.

Table 2 displays the descriptive statistics of the variables that construct the dependent variable, the independent variables and control variables. Table 2 shows the average of earnings is -0.039 for the final sample. This means that companies on average had a negative net income before extraordinary items, scaled by the one year-lagged market value. In contrast, the mean of returns is greater than zero. One possible explanation for this observed divergence could be that companies generally prepare financial statements according to conservative accounting practices. However, it could also be explained by the fact that companies included in the final sample, on average do make profits after extraordinary items. In addition, it could also be due to other (non)-financial information, which is included in security prices, but not in earnings. The mean of the market-to-book ratio is 2.676. This indicates that entities generally have a market value that is 2.676 times as high as their book value of equity. This suggests that companies normally exercise reporting conservatism. Moreover, it also suggests that companies generally have been applying asymmetric verification standards during their whole lifetime, as the market-to-book ratio is a proxy for the aggregate effect of reporting conservatism. Additionally, more or less 54 percent of the financial statements included in our final sample are prepared in accordance with the Sarbanes-Oxley Act and approximately 80 percent is audited by a member of the Big five.

Table 2 Descriptive statistics

Variable	Obs.	Mean	Median	Std. Dev.	Min.	Max.
<i>Panel A: Descriptive statistics</i>						
Earnings	31,013	-0.039	0.036	0.384	-8.600	10.926
Returns	30,013	0.157	0.025	0.737	0.883	3.455
Size	31,013	5.417	5.385	2.121	1.760	9.209
Market-to-book ratio	31,013	2.676	1.818	2.372	0.500	9.677
Leverage	31,013	1.666	0.954	1.972	0.116	7.982
SOX	31,013	0.540	1	0.498	0	1
Auditor	31,013	0.802	1	0.398	0	1
Industry	31,013	5.597	4	2.345	0	11
Growth rate	30,731	1.113	1.075	0.275	0.627	1.821
Profitability	30,013	0.036	0.637	0.140	-0.365	0.229

Table 2 presents a summary of the descriptive statistics of the complete set of variables between 1999 and 2006. Earnings is measured as the net income before extraordinary items, scaled by the one-year lagged market value. Profitability is the natural logarithm of cashflow from operations.

Subsequently, table 3 in the Appendix, presents the results of the Pearson correlation matrix between the selection of variables. From the results obtained in table 3, it is concluded that there exists weak correlation between the selected variables. The coefficient with the highest correlation is equal to -0.365 and is between auditor and C-score, as seen in table 3 in the Appendix. Because there only is a weak correlation between the selection of variables, this study assumes no problems related to multicollinearity occur in the multivariate regressions.

3.2 Variables

Sarbanes-Oxley act

The main variable of interest is the Sarbanes-Oxley Act, which is a dummy variable. The variable takes the value of one if firm i in year t published their financial reports in line with the Sarbanes-Oxley Act, and zero otherwise. The Sarbanes-Oxley Act came into effect on the 31th of July 2002. Therefore, firm-year observations before 2002 take the value of zero. Firm-year observations in 2002 can take both binary values, based on the firm's fiscal year-end. Particularly, firms with a fiscal year-end before August take the value of zero, and firms with a fiscal year-end from August take the value of one. Ultimately, firm-year observations from 2003 take a value of one.

Conservatism

This research employs the conditional conservatism measure designed by Khan and Watts (2009). Their measure of conditional conservatism is an extension of the Basu (1997) measure of conservatism, which is widely used in previous literature. The conditional conservatism measure created by Basu (1997) captures the asymmetric timeliness of earnings with respect to current returns. The asymmetric timeliness coefficient essentially calculates the value-relevance of current year income to current returns and is estimated through the following regression model.

$$\frac{X_{i,t}}{P_{i,t-1}} = \beta_0 + \beta_1 D_{i,t} + \beta_2 R_{i,t} + \beta_3 D_{i,t} R_{i,t} + \varepsilon_{i,t}$$

$X_{i,t}$ = Net income before extraordinary items of firm i in year t .

$P_{i,t-1}$ = Security price of firm i in year $t-1$.

$R_{i,t}$ = Security market return of firm i in year t .

$D_{i,t}$ = Dummy variable takes value of one if R of firm i in year t is negative, and zero otherwise.

