

Accounting conservatism and the Audit Committee

A research paper on the association of audit committee effectiveness and conditional accounting conservatism



Academic year: 2016-2017
Date: 15-8-2017
Author: Kaj Olyhoek
Student number: 348314
Supervisor Erasmus: Drs. R. van der Wal
Supervisor EY: P. Carstens
Faculty: Erasmus School of Economics
Master: Accounting, Auditing & Control

Abstract

The purpose of this study is to investigate the relation between conditional conservatism and audit committee effectiveness. Over the years, different researchers studied the relation between conservatism and different corporate governance bodies within firms. Though, only limited research is available on the relation between conservatism and the audit committee, while the audit committee is the most important committee within the board of directors in monitoring the accounting choices made by firm's management. Therefore, this study contributes to prior literature by studying this relation. In order to investigate this plausible relation, two different measures of conditional conservatism have been used. One measure assesses the level of conditional conservatism by looking at the asymmetrical timeliness of earnings while the second measure uses accruals in measuring the level of conservatism. These two measures are regressed on five different audit committee characteristics contributing to its effectiveness. The sample consists of 258 firms and 1.648 observations for US firms listed on the S&P 500 whereby the firms have four firm-year observations for the period 2009-2015.

The results provide evidence that the financial expertise and the age of the audit committee members is significantly related to conditional conservatism. The other three characteristics contributing to audit committee effectiveness are not significantly related to conservatism. Therefore, it can be concluded that more effective audit committees are not associated with higher levels of conditional conservatism.

Keywords

Accounting conservatism – Conditional conservatism – Audit committee – audit committee effectiveness – S&P 500 – asymmetric timeliness of earnings measure – accruals measure

Acknowledgement

I wrote this thesis as the final step in obtaining my master's degree in accounting, auditing & Control at the Erasmus University Rotterdam. By writing this expression of gratitude, I want to thank some people who supported me in achieving something I could not have imagined in 2011, when I switched from the Erasmus University Rotterdam to The Hague University of Applied sciences.

Regarding the support in writing my thesis, I want to thank mr. Van der Wal for giving constructive feedback which helped me in improving my research. Besides, I want to thank my colleagues at EY Naaldwijk and especially Pim Carstens, who was my supervisor at EY. By discussing my ideas with colleagues, I was able to get a clearer view on how I was going to develop my thesis.

At last, I want to take the opportunity to thank my parents for always giving me endless support in achieving my master's degree and in pursuing my dreams. This has meant a lot to me.

Contents

1. Introduction	6
1.1 Introduction	6
1.2 Background	6
1.3 Contribution	7
1.4 Methodology.....	8
1.5 Findings.....	9
1.6 Outline	9
2. Literature review and theoretical background	11
2.1 Accounting conservatism.....	11
2.1.1 Defining conservatism.....	11
2.1.2 Explanations for conservatism.....	13
2.2 Corporate governance	14
2.3 The audit committee	14
2.3.1 Roles of the audit committee	15
2.3.2 Characteristics of the audit committee	17
2.4 Underlying theories	19
2.4.1 Agency theory	19
2.4.2 Positive accounting theory	20
2.4.3 Efficient market hypothesis	21
2.5 Conservatism and the audit committee	21
2.6 Summary literature review and theoretical background	23
3. Conceptual framework and hypotheses development	25
3.1 Independence of the audit committee.....	25
3.2 Financial expertise of the audit committee.....	26
3.3 Size of the audit committee.....	26
3.4 Activity of the audit committee.....	27
3.5 Conceptual framework	27
3.6 Summary hypotheses development.....	28
4. Research design	29
4.1 Dependent variable	29
4.1.1 Earnings asymmetric timeliness measure of conditional conservatism.....	29
4.1.2 Accruals measure of conditional conservatism	30

4.2 Independent variables	31
4.3 Control variables	32
4.4 Regression equations.....	33
4.5 Libby Boxes, validity of the research and endogeneity concerns	34
4.5.1 Libby boxes and validity of this research.....	34
4.5.2 Endogeneity concerns.....	35
4.6 Data collection and sample selection	35
4.6.1 Data collection process.....	37
4.6.2 Data cleaning process	37
4.7 Summary research design.....	39
5. Empirical results and analysis	40
5.1 Descriptive statistics	40
5.2 Correlation analysis.....	43
5.3 Regression results and analysis	45
5.3.1 Audit committee independence	47
5.3.2 Audit committee financial expertise.....	48
5.3.3 Audit committee size	48
5.3.4 Audit committee activity.....	49
5.3.5 Influence of the control variables	50
5.4 Testing OLS-assumptions.....	50
5.5 Summary empirical results and analysis.....	52
6. Conclusions	54
6.1 Discussion	54
6.2 Limitations	55
6.3 Recommendations for further research	56
Bibliography.....	58
Appendices	63
Appendix A – Libby boxes.....	63
Appendix B – Data cleaning procedure tables.....	64

Tables and Figures

Tables:

Table 1: Descriptive statistics.....	41
Table 2: Pearson’s correlation matrix.	44
Table 3: General information regression analysis.....	46
Table 4: Table OLS-regression output	46

Figures:

Figure 1: Conceptual framework of the hypotheses.....	27
Figure 2: Libby Boxes.....	63
Figure 3: Data cleaning ISS file	64
Figure 4: Data cleaning Compustat monthly returns file	64
Figure 5: Data cleaning Compustat annual file	64
Figure 6: Data cleaning merged STATA file	65

1. Introduction

1.1 Introduction

Over the past decades, conservatism has survived as an important accounting practice. Despite, criticism by standard setters is that conservatism affects information neutrality (Watts, 2003a). Conservatism is defined as "the differential verifiability required for recognition of profit versus losses" (Watts, 2003a). Over the last twenty years, several accounting scandals resulted in an increased focus on conservative accounting choices, especially by auditors (Fafatas, 2010). In overseeing accounting choices within a firm, the audit committee is one of the most influential committees. Therefore, it is interesting to study the association between the audit committee and conservatism within firms.

1.2 Background

Conservatism is an important accounting practice which is widely discussed in academic literature. The focus in this literature is mainly on the possible explanations for conservatism and the forms of conservatism. Another area of interest which is widely discussed is which internal or external factors affect conservatism within firms. According to Ahmed, Billings, Morton and Stanford-Harris (2002) conservatism helps in efficient debt contracting, because it helps in mitigating conflicts between debt holders and shareholders. Others like Fafatas (2010) argue that both internal and external auditors demand more conservatism from firms, as it decreases the chance of overstatements.

The main distinction in academic literature concerning conservatism, is the distinction between conditional versus unconditional conservatism. Conditional conservatism (news dependent) is defined as follows: "book values are written down under sufficiently adverse circumstances but not written up under favorable circumstances, with the latter being the conservative behavior" (Beaver & Ryan, 2005). Unconditional conservatism (news independent) means that "aspects of the accounting process determined at the inception of assets and liabilities yield expected unrecorded goodwill" (Beaver & Ryan, 2005). For conditional conservatism, the emphasis is mainly on improving contracting efficiency and hereby reducing agency problems. For unconditional conservatism, greater emphasis is placed on valuing specific types of assets and liabilities and its impact on future earnings (Beaver & Ryan, 2005). As conditional conservatism is associated with agency problems within firms, this research focusses on conditional conservatism.

Because investors are not able to monitor firm's management, corporate governance mechanisms exist to overcome information asymmetry problems and reduce moral hazard problems (Mora & Walker, 2014). The audit committee is one of the most important and influential corporate governance mechanisms in monitoring accounting choices made by firm's management (Menon & Williams, 1994). Krishnan and Visvanathan (2008) find that audit committee effectiveness is positively related to accounting conservatism. Though, the effectiveness of the audit committee depends on a number of characteristics of the audit committee, like the size, financial expertise of the members or the independence of the committee (Klein, 2002a; Abbott, Parker & Peters, 2004).

By having stronger corporate governance bodies, agency problems between firms management and the investors can be reduced. Existing literature examining the link between corporate governance and accounting policies is mainly focussed on the link between corporate governance and earnings management. Especially the association between different governing bodies within firms like the board of directors or the audit committee and earnings management is extensively studied. Though, on other types of accounting policies like conservatism in relation to governing bodies, limited research has been done. Thus, it is valuable to investigate whether this association also holds for conservatism. This leads me to the following research question:

"What is the association between audit committee effectiveness and conditional accounting conservatism?"