The β_2 represents earnings timeliness with respect to good news (G-score). β_3 represents the incremental timeliness for bad news over good news. Next, the $\beta_2 + \beta_3$ expresses the earnings timeliness with respect to bad news (C-score). The Basu (1997) earnings timeliness coefficient is an industry-year measure. However, conservatism is an outcome of firm-specific factors (Watts, 2003). Khan and Watts (2009) argue that the most important factors determining conditional conservatism are related to a firm's investment opportunity set. Respectively, they utilize the market-to-book ratio, firm size and leverage, because these factors are determinants of a firm's investment opportunity set and widely available. Khan and Watts (2009) articulate that G-score, and C-score can be computed by the following linear regression.

$$G - score_{i,t} = \beta_2 = \gamma_0 + \gamma_1 Size_{i,t} + \gamma_2 \frac{M}{B}_{i,t} + \gamma_3 Leverage_{i,t}$$

$$C - score_{i,t} = \beta_3 = \gamma_0 + \gamma_1 Size_{i,t} + \gamma_2 \frac{M}{B}_{i,t} + \gamma_3 Leverage_{i,t}$$

$Size_{i,t}$ = The natural logarithm of total assets of firm i in year t .

$M/B_{i,t}$ = The market-to-book ratio of firm i in year t .

$Leverage_{i,t}$ = The debt-to-equity ratio of firm i in year t .

Subsequently, Khan and Watts (2009) substitute the linear functions of the G-score and C-score into the multivariate regression of the Basu (1997) earnings timeliness measure in the following manner to construct a conditional conservatism measure at the firm level.

$$\frac{\widehat{X}_{i,t}}{P_{i,t-1}} = \beta_0 + \beta_1 D_{i,t} + R_{i,t} (\gamma_0 + \gamma_1 Size_{i,t} + \gamma_2 \frac{M}{B}_{i,t} + \gamma_3 Leverage_{i,t}) + D_{i,t} R_{i,t} (\gamma_0 + \gamma_1 Size_{i,t} + \gamma_2 \frac{M}{B}_{i,t} + \gamma_3 Leverage_{i,t}) + \varepsilon_{i,t}$$

Auditor

Big five auditors have more legal liability exposure than non-big five audit firms (Basu, Hwang & Jan, 2001). Therefore, big five Auditors force more reporting conservatism on their client's financial statements than non-big five auditors. Big five auditors have a higher number of clients and are therefore less dependent on individual clients (Tepalagul & Lin, 2015). Consequently, big five auditors have more power over their clients than smaller audit firms to enforce reporting conservatism. Furthermore, the corporate scandals in the late 1990s and early 2000s eroded the confidence of investors in external auditors. The Sarbanes-Oxley Act aims to restore the public confidence in auditors through increasing monitoring of audit firms by the PCAOB. Moreover, big five audit firms are more heavily scrutinized

by the PCAOB, since their clients are bigger in size and are more important to the general public. The firm's auditor is included as a control variable in the form of a dummy variable, which takes the value of one if a firm is audited by a firm belonging to the big five, and zero otherwise.

Firm growth

A firm's investment opportunity set is the most important determinant of reporting conservatism. The investment opportunity set reflects whether a company has growth potential. Firms with growth options tend to have a higher demand for reporting conservatism compared to entities that relatively have lots of assets in place (Khan & Watts, 2009). In addition, the Sarbanes-Oxley Act attempts to enforce deeper monitoring and supervision on publicly listed entities and firms with high growth options generally have more agency problems (Sun, Lan, G & Ma, 2014). Therefore, the imposed regulation of the Sarbanes-Oxley Act is expected to have a bigger impact on firms with loads of growth opportunities. Thus, a firm's growth is added as a control variable and is estimated by the following formula.

$$Firm' growth = \frac{Revenue_{i,t}}{Revenue_{i,t-1}}$$

Firm profitability

The market-to-book ratio is a widely used measure for conservatism in accounting literature (Beaver & Ryan, 2000). Variance in the market-to-book ratio is caused by operating activities instead of finance activities (Feltham & Ohlson, 1996). Hence, a firm's operating activities influence the firm's level of conservatism. For example, Ahmed and Henry (2012) document that operating profitability is negatively associated with reporting conservatism. The Sarbanes-Oxley Act imposes a number of costs on firms (Ahmed, et al., 2010). The passage of the Sarbanes-Oxley Act results in a significant fall of the firm profitability measured by cash flow from operations (Ahmed, et al., 2010). Therefore, firm profitability is added as a control variable and is proxied by the entity's cash flow from operations scaled by its total assets. Accordingly, the method of a firm's profitability is displayed beneath.

$$Firm' profitability = \frac{Cashflow\ from\ operations_{i,t}}{Total\ assets_{i,t-1}}$$

3.3 Empirical Analysis

This paper examines the effect of the Sarbanes-Oxley Act on conditional conservatism with an Ordinary Least Squares (OLS) regression analysis. The first hypothesis expects that the Sarbanes-Oxley Act positively affects the level of accounting conservatism and is tested with a multivariate regression with the full sample. The multivariate regression includes control variables and industry fixed-effects and year fixed-effects. Moreover, the multivariate regression also controls for the market-to-book ratio, firm size and leverage, because failing to control for the inputs of the C-score may result in finding an association between conservatism and the Sarbanes-Oxley Act where there is no association (Khan & Watts, 2009). Further, the standard errors are clustered by the means of firms to alleviate the bias

introduced by repeating firms and years. The first hypothesis is examined with the multivariate regression stated below.

$$C - Score_{i,t} = \beta_0 + \beta_1 SOX_{i,t} + \beta_2 Market - to - Book_{i,t} + \beta_3 Size_{i,t} + \beta_4 Leverage_{i,t} + \beta_5 Auditor_{i,t} + \beta_6 Year_{i,t} + \beta_7 Growth_{i,t} + \beta_8 Profitability_{i,t} + Industry - fixed - effects + \varepsilon_{i,t}$$

Hypothesis one hypothesises that the Sarbanes-Oxley Act increases the demand for reporting conservatism inside financial statements. Therefore, it is expected that the coefficient of the Sarbanes-Oxley Act variable (β_1) holds a significant positive relationship with the C-score. The coefficient of the auditor variable is expected to be positive. The growth variable is expected to hold a positive relationship with the C-score. Finally, the coefficient of profitability is projected to have a negative effect on a firm's level of reporting conservatism.

The other hypotheses examine whether the impact of the Sarbanes-Oxley Act on accounting conservatism differs across firms based on their market-to-book ratio, size or leverage. The second, third and fourth hypotheses are tested with the same multivariate regression as hypothesis one. However, the multivariate regression include interaction terms between the Sarbanes-Oxley Act and the market-to-book ratio, firm size and leverage. The multivariate regression that examines whether the market-to-book ratio moderates the relationship between the Sarbanes-Oxley Act and reporting conservatism is displayed below.

$$C - Score_{i,t} = \beta_0 + \beta_1 SOX_{i,t} + \beta_2 Market - to - Book_{i,t} + \beta_3 Size_{i,t} + \beta_4 Leverage_{i,t} + \beta_5 Auditor_{i,t} + \beta_6 Year_t + \beta_7 Growth_{i,t} + \beta_8 Profitability_{i,t} + \beta_9 SOX \times Market - to - book_{i,t} + Industry - fixed - effects + \varepsilon_{i,t}$$

The multivariate regression that's explores whether firm size moderates the link between the Sarbanes-Oxley Act and accounting conservatism is displayed beneath.

$$C - Score_{i,t} = \beta_0 + \beta_1 SOX_{i,t} + \beta_2 Market - to - Book_{i,t} + \beta_3 Size_{i,t} + \beta_4 Leverage_{i,t} + \beta_5 Auditor_{i,t} + \beta_6 Year_t + \beta_7 Growth_{i,t} + \beta_8 Profitability_{i,t} + \beta_9 SOX \times Size_{i,t} + Industry - fixed - effects + \varepsilon_{i,t}$$

The multivariate regression which tests if capital structure moderates the effect of the Sarbanes-Oxley Act on reporting conservatism is displayed below.

$$C - Score_{i,t} = \beta_0 + \beta_1 SOX_{i,t} + \beta_2 Market - to - Book_{i,t} + \beta_3 Size_{i,t} + \beta_4 Leverage_{i,t} + \beta_5 Auditor_{i,t} + \beta_6 Year_t + \beta_7 Growth_{i,t} + \beta_8 Profitability_{i,t} + \beta_9 SOX \times Leverage_{i,t} + Industry - fixed - effects + \varepsilon_{i,t}$$

4. Empirical Results

4.1 Reporting conservatism

Table 4 displays the average of the coefficients and additional output of the Khan and Watts (2009) regression in chapter 3. The regression ran annually from 1999 until 2006. The $D \times Returns$ coefficient reflects earnings timeliness with respect to bad news. This coefficient is equal to 0.653 and is statistically significant at the one percent level. Furthermore, the coefficient of the variable R represents earnings timeliness with respect to good news. The coefficient of the variable R is 0.005 and is not statistically significant. This suggest that on average, returns do not reflect the positive annual earnings of the current year. The findings of these two variables are in line with the notion that on average, firms apply asymmetric verification requirements regarding good news and bad news.

Table 4 Mean coefficients from estimation of the Fama-Macbeth regressions (dependent variable earnings scaled by lagged market value).