1.3 Contribution

Scientific relevance

This research contributes to existing literature as it provides insight in the association between audit committee effectiveness proxied by different characteristics and conditional conservatism. While prior research within these subjects only focusses on one characteristic of the audit committee (e.g. Krishnan & Visvanathan, 2008), this study brings the different characteristics of the audit committee together. Hereby, the understanding of how the composition of the audit committee is associated with conservative accounting policies within firms can be increased. It is legit that different characteristics of the audit committee play a

role in audit committee effectiveness and thus in accounting policies, as research focussing on earnings management and the audit committee has shown (e.g. Klein, 2002b).

Relevance for practice

This research contributes to the existing literature, as it will give an insight in the association between audit committee effectiveness and conditional conservatism within firms. Especially for different stakeholders like investors and creditors, this research can be of value, as it can provide them insights in how different characteristics of the audit committee are associated with conservatism. As described before, conservatism leads to understatement rather than the overstatement of accounting numbers, which reduces the risk of litigation (Basu, 1997). For creditors, this research will be interesting as it may provide them insights for the risks they are facing when lending money to a firm.

Another stakeholder to which this research can be of value are standard setters like the FASB, as these institutes are the organizations which set up rules and regulations regarding accounting policies and governance mechanisms like the audit committee. For them it would be interesting to see how certain audit committee characteristics are associated with conservatism in financial reporting. Hereby, they are potentially able to revise previous legislation in order to achieve their proposed goals like reducing moral hazard issues (Mora & Walker, 2014).

1.4 Methodology

This thesis investigates the association between conditional conservatism and audit committee effectiveness. I start with a literature review on the topics of accounting conservatism, the audit committee and the links between these concepts. Based on prior literature, I developed some hypotheses which will be tested later to draw conclusions.

In order to measure the level of conservatism for each firm, I use two different measures of conservatism. When only one measure would be used, it might not give a proper indication about the level of conservatism because each model has its limitations (Watts, 2003a). Including a second measure of conditional conservatism will enhance the internal validity of this research. The first measure which is used is the measure by Basu (1997), which looks at how earnings news is reflected in stock prices. The second model that is used to measure conditional conservatism is a accruals measure developed by Ahmed et al. (2002).

The sample for this research consists of the firms from the S&P 500 in the period 2009-2015. Because the firms in this index are large US firms with considerable economic impact (Klein, 2002a), these firms can give a good representation of the US economy as a whole. Besides, these firms are required to have an audit committee by US law (SOX, 2002). Therefore, this research focuses on the firms in this index. I exclude financial institutions from my sample, due to their complex structure, as this might lead to biased numbers. Because of the reverse effect of accruals in measuring conservatism, I have chosen to use a sample period stretched over a number of years. Hereby, potential problems caused by the reverse effect can be limited. By taking a longer sample period, bias creating effects like inflation might affect the measures of conservatism. These potential problems can be mitigated by including year-fixed effects. I will extract the data from the Compustat North America database. Also, the financial data for my control variables will be extracted from the Compustat database. The data regarding the audit committee characteristics will be extracted from the ISS Riskmetrics Database.

1.5 Findings

Of the five audit committee characteristics studied in this research, only audit committee financial expertise and audit committee age are significantly related to conditional conservatism. For audit committee financial expertise, it is found that financial expertise in the audit committee is associated with higher levels of conditional conservatism. Opposed to what was hypothesized, it is found that audit committee members over the age of 69 are associated with higher levels of conditional conservatism. The other characteristics of the audit committee which enhance audit committee effectiveness are not significantly related to conditional conservatism. These results indicate that audit committee effectiveness does not imply higher levels of conditional conservatism

1.6 Outline

This thesis is structured in the following way. It begins with an overview of the existing literature concerning accounting conservatism, the audit committee and the link between these two concepts in chapter 2. Chapter 3 will describe the hypotheses and the intuition behind these hypotheses. The research methodology and sample selection will be described in chapter 4. Chapter 5 will give insights in the results of the research, followed by an analysis

of the results in chapter 6. To finish with, in chapter 7, conclusions are drawn and suggestions for further research will be given.

2. Literature review and theoretical background

This chapter will discuss prior literature on the topics of conservatism, the audit committee and the link between these two topics. In the first part, a brief overview of the definitions of conservatism, the explanations for conservatism and underlying theories will be given. In the second part of this chapter, literature on the role of the audit committee and its effectiveness is discussed. After describing conservatism and the audit committee, underlying theories for these concepts will be given. In the last part of this chapter, the link between conservatism and the audit committee is discussed.

2.1 Accounting conservatism

Accounting conservatism as an accounting practice originates from the fact that managers have more information than investors regarding future profits, firm operations and the value of the firm's assets. Hereby, uncertainty increases for stakeholders like creditors and investors (Basu, 1997). Because of this, conservatism arose as an accounting practice to mitigate agency problems between managers and different claimholders.

Though, for years now, researchers and standard setters question whether conservatism is beneficial, because it biases accounting information and is "inconsistent with neutrality" (FASB, 2010). Thus, from a valuation perspective of accounting, biased accounting information will make it more difficult to assess the value of a company (Ruch & Taylor, 2015). Opposed to this view, others like Watts (2003a) argue that "elimination of conservatism will change managerial behaviour and impose significant costs on investors and the economy in general" (Watts, 2003a). By inducing conservatism, managers might act in a way which is in line with what stakeholders demand. From this contracting perspective, conservatism will enhance efficient contracting between firm's management and the different stakeholders, like the debt- and equity holders (Ruch & Taylor, 2015).

2.1.1 Defining conservatism

Over the years, some definitions of conservatism have been provided. Numerous researchers covering conservatism follow the definition of Basu (1997): "the accountants' tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses".

In other words, conservatism means that there is a differential requirement for recognizing gains versus losses (Watts, 2003a). Others like Beaver and Ryan (2005) define conservatism as “the on average understatement of the book value of net assets relative to their market value”. Given the two different definitions of conservatism, it stands to reason that academic literature follow two different perspectives regarding conservatism, namely conservatism focussing on the income statement versus conservatism focussing on the balance sheet. Although the balance sheet and income statement are linked to each other, literature defines this discord as conditional conservatism versus unconditional conservatism.

Unconditional conservatism (news independent) means that “aspects of the accounting process determined at the inception of assets and liabilities yield expected unrecorded goodwill” (Beaver & Ryan, 2005). In short, this statement refers to the systematic understatement of net assets. Examples of unconditional conservatism include the acceleration of depreciation greater than what the depreciation would be using the economic rate of depreciation. Prior literature highlighted some unfavorable consequences of unconditional conservatism. For example, Penman and Zhang (2002) argue that by applying unconditional conservatism, net assets will be understated, hereby creating hidden reserves. Others like Ball and Shivakumar (2005) also criticize unconditional conservatism, arguing that using unconditional conservatism will negatively affect contracting efficiency as it creates a bias in decisions based on financial information which has an unknown magnitude.

In this thesis, the following definition by Ruch and Taylor (2015) for conditional conservatism or news dependent conservatism will be followed: “Conditional conservatism occurs when negative economic news is recognized in accounting earnings in a timelier manner than positive economic news.” This definition builds on the definition provided by Basu (1997), which is presented in the previous paragraph. In measuring conditional conservatism, firms with greater asymmetry in recognizing bad news versus good news are more conservative. Examples of conservatism include recording inventories at lower-of-cost-or-market and asymmetrical recognition in gains versus loss contingencies (Ruch & Taylor, 2015). Of the two forms of conservatism, conditional conservatism is perceived to be a good version of conservatism, as it provides an early warning signal of bad news to the different governing bodies of a firm. This results in an earlier investigation by these bodies to find out what caused this bad news (García Lara, Osma & Penalva, 2009). Hereby, the use of conditional conservatism can enhance contracting efficiency (Ball & Shivakumar, 2005).

2.1.2 Explanations for conservatism

Although there is a distinction made between the two forms of conservatism, the explanations for why conservatism exists are more or less the same for both forms. The four most common explanations distinguished in prior literature are the contracting explanation, the shareholder litigation explanation, the taxation explanation and the regulatory forces explanation (Basu, 1997; Watts, 2003a; Beaver & Ryan, 2005). Though, some researchers argue that both forms of conservatism differ in their explanations. Qiang (2007) finds that conditional conservatism is mostly driven by the contracting explanation and litigation explanation, while unconditional conservatism is mostly driven by the litigation, taxation and regulation explanation.