Independent variable	Predicted sign	Coefficient	t-statistic
<i>Panel A: Descriptive statistics</i>			
Intercept		-0.122	2.954
D (dummy variable which takes value of 1 if $R < 0$)		0.022	1.023
Returns	+	0.005	0.848
Returns x Size	+	0.003	1.090
Returns x Market-to-book ratio	-	-0.003	1.207
Returns x Leverage	-	0.010	1.098
D x Returns	+	0.653	4.043
D x Returns x Size	-	-0.101	3.661
D x Returns x Market-to-book ratio	+	-0.007	1.472
D x Returns x Leverage	+	0.025	0.973
Size		0.027	3.752
Market-to-book ratio		-0.003	2.077
Leverage		-0.012	1.096
D x Size		-0.006	0.975
D x Market-to-book ratio		-0.001	1.029
D x Leverage		0.008	1.233
Adjusted R squared		0.145	

This table shows mean coefficients from annual cross-sectional (Fama–Macbeth) regressions of earnings on the variables listed, on a sample of 30,731 firm-years from 1999 until 2006. D is a dummy variable, that takes the value of 1, if returns are negative, and 0 if returns are positive. Size is the natural log of market value of equity. The R squared is the average of the R squares from the seven yearly regressions. The parameter estimates in the table are used to calculate the C-Score and G-Score as described in the methodology.

Besides, the coefficient of the variable $D \times Returns \times size$ is -0.101 and is statistically significant on the one percent level. This finding is in line with the rationale that larger firms tend to have a reduced amount of overall uncertainty and agency problems. Therefore, large firms require less accounting conservatism. The intercept is negative and significant on the one percent level. One possible explanation could be that this is due to a negative mean for earnings in the final sample. Furthermore,

all the coefficients' directions of the variables are in line with the expected direction of the coefficient, except for the variables *Returns x Leverage* and *D x Returns x Market-to-book ratio*. However, the magnitudes of both coefficients are small and not statistically significant.

Table 5 presents the descriptive statistics of the *C-score* and the *G-score*. On average, the *C-score* is the equivalent of 0.128, and the *G-score* is 0.026. This indicates that earnings reflect both good and bad news in the context of annual returns. Additionally, the *C-score* is larger than the *G-score*. This suggests that earnings reflect bad news in a timelier manner than good news. Thus, the findings of the *C-score* and *G-score* suggest reporting conservatism and are in line with prior research (Khan & Watts, 2009).

Table 5 Descriptive statistics C-score and G-score

	Mean	Std. Dev.	Q1	Median	Q3
<i>Panel A: Descriptive statistics of C-score and G-score</i>					
C-score	0.128	0.278	-0.516	0.117	0.291
G-score	0.026	0.058	-0.068	0.018	0.055

This table shows the descriptive statistics of the resulting C-score and G-score from 1999 until 2006.

4.2 The Sarbanes-Oxley and reporting conservatism

The first hypothesis examines the effect of the Sarbanes-Oxley Act on accounting conservatism. In the first regression model of table 6, the *C-score* is the dependent variable. In this multivariate regression model, the coefficient of the *Sarbanes-Oxley Act* dummy corresponds to the relative effect and is both negative and statically significant at the one percent level. This finding is in conflict with the expected relationship between the *Sarbanes-Oxley Act* and the *C-score*. This result indicates that following the Sarbanes-Oxley Act, firm's earnings generally became less timely with respect to reflecting bad news. In addition, the second multivariate regression analysis that also tests hypothesis one utilises the *G-score* as the dependent variable instead of the *C-score*. In this multivariate regression model, the coefficient of the *Sarbanes-Oxley Act* equals 0.001 and is not statistically significant. this finding suggests that the Sarbanes-Oxley Act on average did not have any effect on a firm's *G-score*. Overall, these findings suggest a negative relationship between the Sarbanes-Oxley Act and accounting conservatism. One plausible explanation for this finding is that the Sarbanes-Oxley Act is heavy in rhetoric and light in reform. Specifically, the Sarbanes-Oxley Act mostly formalises an assortment of previously active regulations. Therefore, the passage of the Sarbanes-Oxley Act does not impose additional contracting, litigation, regulation costs on firms. Thus, the Sarbanes-Oxley Act does not result in an extra demand for reporting conservatism. In contrast, the result of the first regression model suggests that publicly listed firms in the United States generally apply less asymmetric verification requirements subsequent to the passage of the Sarbanes-Oxley Act. This could be explained by the following reason. The Sarbanes-Oxley Act effectively increases the (perceived) reliability of financial reporting through an improvement of the overall confidence in financial markets. Consequently, the (seeming) increase in the reliability of financial statements resulted in a lower contracting demand for conservatism.

Table 6 Multivariate regression results for the relationship between C-score, G-score, and the Sarbanes-Oxley Act – Hypothesis 1

Variable	Regression 1	Regression 2
	C-score	G-score
SOX	-0.037*** (0.003)	0.001 (0.001)
Market-to-book ratio	-0.008*** (0.001)	-0.003*** (0.000)
Firm size	-0.089*** (0.002)	-0.011*** (0.001)
Leverage	0.025*** (0.002)	0.010*** (0.000)
Auditor	-0.003 (0.005)	0.008*** (0.001)
Year	0.019*** (0.001)	0.004*** (0.000)
Firm growth	0.000 (0.000)	0.000*** (0.000)
Firm profitability	-0.002 (0.009)	0.009*** (0.002)
Intercept	-38.907*** (1.313)	-8.828*** (0.473)
Observations	30,731	30,731
R ²	0.659	0.110

Table 6 presents the results of the OLS regression for hypothesis 1. The main variable of interest is the SOX. The sample consists of 30,731 firm-year observations of publicly traded American companies., for the period of 1999-2006. Variables are defined in chapter 3. All continuous variables are winsorized at the top and bottom 5% of the distribution. Industry and Year fixed effects are included in the regression analysis.

Note. Standard errors are in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Next, the results of the control variables are briefly discussed. Firstly, the market-to-book ratio, firm size and leverage are not interpreted because they are only included because these variables are input to the dependent of both regression models (Khan & Watts, 2009). Secondly, the *auditor* dummy holds a negative relationship with the *C-score* that is statically insignificant. Additionally, the *auditor* dummy has a significant positive effect on the *G-score*. Subsequently, *firm growth* proxied as the percentual growth in revenue does neither have a significant economic effect on the C-score or G-score. The coefficients of the variable *firm profitability* are equal to -0.002 and 0.009 for the *C-score* and *G-score*, as seen in Table 6. However, only the coefficient in the second regression model is statistically significant at the one percent level. This results is in accordance with the previous literature on accounting conservatism suggesting that relatively profitable firms have earnings that are more timely with respect to good news (Ahmed, et al., 2010).

Table 7 Multivariate regression results for moderating effect of the Market-to-book ratio on the relationship between C-score, G-score, and the Sarbanes-Oxley Act – Hypothesis 2

Variable	Regression 1	Regression 2
	C-score	G-score
SOX	-0,069*** (0.004)	-0.000 (0.001)
Market-to-book ratio	-0.013*** (0.001)	-0.003*** (0.000)
Firm size	-0.088*** (0.002)	-0.011*** (0.001)
Leverage	0.024*** (0.002)	0.010*** (0.000)
Auditor	-0.004 (0.004)	0.008*** (0.001)
Year	0.018*** (0.001)	0.004*** (0.000)
Firm growth	0.000 (0.000)	0.000*** (0.000)
Firm profitability	-0.004 (0.009)	0.009*** 0.002
SOX x Market-to-book ratio	0.013*** (0.002)	0.000 (0.000)
Intercept	-35.166*** (1.287)	-8.789*** (0.483)
Observations	30,731	30,731
R ²	0.665	0.110

Table 7 presents the results of the OLS regression for hypothesis 2. The main variable of interest is the SOX x Market-to-book ratio. The sample consists of 30,731 firm-year observations of publicly traded American companies., for the period of 1999-2006. Variables are defined in chapter 3. All continuous variables are winsorized at the top and bottom 5% of the distribution. Industry and Year fixed effects are included in the regression analysis.

Note. Standard errors are in parentheses; * p < 0.10, ** p < 0.05, *** p < 0.01.

4.3 The Sarbanes-Oxley, market-to-book ratio and reporting conservatism

Table 7 presents the results of the multivariate regression model, which examines hypothesis two. Hypothesis two expects that the effect of the Sarbanes-Oxley Act on reporting conservatism is bigger for firms with a relatively high market-to-book ratio. The dependent variables of the two regression models are respectively the *C-score* and *G-score*. The outcome of the first regression model is consistent with hypothesis two. Specifically, the main variable of interest, *SOX x Market-to-book ratio* is positive and statistically significant at the one percent level. This provides evidence that the effect of the Sarbanes-Oxley Act on accounting conservatism varies between firm-specific factors. In addition, the market-to-book ratio does not moderate the effect of the Sarbanes-Oxley Act on reporting conservatism with respect to good news. Further, this finding confirms that the Sarbanes-Oxley Act intends to mitigate agency problems. Agency conflicts are more prominent within firms with relatively low assets in place. The Sarbanes-Oxley act mandates the introduction of governance mechanisms, and increases the potential legal liabilities for firm and their representatives. Accordingly, these implemented monitor systems value asymmetric verification requirements to lessen agency problems, like information

asymmetry. In addition, the increased scrutiny resulting from the Sarbanes-Oxley Act also forces firms with a high market-to-book ratio to incorporate reporting conservatism. One plausible way to interpret these results is to conclude that the Sarbanes-Oxley Act effectively reduces agency conflicts for firms that tend to have more agency problems. Moreover, the outcome of this study also confirms the necessity of firm-year level measure of conservatism instead of an industry-year measure, to make causal inferences about the effect of a construct on conditional conservatism. Overall, the findings of this study are consistent with hypothesis two.