The contracting explanation of conservatism refers to constraining opportunistic behaviour from management and increasing the efficiency of contracting (Beaver & Ryan, 2005). As Watts (2003a) noted, “conservative accounting is a means of addressing moral hazard caused by parties to the firm having asymmetric information, asymmetric payoffs, limited horizons, and limited liability”. Like explained before, conservatism leads to deferred earnings and understated net assets. From a contracting perspective, it limits management’s ability to make opportunistic payments to both themselves and other contracting parties, hereby increasing firm value. As this increased firm value is shared among all parties, conservatism works as an efficient contracting mechanism.

The litigation explanation of conservatism relates to litigation costs, which are likely to be higher when a firm overstates its assets, rather than understating them (Watts, 2003a). By using conservative accounting, the chance that firm’s management will overstate its income and net assets will decrease. Hereby, the litigation risks will also decrease, as it is difficult to prove that certain investment decisions were not taken due to the understatement (Watts, 2003a). When certain investments are undertaken which are based on overstated accounting numbers, the chance of litigation for the firm increases. Especially for firms in the United States, litigation costs tend to be higher, compared to European capital markets (Seetharaman, Gull & Lynn, 2002). Thus, by using conservatism, firms can reduce the risk of litigation.

The taxation explanation of conservatism refers to the “delaying the recognition of revenues and accelerating the recognition of expense to defer tax payments” (Watts, 2003a). Especially under the unconditional form of conservatism, firms are able to deduct extra expenses (e.g. cost of goods sold by using LIFO), hereby deferring taxes (Qiang, 2007). It must

be noted that the use of LIFO is only allowed under U.S. GAAP and not under IFRS (Forgeas, 2008). Especially for highly profitable firms, the use of conservatism can help to reduce current tax payments and defer them to future periods.

At last, the regulatory forces explanation refers to the preference of standard setters and regulators for conservatism (Watts, 2003a). Standard setters and regulators tend to respond to conservative demands from their constituents, in order to avoid accountability (Qiang, 2007). When these standard setters induce conservatism through regulations, the chance of overstatements will decrease, hereby reducing political costs.

2.2 Corporate governance

From an agency problem perspective, corporate governance mechanisms serve as the link between ownership and control of firms. Following Shleifer and Vishny (1997), “corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment”. This statement raises the question how these suppliers (investors) control managers and how they restrain firm’s management from opportunistic behaviour. Academic literature distinguishes several corporate governance mechanisms which help in monitoring and controlling firm’s management. Various researchers indicate that the audit committee is one of the most influential parties in monitoring the accounting choices made by managers and in financial reporting (e.g. Menon & Williams, 1994; Felo, Krishnamurthy & Solieri, 2003). Therefore, this study will focus on the audit committee. The next paragraph will explain more extensively what the role of the audit committee is within firms.

2.3 The audit committee

As been stated in the introduction, the audit committee is one of the most important governing mechanisms (Menon & Williams, 1994). The audit committee operates under the authority of the board of directors and is composed of members from the board of directors. In section 2 of the Sarbanes-Oxley act (2002), the audit committee is defined as “a committee (or equivalent body) established by and amongst the board of directors of an issuer for the purpose of overseeing the accounting and financial reporting processes of the issuer and audits of the financial statements of the issuer”. In this SOX act is determined for US firms how an audit committee should execute its role as an well-functioning independent corporate

governance mechanism. Besides overseeing the financial reporting process, the audit committee has a number of other roles or duties which will be explained in paragraph 2.4.1.

Over the last two decades, the importance of the audit committee as a key mechanism in monitoring firm's management has increased (Brennan & Kirwan, 2015). First, this increased importance can be explained by increased complexity of firm's and the markets they operate in. This results in a more prominent role for audit committees in monitoring. Secondly, the increased importance of audit committees is caused by the increasing responsibilities in risk oversight and the increased scrutiny under which audit committees operate (EY, 2013). In order to mitigate potential agency problems due to the separation between ownership and control, an audit committee has to function effectively (e.g. Abbott & Parker, 2000). By functioning effectively, the confidence investors have in the firm's financial reports will increase (Jun Lin, Xiao & Tang, 2007) because information asymmetry decreases. DeZoort, Hermanson, Archambeault & Reed (2002) define an effective audit committee as follow: "An effective audit committee has qualified members with the authority and resources to protect stakeholder interests by ensuring reliable financial reporting, internal controls and risk management through its diligent oversight efforts".

2.3.1 Roles of the audit committee

The role an audit committee plays within firms has changed over the years. Though, some of the roles of the audit committee remained the same. The audit committee has different roles as described in literature:

- Overseeing and monitoring the quality of the financial reporting process and accounting choices made by firm's management: in overseeing the financial reporting process within a firm, the audit committee plays a key role. This role is perceived to be the most important role of the audit committee (BRC, 1999). On behalf of the board of directors, the audit committee is the "ultimate monitor of the process" (BRC, 1999). By monitoring this process, the audit committee can ensure that the financial reporting process is executed according to rules and regulations and that the financial reports present a reliable overview of the firm. By effectively monitoring the financial reporting process and accounting choices, potential agency problems can be reduced, as it leads to more reliable financial reports for the different stakeholders (e.g. Abbott

& Parker, 2000; Lary & Taylor, 2012). Two specific focus points concerning the monitoring role will be described below.

- Monitoring internal controls: a third role which is recognized in academic literature is the monitoring role of internal controls. By monitoring internal controls, the audit committee can enhance the quality of the financial reporting process (Kalbers & Fogarty, 1993).
- Risk management oversight: in overseeing risk management within firms, the audit committee plays an important role in discussing the risks firms are facing with the management. By challenging management, the audit committee can stimulate management to effectively monitor and manage the financial risks a firm is facing (EY, 2013)
- Overseeing the auditing process: in relation to the auditing process by external auditors, the audit committee plays an important role in monitoring the independence of the external auditor. Besides, they play a role in overseeing the work of the external auditor and in following up points of special interest addressed by the auditor (Beasley, Carcello, Hermanson & Neal, 2009). At last, the audit committee plays a role in selecting the external auditor. By overseeing the auditing process, the audit committee can enhance financial reporting quality.
- Guardian role: Brennan and Kirwan (2015) note that the audit committee plays a guardian role within firms. The audit committee should monitor whether firm's management, the external auditors and internal auditors operate in the best interest of the firm from a financial perspective (Klein, 2002a).
- Ceremonial role: some researchers raised questions that audit committees are only there from a ceremonial perspective, as firms are obliged to have an audit committee. (Spira, 1999). By displaying that a firm complies to corporate governance standards, a firms can enable access to extra resources. Though, Spira (1999) and others like Beasley et al. (2009) conclude that audit committees have more roles than just a ceremonial role.

In this thesis, the focus is primarily on the overseeing and monitoring role of the audit committee in the quality of the financial reporting process, as it is associated with reducing agency problems.

2.3.2 Characteristics of the audit committee

In order to fulfill the different roles of the audit committee and especially the monitoring role, the audit committee needs to operate effectively (De Zoort et al., 2002). With increasing effectiveness, the power of the audit committee as an important governing body is also increasing. As been noted in the introduction, the audit committee's effectiveness depends on a number of characteristics. Academic literature recognizes different characteristics of the audit committee which impact its effectiveness.

- Independence: Abbott, Parker and Peters (2000) described independence of the audit committee as follows: "Independence is defined to exclude current and former employees, relatives of management, persons receiving compensation from the company (except directors' fees) or controlling for-profit organizations receiving from or paying the corporation significant sums, and compensation committee interlocking directorships". To summarize, an audit committee is perceived to be independent when all members are in no way connected to the firm except by the directors' fees they get for their tasks as being a non-executive member of the board of directors and audit committee. Other studies like the Blue Ribbon Committee (1999) also commented that audit committees are independent when there are no formal relations between the members of the audit committee and the firm, meaning that the members are independent. Independency is perceived to be influencing the effectiveness of the audit committee in its monitoring role, because independent committee members enhance the integrity of external financial statements as these members are not tied to firms management (Lary & Taylor, 2012). According to Klein (2002a), independent committee members are better able to solve agency problems between investors and the management of a firm. Opposed to the independency view, some researchers argue that it is necessary to have some affiliated audit committee members. For example, Fama and Jensen (1983) and Klein (1998) argue that inside directors have more firm specific expertise which can help in supporting the firm's management in making decisions, hereby enhancing firm value. Still, most research and regulatory bodies agree that a vast majority of independent members enhances audit committee effectiveness.
- Financial expertise: in monitoring the financial reporting process, it is inevitable that the audit committee needs to have financial expertise in order to execute their work

properly. By having deeper understanding of accounting principles and the financial reporting process, audit committee members can be more effective in monitoring firm's management (Krishnan & Visvanathan, 2008). The BRC (1999) defines a financial experts as a member which has "past employment experience in finance or accounting, requisite professional certification in accounting, or any other comparable experience or background which results in the individual's financial sophistication, including being or having been a CEO or other senior officer with financial oversight responsibilities". When audit committee members would lack sufficient financial expertise, the question is raised whether these members fully understand potential problems the audit committee is facing (Jun Lin et al., 2007). Overall, there is consensus that increasing financial expertise enhances audit committee effectiveness.