Table 8 Multivariate regression results for the moderating effect of firm size on the relationship between C-score, G-score, and the Sarbanes-Oxley Act – Hypothesis 3

Variable	Regression 1	Regression 2
	C-score	G-score
SOX	0.054*** (0.005)	-0.022*** (0.002)
Market-to-book ratio	-0.008*** (0.001)	-0.002*** (0.000)
Firm size	-0.080*** (0.002)	-0.013*** (0.001)
Leverage	0.025*** (0.002)	0.010*** (0.000)
Auditor	0.014*** (0.005)	0.004*** (0.001)
Year	0.022*** (0.001)	0.004*** (0.000)
Firm growth	0.000 (0.000)	0.000*** (0.000)
Firm profitability	-0.001 (0.009)	0.009*** (0.002)
SOX x Firm size	-0.018*** (0.001)	0.004*** (0.000)
Intercept	-42.529*** (1.373)	-7.715*** (0.503)
Observations	30,731	30,731
R ²	0.663	0.111

Table 8 presents the results of the OLS regression for hypothesis 3. The main variable of interest is the SOX x Firm size. The sample consists of 30,731 firm-year observations of publicly traded American companies, for the Period of 1999-2006. Variables are defined in chapter 3. All continuous variables are winsorized at the top and bottom 5% of the distribution. Industry and Year fixed effects are included in the regression analysis.

Note. Standard errors are in parentheses; * p < 0.10, ** p < 0.05, *** p < 0.01.

4.4 The Sarbanes-Oxley, firm size and reporting conservatism

The third hypothesis examines whether the effect of the Sarbanes-Oxley Act on reporting conservatism varies with firm size. Table 8 summarizes the results of the multivariate regression analyses testing hypothesis 3. The *C-score* is dependent variable in Regression 1 of Table 8 and the coefficient of the *SOX x Size* is both negative and statistically significant at the one percent level. Additionally, in the second regression analysis with the *G-score* as the dependent variable, the coefficient of the *SOX x Size* is positive as well as statistically significant at the one percent level. These findings are in line with the

notion that smaller firms generally apply greater asymmetric verification requirements than larger firms, following the passage of the Sarbanes-Oxley Act. One plausible explanation could be that smaller firms generally have more agency problems, higher overall uncertainty and less developed corporate governance systems. Thus, the provisions of the Sarbanes-Oxley Act intend to mitigate agency problems via corporate governance and therefore are more impactful on smaller firms. In practice, smaller firms implement new corporate governance systems and enhance their internal controls after the Sarbanes-Oxley Act came into effect. Moreover, corporate governance bodies demand conservative reporting in order to obtain timely earnings information with respect to financial losses. Overall, one can conclude that hypothesis three is rejected based on the findings presented in Table 8. Firm size negatively moderates the effects of the Sarbanes-Oxley Act on reporting conservatism.

Table 9 Multivariate regression results for the moderating effect of leverage of the relationship between C-score, G-score, and the Sarbanes-Oxley Act – Hypothesis 4

Variable	Regression 1	Regression 2
	C-score	G-score
SOX	-0.084*** (0.004)	-0.004** (0.001)
Market-to-book ratio	-0.008*** (0.001)	-0.003*** (0.000)
Firm size	-0.088*** (0.002)	-0.011*** (0.001)
Leverage	0.008*** (0.002)	0.009*** (0.001)
Auditor	-0.007 (0.005)	0.008*** (0.001)
Year	0.020*** (0.001)	0.004*** (0.000)
Firm growth	0.000 (0.000)	0.000*** (0.000)
Firm profitability	0.004 (0.002)	0.009*** (0.002)
SOX x Firm leverage	0.029*** (0.002)	0.003*** (0.000)
Intercept	-38.742*** (1.317)	-8.902*** (0.476)
Observations	30,731	30,731
R ²	0.684	0.112

Table 9 presents the results of the OLS regression for hypothesis 4. The main variable of interest is the SOX x Leverage. The sample consists of 30,731 firm-year observations of publicly traded American companies., for the Period of 1999-2006. Variables are defined in chapter 3. All continuous variables are winsorized at the top and bottom 5% of the distribution. Industry and Year fixed effects are included in the regression analysis.