- Size: another characteristic which is of influence to the audit committees' effectiveness is the size of the audit committee (Jun Lin et al., 2007). Following the recommendations by the BRC (1999), audit committees should consist of at least 3 members. Although the size of the audit committee is partly influenced by the size of the firm and there is no ideal size, different researchers consent that the audit committee ideally consists of 3 to 6 members (e.g. DeZoort et al., 2002; Abbott et al., 2004). Larger audit committees are not necessarily more effective, as larger audit committees can lead to more worthless discussions, hereby delaying decisions and thus affecting the effectiveness of the committee (Yermack, 1996). Opposed to this view, other researchers argue that larger audit committees are more effective. For example, Zhang, Zhou and Zhou (2007) comment that "a large audit committee is more likely than a small one to improve the quality of internal controls, because increased resources and enhanced status will make the audit committee more effective in fulfilling its monitoring role".
- Active members: some researchers argue that members become less effective when they reach a certain age or have too many different board seats (Core, Holthausen & Larcker, 1999). By reaching the age of 70, members start to become less effective, hereby reducing the overall efficiency of the committee. Besides the age of a member, the number of board seats of a member can also influence the audit committee effectiveness. According to Shivdasani (1993), boards which contain members with too many directorships suffer from more agency problems, as these boards become less

powerful. When members are seated in too many boards, a member can only devote limited time to each board seat, hereby operating less efficient (Core et al., 1999).

2.4 Underlying theories

There are different theories which form the basis for the different constructs presented in this thesis. In the following paragraph, these theories are explained.

2.4.1 Agency theory

In studying conservatism, different researchers have emphasized the importance of conservatism as a means to address and limit agency problems between firm's management and other parties (e.g. Watts, 2003a; Ruch & Taylor, 2015). Thus, agency theory can explain why conservatism is used within firms. In describing agency theory, Eisenhardt (1989) argues that "agency theory is directed at the ubiquitous agency relationship, in which one party (the principal) delegates work to another (the agent), who performs that work". Jensen (1983) presents two perspectives within the agency theory literature. The 'positivist agency' perspective focusses on situations of conflicting goals between agent and principal and how governance mechanisms can help solving these agency problems. The emphasis within this perspective is mainly on the practical implications of agency problems, especially on agency problems between shareholders/debt holders and management. The second stream of literature follows the 'principal-agent' perspective, which focuses on the "general theory of the principal-agent relationship" (Eisenhardt, 1989), which can be used for any principal-agent relations. Research within this perspective is focused on the abstract side of agency theory instead of the practical side.

Because of goal incongruence, agents do not always act in line with the principal's best interest. Research also refer to this problem as a moral hazard or hidden action problem (Mora & Walker, 2014). Besides, principals have asymmetrical information in monitoring agents. Research also refers to this problem as adverse selection (Mora & Walker, 2014). Jensen (1993) argues that as larger firms will allure more external monitoring due to its complexity, monitoring costs will increase. To mitigate these agency problems, contracts between the agent and principal are put in place. Following Fama and Jensen (1983), agency problems mainly arise due to separation of ownership and control over the firm. Thus, by demanding

more conservative accounting policies, these agency problems between owners and firm's management can be restricted.

2.4.2 Positive accounting theory

Agency theory which is described in the previous paragraph, is a theory which is part of a broader stream of literature: the Positive Accounting Theory (PAT) Literature. Studies in the field of positive accounting theory attempt to find out what influences firm's management to make certain accounting choices (Watts & Zimmerman, 1978) and the economic consequences on the different stakeholders. By examining real world transactions, researchers attempt to find out what accounting choices firms make and what the economic consequences of these transactions are (Demski, 1988). By studying the association between audit committee's effectiveness and conditional conservatism, this thesis builds on the stream of PAT literature. Audit committee effectiveness refers to the aspect of what influences the accounting choice. Conditional conservatism refers to the accounting choice being studied. Three hypotheses form the basis for the literature around positive accounting theory, namely the bonus plan hypothesis, the debt covenant hypothesis and the political cost hypothesis.

The bonus plan hypothesis refers to the accounting choice made by management in order to increase their own bonus (Watts & Zimmerman, 1990). By making accounting choices in line with their bonus plan, management can maximize their bonus. The second hypothesis around which positive accounting literature forms their predictions is the debt covenant hypothesis. The debt covenant hypothesis refers to firm's management making accounting choices in order to prevent the firm from violating debt covenants (Watts & Zimmerman, 1990). By shifting future earnings to the current period, management can ensure that the terms in debt covenants will not be violated. The political cost hypothesis on the basis of which academics in the field of positive accounting theory form their predictions is the political cost hypothesis. The political cost hypothesis refers to management making certain accounting choices in order to limit the political costs (e.g. taxes) the firm is facing (Watts & Zimmerman, 1990).

As described in paragraph 2.1, accounting conservatism can help in constraining management from making opportunistic accounting choices to increase their own welfare. Hereby, agency costs can be reduced. This shows that the literature on accounting conservatism builds on the bonus plan hypothesis of positive accounting theory. By examining

the association between audit committee effectiveness and conditional conservatism, this thesis also builds on the bonus plan hypothesis in making predictions.

2.4.3 Efficient market hypothesis

Another theory which is of importance to this thesis, is the Efficient Market Hypothesis (EMH) theory. The Efficient Market Hypothesis assumes that security prices reflect all available information, hereby assuming that the market is efficient (Fama, 1970). Although the EMH theory is a prominent economic theory, investors have been able to identify mispriced stocks, indicating that markets are not efficient (Bloomfield, 2002). Because of this, Fama (1970) presented three basic forms of the efficient market hypothesis: the weak form, the semi-strong form and the strong form of the efficient market hypothesis.

The weak form of the EMH suggest that if all market information is reflected in the stock prices, the market is efficient (Fama, 1970). In this form, historical prices are not reflected in current prices. The semi-strong form of the EMH suggests that markets are efficient when all publicly available is reflected in the stock prices (Fama, 1970). In this form, all information which is publicly available in the market is reflected in the stock prices. At last, the strong form of the EMH suggests that all available information is reflected in the stock prices (Fama, 1970).

As indicated before, accounting conservatism arose as an accounting practice which can be used to reduce information asymmetry between investors and firm's management. Thus, from a conservatism perspective, markets are not fully efficient as there is still a certain level of information asymmetry between firm's management and investors. Because all publicly available information is reflected in share prices, this thesis assumes that the semi-strong form of the EMH holds.

2.5 Conservatism and the audit committee

In the previous paragraphs, both accounting conservatism and the audit committee as separate concepts have been described. Though, it still remains unexplained how the concepts of accounting conservatism and the audit committee can be linked. Prior research on this specific link is limited, as most researchers focus on either board of directors characteristics associated with conservatism (e.g. Ahmed & Duellman, 2007) or the association between the audit committee and other accounting choices like earnings management (e.g. Klein, 2002b).

The study by Krishnan and Visvanathan (2008) is one of the few studies focusing on the association between conservatism and the audit committee, specifically focusing on the influence of members with financial expertise. They argue that the risk of litigation increases the incentive for audit committee members to stimulate conservatism. Although it may seem that there is no clear distinctive link, the litigation explanation of conservatism can be used to relate conservatism to the audit committee. Also, the contracting explanation can be used as a link between conservatism and the audit committee.

As described before, the contracting explanation refers to the restriction of opportunistic managerial behavior at the cost of the shareholders (Beaver & Ryan, 2005). By restraining opportunistic behavior, potential agency problems between firm's management and the shareholders can be reduced. On behalf of the shareholders, the audit committee is a key mechanism in monitoring the quality of the financial reporting process and the accounting choices which are made, in order to limit these agency problems. By stimulating management in making conservative accounting choices, the audit committee can limit these potential agency problems.

Next to the contracting explanation, the litigation explanation for conservatism can also explain why effective audit committees demand more conservatism. As been stated in paragraph 2.1.2, "litigation produces asymmetric payoffs in that overstating the firm's net assets is more likely to generate litigation costs for the firm than understating net assets. By understating net assets, conservatism reduces the firm's expected litigation costs" (Watts, 2003a). Because the audit committee is monitoring firm's management on behalf of the shareholders, the audit committee can be held responsible by these shareholders for deceptive reporting. The audit committee is ought to be monitoring financial reporting by management effectively in order to reduce the chance of overstatements for example. Thus, effective audit committees can be expected to promote conservatism, as it reduces the chance of getting litigated by shareholders for deceptive financial reporting.

Following the paper by Qiang (2007), which argues that the contracting and litigation explanation explain the use of conditional conservatism, conditional conservatism in association with the audit committee will be studied in this thesis.

2.6 Summary literature review and theoretical background

In this chapter, the different concepts studied in this thesis have been reviewed. In paragraph 2.1, accounting conservatism is described. The main distinction which is made in literature regarding this accounting choice, is the distinction between conditional conservatism versus unconditional conservatism. This thesis focusses on conditional conservatism because the consequences of it are perceived to be favourable, opposed to the consequences of unconditional conservatism. Besides defining conservatism, the different explanations for why conservatism exists are described. For conditional conservatism, the contracting and litigation explanation explain why conditional conservatism exists.

Academic literature distinguishes several corporate governance mechanisms in monitoring and controlling firm's management. Hereby, potential agency problems due to goal incongruence between firm's management and stakeholders can be limited. From a financial perspective, the audit committee is the most important corporate governance mechanism. Besides monitoring, the audit committee has a number of different roles. The power of an audit committee in performing the different roles depends on its effectiveness. Literature recognizes different audit committee characteristics which impact its effectiveness (e.g. size of the audit committee).

A number of theories form the basis for why conservatism as an accounting choice and the audit committee as a corporate governance mechanism exists. Agency theory concerns the relation between a principal and agent and the alignment of the goals of the agent with the principal's goals, hereby reducing agency problems like information asymmetry. Conservative accounting choices can help in limiting these agency problems. Agency theory is part of the stream of positive accounting theory literature. Studies in this field of literature examine what influences firm's management to make certain accounting choices and what the economic consequences are of these choices. The last theory which is used in this thesis is the efficient market hypothesis (EMH) theory. In its pure form, the EMH assumes that security prices reflect all available information. The EMH exists in three forms. The semi-strong form assumes that all publicly available information is reflected in security prices. This indicates that there is still a certain degree of information asymmetry, which can be reduced by making conservative accounting choices.

As indicated before, the contracting and litigation explanation form the link between conditional conservatism and audit committee effectiveness. From a contracting perspective,

effective audit committee's demand higher levels of conditional conservatism as it helps in restraining opportunistic managerial behaviour. From a litigation perspective, effective audit committee's demand higher levels of conditional conservatism, as it reduces the chance of overstatements. Hereby, the chance that the audit committee gets litigated by shareholders for the overstatement is limited.

3. Conceptual framework and hypotheses development

Various researchers studying the effect of corporate governance on conditional conservatism found that firms which have stronger corporate governance opt for higher levels of conditional conservatism (e.g. Ahmed & Duellman, 2007; García Lara et al., 2009). Referring back to the previous chapter, the audit committee is a key corporate governance mechanism in monitoring the financial reporting process within an organization. In order to fulfill its monitoring role properly, the audit committee needs to function effectively (De Zoort et al., 2002). Academic literature finds several characteristics of the audit committee which might influence the effectiveness of the committee (e.g. Klein, 2002a; Krishnan & Visvanathan, 2008). This raises the expectation that stronger and more effective audit committees demand higher levels of conditional conservatism. In the following paragraphs, several hypotheses are developed which will finally be tested in the empirical part of this thesis.

3.1 Independence of the audit committee

The independence of the audit committee is perceived to be one of the key features of the audit committee in order to be an effective corporate governance mechanism (Lary & Taylor, 2012). By being an independent director, members of the audit committee are better able to keep up their integrity as the main supervisor of the firm's financial reporting process. Various recommendations by regulators in the United States stated that "the board overall should consist of a majority of independent directors" (BRC, 1999). Still, there is some freedom for firms in determining the proportion of independent directors in the audit committee. Prior research on audit committee effectiveness indicated that audit committees which are not independent are less effective compared to audit committees which are independent (e.g. Klein, 2002b; Lary & Taylor, 2012). Thus, I hypothesize that audit committee which consist of a higher proportion of independent directors demand higher levels of conditional conservatism:

H1: More independent audit committees demand higher levels of conditional conservatism

3.2 Financial expertise of the audit committee

The last characteristic which influences the effectiveness of the audit committee is the presence of members which are financial experts in the committee. When the proportion of financial experts is higher, the audit committee is better able to monitor a firm's management and thus operate more effectively (Krishnan & Visvanathan, 2008). Thus, I hypothesize that audit committees containing more financially grounded members will demand higher levels of conditional conservatism:

H2: Audit committees containing a higher proportion of financial experts demand higher levels of conditional conservatism

3.3 Size of the audit committee

One of the factors which influences the effectiveness of an audit committee is the size of the committee. Prior research is unambiguous in what an 'appropriate' size is for the audit committee. At least, audit committees should consist of a minimum of three members, following the recommendations of the BRC (1999). The Blue Ribbon Commission on audit committees of the national association of corporate directors (NACD, 2000) recommends that effective audit committees should consist of three to six members. Some researchers find that larger audit committees tend to be more effective because they can exert more power within the organization (Kalbers & Fogarty, 1993; Klein 2002a). Zhang, Zhou and Zhou (2007) comment that "a large audit committee is more likely than a small one to improve the quality of internal controls, because increased resources and enhanced status will make the audit committee more effective in fulfilling its monitoring role".

Opposed to the view that larger audit committees are more effective, some researchers find that smaller audit committees are more effective in preventing misstatements (Jensen, 1993; Beasley, 1996). According to Yermack (1996), committees consisting of too many members can lead endless discussions, making the committees less effective. Following the recommendations by the NACD (2000), I hypothesize that audit committees comprised of three to six people demand a higher level of conditional conservatism compared to audit committee composed of more than 6 members:

H3: Audit committees consisting of three to six members demand a higher level of conditional conservatism than audit committees with more than six member

3.4 Activity of the audit committee

The third characteristic of the audit committee which is likely to influence the effectiveness of the audit committee is the activity of the members. As indicated in the previous chapter, research finds that members which are over 69 years old (Core et al., 1999) and members which serve on three or more boards will operate less effective (Shivdasani, 1993). First, I hypothesize that committees containing less older members will demand higher levels of conservatism:

H4: Audit committees containing a higher proportion of members under age 70 demand higher levels of conditional conservatism

Second, I hypothesize that committees containing a higher proportion of members with less than three board seats, will demand higher levels of conservatism:

H5: Audit committees containing a higher proportion of members serving in less than 3 boards demand a higher level of conditional conservatism

3.5 Conceptual framework

In order to provide a complete overview, the hypothesized effects on conditional conservatism are scheduled in figure 1.

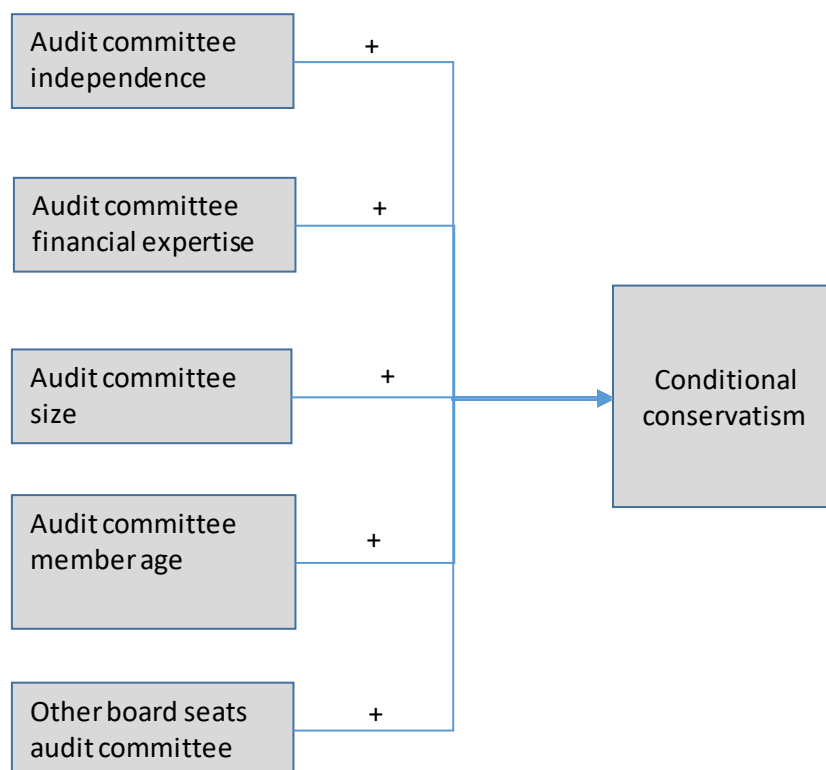


Figure 1: Conceptual framework of the hypotheses

3.6 Summary hypotheses development

As been described in the previous paragraphs, this thesis focusses on the association between audit committee effectiveness and conditional conservatism. In order to test this association and draw conclusions, five different hypotheses are developed. The five hypotheses focus on the association between the different characteristics of an effective audit committee and conditional conservatism.