Note. Standard errors are in parentheses; * p < 0.10, ** p < 0.05, *** p < 0.01.

4.5 The Sarbanes-Oxley, leverage and reporting conservatism

Finally, the results of the fourth and last hypothesis are displayed in Table 9. The last hypothesis postulates that the effect of the Sarbanes-Oxley Act on conditional conservatism increases with leverage. It is expected that the coefficient of the $SOX \times Leverage$ is significantly positive in Regression 1 of Table 9. Consistent with hypothesis four, the coefficient of $SOX \times Leverage$ is positive and statistically significant at the one percent level, as seen in Regression 1 of Table 9. This result implies that leverage positively moderates the effect of the Sarbanes-Oxley Act on conditional conservatism. This finding suggests that highly leveraged firms tend to use more strict verification requirements regarding bad news after the passage of the Sarbanes-Oxley Act. One explanation for this finding is that highly levered firms have more agency problems in the form of information asymmetry. The Sarbanes-Oxley Act introduced corporate governance mechanisms that utilize conditional conservatism as a means to produce more timely and more transparent financial information. Moreover, the conclusions validate the prerequisite of a firm-year level measure for reporting conservatism as a replacement for an industry-year measure, to make causal inferences about the effect of a concept on reporting conservatism. In conclusion, hypothesis four is not rejected, because the effect of the Sarbanes-Oxley Act on conditional conservatism increases with a firm's leverage.

5. Conclusion

This paper investigated the relevance of the Sarbanes-Oxley Act in relation to conditional conservatism inside financial reporting. Furthermore, it also confirms whether firm-specific factors like the market-to-book ratio, firms size and leverage have any moderating effects on the connection between the Sarbanes-Oxley Act and accounting conservatism. The empirical findings of this paper suggest that the Sarbanes-Oxley Act decreased the demand for conditional conservatism during the preparation of financial statements. The results of this paper complement the existing literature about the effect of the Sarbanes-Oxley Act and suggest that the Act effectively increased the confidence of investors in financial information. Consequently, this decreased the contracting motive to apply asymmetric verification standards. Besides, the findings provide empirical support about the effectiveness of regulation and enforcement, which regulators and politicians can use to their advantage. Additionally, the market-to-book ratio and leverage significantly strengthen the link between the Sarbanes-Oxley Act and earnings timeliness with respect to bad news. The findings support the notion that the Sarbanes-Oxley Act serves as the engine to mitigate agency conflicts, and conservatism is used as the fuel to make the engine run. Moreover, the empirical results validate the necessity of a firm-year level measure of conditional conservatism as an alternative to an industry-year measure, when one investigates asymmetric verification requirements. Additionally, this paper provides evidence that firm size negatively moderates the effect of the Sarbanes-Oxley Act on accounting conservatism. This finding is in line with the notion that smaller firms generally have more agency problems. Consequently, small firms have an incentive to use asymmetric verification requirements due to a higher contracting demand for reporting conservatism. In addition to shedding light on the overall effectiveness of regulation, this paper instructs regulators and politicians of the need to consider moderating effects in the form of firm-specific factors to make regulation more efficient. Moreover, one can interpret the results as a warning to be cautious about companies applying legitimate accounting methods in an aggressive manner. Thus, potential investors can use the findings of this study to make a well-informed decision to allocate funds into the capital market.

This paper suffers from some inadequacies. This paper does not use a difference-in-difference design. The causal inferences would have had more internal validity if the methodology contained a control group. For example, publicly traded companies in Canada could have served as a control group. That being said, future research could further examine the relationship between the Sarbanes-Oxley Act and reporting conservatism and use a difference-in-difference design. Furthermore, future research could use other measures for conservatism. For instance, the proxy created by Beaver and Ryan (2005).

6. Appendix

Table 3 Pearson correlation matrix

	C-Score	G-score	MTB-ratio	Firm size	Leverage	SOX	Auditor	Firm growth	Firm profitability
C-score	1.000								
G-score	0.010	1.000							
MTB- ratio	-0.231	-0.176	1.000						
Firm size	-0.348	0.074	0.157	1.000					
Leverage	0.229	0.364	0.079	0.052	1.000				
SOX	-0.006	0.170	-0.040	0.192	0.064	1.000			
Auditor	-0.365	0.022	0.011	0.393	-0.060	-0.123	1.000		
Firm growth	0.005	0.001	0.004	-0.006	-0.002	-0.008	0.003	1.000	
Firm profitability	0.161	0.008	-0.212	0.262	0.021	0.053	0.098	-0.005	1.000

Table 3 displays the results of the Pearson correlation test of the complete set of variables over the period of 1999-2006.