4. Research design

This chapter describes how this empirical study will be conducted. In paragraph 4.1, the Libby Boxes giving a graphical overview of this thesis will be discussed in short. After that, the operationalization of the dependent construct, namely conditional conservatism is described in paragraph 4.2. Next, the operationalization of the independent variables, namely the different audit committee characteristics are described in paragraph 4.3. After describing the independent variables, the control variables and the operationalization of these variables will be described in paragraph 4.4. In paragraph 4.5, a brief explanation of the regression equation tested in this thesis is given. Paragraph 4.6 discusses several factors which can bias the research executed in this thesis. At last, paragraph 4.7 will explain how the data is collected and how the final sample is constructed.

4.1 Dependent variable

In order to examine whether audit committee effectiveness is associated with higher levels of conditional conservatism, the level of conditional conservatism in each firm has to be measured. Over the years, academic literature developed different measures for measuring the level of conditional conservatism. In this paragraph, I describe the measures used in this empirical study. First, some background information regarding each measure is given. Next, the measure itself is described. Furthermore, the limitations of the chosen measures will be given. Two different measures of conditional conservatism will be used, in order to diminish the effect of using only one measure. As described in the next paragraph, each measure has its limitations which might lead to not exactly capturing conditional conservatism. By using two different measures, the robustness of the results can be enhanced.

4.1.1 Earnings asymmetric timeliness measure of conditional conservatism

The first measure which is used to measure the level of conditional conservatism of each sample firm is the measure developed by Basu (1997). In chapter 2, the definition of conservatism by Basu (1997) was used: “the accountants' tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses”. In other words, this measure focusses on the asymmetric timeliness of earnings. For firms which make more conservative accounting choices, negative earnings are more likely to reverse in the next

period than positive earnings changes (Watts, 2003b). The following measure of Basu (1997) will be used:

$$X_{it}/P_{it} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 D_{it} * R_{it} + \mu$$

X_{it} represents the earnings per share. P_{it} represents the firm's stock market price at the beginning of the year. D_{it} represents a dummy variable for the kind of news (1 for bad news, 0 for good news). R_{it} represents the stock market return of the firm from 9 months before fiscal year-end t to three months after fiscal year-end t (Basu, 1997). When a firm makes a loss, it is defined as bad news, while gains are defined as good news. The i refers to each separate firm while t represents the period of the observation. Basu (1997) found that compared to positive earnings, negative earnings reverse more often in later periods. When the earnings are studied over several years, many reverse negative earnings give an indication of conservatism within a firm. In this model, β_3 is the coefficient of interest indicating the level of conditional conservatism. The higher the coefficient on β_3 , the higher the level of conditional conservatism.

Although this measure is used in different academic papers (e.g. Beekes, Pope & Young, 2004), research provides that the Basu (1997) measure has its limitations. Givoly, Hayn and Natarajan (2007) indicate that the measure of Basu (1997) is only focused on the earnings/return relation, hereby not taking other possible causes of conservatism into account. Besides, Fullana et al. (2016) argue that when using the Basu model in running a regression analysis, multicollinearity issues appear. In computing the model, the variables of interest are multiplied with the variables used in Basu's measure, hereby causing multicollinearity. By capturing conservatism through a second measure and comparing the results, this bias can be restricted and conclusions can be more thorough.

4.1.2 Accruals measure of conditional conservatism

The second model that is used to measure the level of conditional conservatism is the accruals measure developed by Ahmed et al. (2002). Over a longer timeframe, unbiased accounting will balance out positive and negative accruals, leading to net accumulated accruals approaching zero (Givoly & Hayn, 2000). Ahmed et al. (2002) developed an accruals measure, which assumes that firms which are more conservative will have more persistent negative accruals over time. Because the measure is multiplied by -1, the higher this measure of conservatism, the more conservative the firm is in its accounting choices.

The measure of Ahmed et al. (2002) is computed as follows:

AccountCons = (((Net income before extraordinary items + depreciation expense)-operating cash flow)/total assets)-1) averaged over the sample period*

A potential limitation when using this measure is that it can be difficult to find out what part is caused by changed economic circumstances (e.g. changed legislation) and what is caused by the manager's tendency to make conservative accounting choices. By controlling for year-fixed effects, this bias caused by economy-wide changes can be limited.

4.2 Independent variables

In paragraph 2.3, audit committee effectiveness and the different characteristics influencing the effectiveness have been described. To sum up, the size of the AC, independence of the AC, financial expertise of the AC and the activity of the AC are characteristics which are likely to influence the effectiveness. In this paragraph, the operationalization of these different AC characteristics will be described. For each of the independent variables, the predicted signs in the regression are positive. The reason for this is that the variables are computed in such a way, that a higher value for each independent variable is expected to be associated with a higher level of conditional conservatism.

To start with, audit committee independence (ACindependence) is the first independent variable used in this thesis. The number of independent audit committee members will be divided by the total size of the audit committee for each firm-year observation (Lary & Taylor, 2012). As stated in the hypothesis concerning independence, higher proportions are expected to demand higher levels of conditional conservatism.

The second independent variable used in this thesis is audit committee financial expertise (ACfinexp). As stated before, financial expertise enhances audit committee effectiveness (Krishnan & Visvanathan, 2008). Financial expertise in the audit committee is proxied by the proportion of financial experts to the total size of the audit committee (Krishnan & Visvanathan, 2008).

The third independent variable which is tested is the size of the audit committee (ACsize). As stated in the hypothesis concerning the size of the audit committee, audit committee's comprised of 3 to 6 members are expected to be more effective, hereby demanding higher levels of conditional conservatism. In order to run a regression, a dummy

variable is created indicating a '1' when the audit committee consists of 3 to 6 members and '0' otherwise (NACD, 2000).

The fourth independent variable which needs to be computed in order to test its association with conditional conservatism is the age of the audit committee members (ACage). As explained in the literature review and hypothesis development, members reaching the age of 70 tend to operate less effectively (Core et al., 1999). In order to test this association, this variable will be operationalized by computing a proportion of the total members under age 70, divided by the total size of the audit committee.

The last independent variable used in this thesis is the activity of the audit committee. Activity of the audit committee is proxied by the number of board seats each member has (ACothboards). As stated in the previous chapter, members seated in more than 2 other boards are perceived to be less effective (Shivdasani, 1993). This variable is computed by dividing the number of members with 0, 1 or 2 other board seats by the total size of the audit committee.

4.3 Control variables

In the previous paragraph, the operationalization of the dependent and independent construct in this thesis are described. The purpose of this research is to study the association between conditional conservatism and audit committee effectiveness. In order to empirically test this association, some control variables will be added to control for other factors that are likely to influence the chosen measures of conditional conservatism.

The first factor to control for is firm size (Firmsize), computed by the natural log of the total assets of the firms. According to different researchers, firm size affects the measures of conservatism, as larger firms face more political costs, inducing more conservative accounting choices (Ahmed et al. 2002; Givoly, Hayn & Natarajan, 2007).

Another factor to control for is the auditor type. A dummy variable is created where '1' means that the firm is audited by a Big 4 firm, while '0' if a firm is audited by another firm (Chi, Liu & Wang, 2009). According to Chi et al. (2009), this factor needs to be controlled for as it is assumed that Big4 auditors and non-big auditors have different attitudes towards conservatism. Kim, Chung and Firth (2003) find that when firm's management prefers income-increasing accounting policies, Big-4 auditors are more effective in restraining firm's management from opportunistic behavior. During the data selection process, I found that the

complete sample was audited by Big-4 auditors. Because of this, this control variable is not of further use in this research.