Figure 1 Decomposition of the components of market value of equity

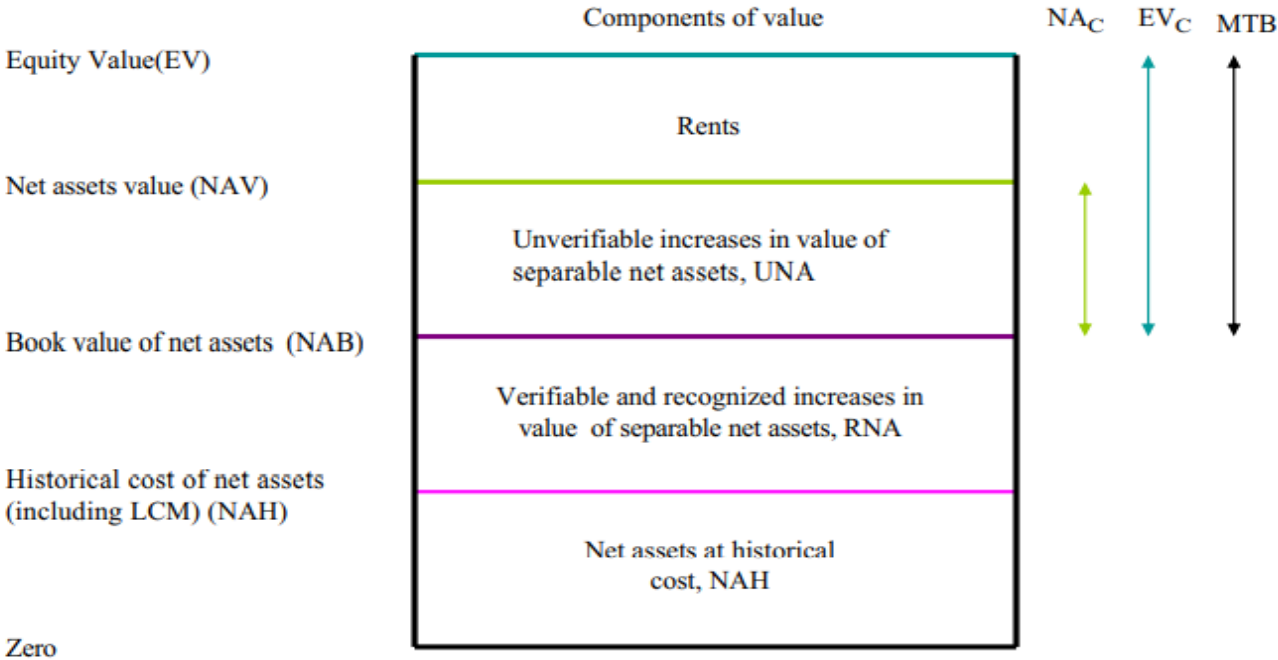


Table 10 Variable definition table

Variable	Index WRDS	Symbol	Definition
<i>Dependent variable</i>			
Conservatism	-	C-score	Earnings timeliness with respect to negative returns.
Conservatism	-	G-score	Earnings timeliness with respect to positive returns.
<i>Explanatory variable</i>			
Sarbanes-Oxley Act	-	SOX	A dummy variable that takes the value of one if a firm's financial reports are published in accordance with the Sarbanes-Oxley Act, and zero otherwise.
<i>Control variables</i>			
Market-to-book ratio	bm	Market-to-book	The market-to-book ratio is computed as 1 divided by the book-to-market ratio.
Firm' size		Size	Firm size is computed as the natural logarithm of a firm's total assets.
Leverage	de_ratio	Leverage	Leverage is computed as a firm's total debt divided by total equity.
Auditor	AU	Auditor	A dummy variable that takes the value of one if a firm's financial reports are audited by one of the Big five accounting companies (Deloitte, PWC, KPMG, EY ad Arthur Anderson), and zero otherwise.
Firm' growth	REVT	Growth	Firm growth is computed as a firm's total revenue divided by the firm's one year lagged total revenue.
Firm profitability	-	Profitability	Firm' profitability is computed as the cash flow from operations divided by total assets.
<i>Fixed – effects</i>			
Year fixed-effects	-	Year	Category variable from 1999 until 2006.
Industry fixed-effects	SIC	Industry-fixed-effects	Category variables based on SIC-code

Table 10 present the name of the variables, the variables' index on WRDS, the variables' symbol in the regression analyses and a definition of the variables.

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