The leverage of a firm (Leverage), computed as the long-term debt divided by the total assets (Ahmed et al., 2007) is another factor to control variable. According to them, firms with high leverage face greater shareholder conflicts leading to more conservative accounting.

The growth in sales (Growthofsales), calculated by the % change of the total sales (Ahmed et al., 2002). According to Ahmed et al. (2002) and Ahmed & Duellman (2007), this factors needs to be controlled for as is affects both accruals and it affects the market expectations .

A fifth factor to control for is the influence of unconditional conservatism on conditional conservatism . According to various researchers like Ball and Shivakumar (2005), unconditional conservative accounting choices can limit a manager's ability to make conditional conservative accounting choices. Thus, a control needs to be added for unconditional conservatism. Roychowdhury and Watts (2007) used the Market-to-Book (MTB) ratio as a proxy for unconditional conservatism. They argue that the MTB ratio is negatively related to conditional conservatism, which means that higher MTB ratios will lead to a lower level of conditional conservatism. The MTB ratio is computed as the market value of equity divided by the book value of equity in year t (MTBratio).

The last factor which might bias the results are time-fixed effects. By adding time-fixed effects to the regression, this potential bias is controlled for.

4.4 Regression equations

By combining the variables described in the previous paragraphs, two different regression models are set up to empirically test the hypotheses for both measures of conservatism. For the accruals measure by Ahmed et al. (2002), the following regression model will be executed.

$$AccountCons = \beta_0 + \beta_1 ACindependence + \beta_2 ACFinexp + \beta_3 ACsize + \beta_4 ACage + \beta_5 ACothboards + \beta_6 Firmsize + \beta_7 Leverage + \beta_8 Growthofsales + \beta_9 MTBratio + e$$

In testing the different hypotheses for the conservatism measure by Basu (1997), the following regression model will be executed:

$$X_{it}/P_{it-1} = \beta_0 + \beta_1 ACindependence + \beta_2 ACFinexp + \beta_3 ACsize + \beta_4 ACage + \beta_5 ACothboards + \beta_6 Firmsize + \beta_7 Leverage + \beta_8 Growthofsales + \beta_9 MTBratio + \beta_{10} D_{it} + \beta_{11} R_{it} + \beta_{12} D_{it} * R_{it} + D_{it} (\beta_{13} ACindependence + \beta_{14} ACfinexp + \beta_{15} ACsize + \beta_{16} ACage + \beta_{17} ACothboards + \beta_{18} Firmsize + \beta_{19} Leverage + \beta_{20} Growthofsales + \beta_{21} MTBratio) + R_{it} (\beta_{22} ACindependence +$$

$$\beta_{23}ACFinexp + \beta_{24}ACsize + \beta_{25}ACage + \beta_{26}ACothboards + \beta_{27}Firmsize + \beta_{28}Leverage + \beta_{29}Growthofsales + \beta_{30}MTBratio) + D_{it} * R_{it} (\beta_{31}ACindependence + \beta_{32}ACFinexp + \beta_{33}ACsize + \beta_{34}ACage + \beta_{35}ACothboards + \beta_{36}Firmsize + \beta_{37}Leverage + \beta_{38}Growthofsales + \beta_{39}MTBratio) + e$$

4.5 Libby Boxes, validity of the research and endogeneity concerns

In the previous paragraphs, the design of this research is described. In order to test the association between audit committee effectiveness and conditional conservatism, a regression test is run in order to compute the findings and draw conclusions. Though, it is possible that there are other factors which intervene the tests. Hereby, the results and conclusions might be biased. Therefore, it is important to test these potential biases, also called endogeneity concerns. There are several types of endogeneity concerns which can lead to biased results. Some of the described endogeneity concerns are violations of the OLS assumptions which need to be met. Besides the described endogeneity issues, validity issues are also described.

4.5.1 Libby boxes and validity of this research.

As explained in chapter 2, this research focusses on the association between different audit committee characteristics and the level of conditional conservatism. In the Libby boxes, which can be found in Appendix A, a graphical representation of this thesis is given. The theoretical constructs and hypothesized effects are described in chapter 2 and 3. The operationalization of the theoretical constructs, as well as the control variables which are used in this empirical research are explained in the previous paragraphs in this chapter.

In conducting the research, there are three types of validity which need to be taken into account. The first type of validity which needs to be looked at is construct validity. Construct validity refers to the degree to which the chosen measures capture the underlying (unobservable) theoretical constructs. As explained in paragraph 4.2, each measure of conservatism has some limitations, which raises the question to what extent the chosen measure captures conservatism. Therefore, two different measures of conditional conservatism are chosen in order to capture the theoretical construct conditional conservatism. With respect to audit committee effectiveness, different variables and the corresponding operationalization of these variables are derived from different academic literature. This is described in paragraph 4.3. Due to the lack of data on the number of audit

committee meetings, this variable could not be included in the research, while literature suggests that the number of meetings can be a proxy for audit committee effectiveness. Therefore, it is included as a limitation to this study.

With regards to internal validity, this study focusses on the association between conditional conservatism and audit committee effectiveness. As described in chapter 2, the audit committee is the most influential committee in monitoring firm's management accounting choices. Though, there are several academic papers (e.g. Ahmed & Duellman) which focus on other corporate governance mechanisms in relation to conservatism. Therefore, it is not certain that the internal validity of this study will be high.

The third type of validity which needs to be looked at is external validity. External validity refers to the extent to which the results can be applied to other settings. For firms in countries with a 1-tier board like the United States, this study can be useful and the external validity within this setting is high. Though, there are also countries in which most firms have a 2-tier board like Germany (Jungmann, 2006). Because firms in these countries have a 2-tier board which consists of the board of directors and a separate supervisory boards, the results of this research do not really apply to these contexts. Therefore, the external validity of this research depends on the corporate governance structure of the firm to which these results are applied.

4.5.2 Endogeneity concerns

The first endogeneity concern which could lead to biased results are measurement errors. When computing the different variables, errors might occur when variables are computed in the wrong way. For example, when creating a dummy variable for audit committee member age, the command could be set up in the opposite way. By checking the average for the variable, I can check whether the variables are computed in the right way, as the majority of the audit committee members in my sample is younger than 70. Because there is no need to collect data by hand, the chance of biases due to wrong data input is limited.

The second endogeneity concern is the presence of autocorrelation. When observations are correlated with itself over time and thus dependent, it means that there is autocorrelation (Getis, 2007). When these observations are not independent, the results can be biased. In order to test for the presence of autocorrelation in any of the variables, the Durbin-Watson test will be performed in STATA.

The next endogeneity concern is heteroscedasticity. When the variance in the error terms is not independent from the dependent variable, there is heteroscedasticity (Long & Ervin, 1998). The presence of heteroscedasticity in the data means that the OLS estimator is inefficient, which leads to incorrect inferences. By using White's general test in STATA, a check for heteroscedasticity will be performed.

Another assumption of OLS which needs to be met is that there is no multicollinearity between the predicting variables (Farrar & Glauber, 1967). In other words, multicollinearity is present when explanatory variables are not only correlated with the independent variable but also with each other. Multicollinearity can lead to insignificant coefficients, while in fact these coefficients should be significant. In order to test for multicollinearity, a VIF-test will be performed in STATA.

The next check which needs to be performed is a check for normality. An underlying assumption of OLS regression is that the observations are normally distributed (Jarque & Bera, 1987). When this would not be the case, the OLS estimator will not be efficient and thus of limited use. By plotting the graphs in STATA, the regressions can be checked for normality. Possibly, the data needs to be winsorized in order to increase normality.

Simultaneous causality is another problem which can lead to biased results. Simultaneous causality means that the independent variables and dependent variable determine each other.

The last endogeneity concern in this study is the presence of omitted variables. To a certain extent, it is important to include control variables in order to control for omitted factors. Though, in conducting a research, it is impossible to include all variables of potential influence to the dependent variable. By including more control variables in the regression model, the explanatory power of the model increases but the relevance of the independent variables diminishes. Another factor which might bias the results are time-fixed effects. By adding time-fixed effects to the regression, the effects of economy-wide factors on the measures of conservatism are restricted.

4.6 Data collection and sample selection

As indicated in chapter 1, this research focusses on S&P 500 firms in the United States for the period 2009-2015. The focus in this research is on firms from the S&P 500. Firms in this index represent a big part of the market capitalization in the United States and are obliged to have

an audit committee according to US law (SOX, 2002). In measuring conservatism, the sample period should be stretched over a number of years due to the reverse effects of accruals. Firms in this research should have observations for at least 4 years, hereby limiting the chance that the chosen measures fail in capturing conservatism.

Though, by setting a restriction on the minimum number of firm observations, the chance that the sample size is reduced to only a small number of sample firms is high. By taking a sample over 7 years, it is ensured that the sample contains enough firm-year observations to draw relevant conclusions. In the following paragraphs, the data collection process and the data cleaning process will be described. All tables concerning data collection and data cleaning can be found in Appendix B.

4.6.1 Data collection process

In order to conduct the research, the required data needs to be extracted from the appropriate databases. All databases used in this research are accessed through Wharton Research Data Services, which assures that the data can be reproduced by others. First, the data for all the audit committee variables is extracted from the Institutional Shareholder Services (ISS) database. This database contains data on several corporate governance aspects and specific data on director-level. Second, the data regarding stock returns is extracted from the Compustat security monthly database. From this database, monthly data on stock prices and stock returns are extracted. At last, all other financial data is extracted from the Compustat fundamentals annual database, in which annual data concerning the firms in my sample can be found.

4.6.2 Data cleaning process

To start with, all variables providing relevant firm-year data for the directors are extracted from the ISS database. In table B.1 in appendix B, an overview can be found of the data cleaning process regarding the ISS database. For the years 2009 to 2015, 125.735 were found for 19 different variables. To start with, 77.721 observations were dropped as these observations represented firms which are not in the S&P 500. Next, 29.419 observations for directors which are not part of the audit committee are dropped. As explained before, the focus is on the audit committee and not on the board of directors as a whole. Therefore, these observations are dropped. Because this research is conducted on a firm-year level, the data

on director level need to be converted to firm-year level data. Following the research by Krishnan and Visvanathan (2008), proportions are made for the different audit committee variables. By first generating dummy variables on director level, proportions on firm-year level were made. This conversion of director level data to firm-year level data lead to a drop of 14.133 observations. The final number of observations for this file is 4.462. In order to extract the data from the Compustat databases, a text file is created from the TICKER codes of this final ISS file. The TICKER code is a code which is unique for each firm, hereby enabling to make distinctions between different firms and extracting matching firm data from other databases.

All data concerning the monthly stock returns which are used for the Basu measure of conservatism are extracted from the Compustat security monthly database on the basis of the TICKER text file. An overview of the data cleaning process for this database can be found in table B.2 in appendix B. From the 67.134 beginning firm-month observations, 1.143 observations missing data on closing fiscal stock prices are dropped. Data on closing prices needs to be present, as this data is used to compute the opening stock prices for the Basu measure of conservatism. Next, 16.393 observations are dropped for which the fiscal year does not end in December. All other financial data from the Compustat annual database concerns calendar year data. By not dropping observations for which the fiscal year is not ending in 2012, a mismatch on the basis of the data-year and TICKER could be created. The next step in the data cleaning process is to drop observations for the months 1 to 11. As stated, this database contains monthly stock return data. Following Basu (1997), the data on monthly stock returns is used to compute the stock returns over each year. By computing the stock returns for a whole year, 45.493 observations with data on the months January to November can be dropped. At last, 440 observations with data for the year 2016 are dropped. The final number of observations for this Compustat monthly return file is 3.665.

For all the other financial data needed to conduct this research, the Compustat fundamentals annual database is used. An overview of the data cleaning process for this database can be found in table B.3 in appendix B. The starting number of observations, which are extracted on the basis of the TICKER text file is 6.305. As indicated in chapter 1, financial institutions are excluded to their complex nature. Therefore, firms with a SIC code in the range 6000-6900 are excluded from this research. This leads to a drop of 1.894 firm-year observations. Like described in the previous paragraph, firms with a fiscal year not ending in December are excluded. By dropping these firm-year observations, 1.293 observations are

excluded. At last, 507 observations for which data is missing on one of the control variables is missing are dropped. The final number of observations for this Compustat fundamentals annual file is 2.611.

After working out the three separate databases, STATA is used to merge these databases. Because STATA requires to have one file in which the other databases are merged, the final ISS database file with 4.462 observations is used. By merging the final Compustat annual file into the ISS file, 2.377 observations are dropped for which there is no match. 8 observations are dropped because of the merge with the final Compustat monthly returns file. By inspecting the data on control variables, it is found that these variables contain a small number of extreme values. By excluding the 80 observations for which the data deviates more than 3 times the standard deviation from the mean, potential effects which could be caused by these outliers are diminished. At last, 145 observations are dropped because these firms do not have data for a minimum of 4 years and 204 observations for the year 2008 are dropped. The final sample consists of 1.648 observations spread over 258 firms.

4.7 Summary research design

In this chapter, the operationalization of this research is described. First, a brief overview of this research is given by the Libby boxes. Next, the operationalization of the different theoretical constructs is given. In measuring conditional conservatism, a measure focussing on accruals and a measure focussing on the earnings-return relation will be used. Next, the operationalization of the five different audit committee characteristics studied in this research are described. Following the study by Krishnan and Visvanathan (2008), proportions are computed for four characteristics. Only for the variable audit committee size, a dummy variable is created to test the association with conditional conservatism. Together with four control variables, the before mentioned variables are brought together in two different regressions. In conducting the research, there are several factors which could be of influence to the results. By performing a number of checks in STATA, the influence of these factors can be acknowledged and possibly diminished. This research uses a sample of US firms listed in the S&P 500 for the years 2009 till 2015. The financial data are extracted from the Compustat database and the audit committee data is extracted from the ISS database. The final sample for this research contains 1.648 observations for 258 firms, for which there are at least four firm-year observations.

5. Empirical results and analysis

By executing the empirical part of this research, an answer can be found on the developed hypotheses and finally the research question. To start with, paragraph 5.1 describes the descriptive statistics for the variables used in this research. By analysing the descriptive statistics like the mean of each variable, some insights can be created with respect to the different variables. After the descriptive statistics, the correlation matrix will be described in paragraph 5.2. By looking at the correlations which are significant, some expectations can be raised with respect to the results of the regression analysis. The results of the regressions as noted in paragraph 4.4 will be tabulated and described in paragraph 5.3. By analysing the results, conclusions can be drawn on the five hypotheses tested in this research. On the basis of these outcomes, a conclusion can be drawn with respect to the research question. In paragraph 5.4, a brief description of the different OLS-assumptions tested in this research will be given. To finish up, a short summary of the final outcomes will be given in paragraph 5.5.

5.1 Descriptive statistics

In this paragraph, the descriptive statistics of the variables used in this research are described. By making a comparison with other studies, a general outline of the observations used in this research is given. In table 1, which can be found on the following page, the mean, the standard deviation, the minimum value and the maximum value of each variable are given. As described in paragraph 4.6, the final sample consists of 1,648 observations for US firms listed on the S&P 500 within the period 2009-2015.

For the dependent variable (X_{it}/P_{it-1}) used in the asymmetric timeliness measure of conditional conservatism, a mean of 0,0640 is found. Compared to other studies using this measure (e.g. Beekes et al., 2004), the mean is slightly higher. This small deviation is likely to be due to the different sample periods used, as most other studies use a sample of firms around the year 2000.

The mean for the accruals measure of conservatism is 0,0164, which is slightly higher than the mean found in the research by Krishnan and Visvanathan (2008). This mean indicates that on average, the firms in this sample are conservative. Compared to studies using the same measure of conservatism (e.g. Ahmed & Duellman, 2007), the mean in this research is slightly higher, indicating that firms have become more conservative over the years. Besides, the

minimum and maximum value for this measure are also slightly higher compared to other studies. This also indicates that on average firms have become more conservative. This difference can be due to the sample period, as most other studies use a pre-crisis sample. Possibly, firms have become more conservative due to the financial crisis. This could be an interesting topic for further research.

Table 1: Descriptive statistics variables

Variable	Observations	Mean	Std. Dev.	Min	Max
Dependent variables					
Xit/Pit-1	1.648	0,0640	0,5679	-1,3744	22,8606
AccountCons	1.648	0,0164	0,0404	-0,3112	0,2911
Independent variables					
ACindependence	1.648	0,9928	0,0495	0	1
ACfinexp	1.648	0,5654	0,3015	0	1
ACsize	1.648	0,9709	0,1682	0	1
ACage	1.648	0,7840	0,2268	0	1
ACothboards	1.648	0,8873	0,1598	0	1
Control variables					
Firmsize	1.648	9,5855	1,0459	6,9502	12,2688
Leverage	1.648	0,2513	0,1305	0,0000	0,6970
Growthofsales	1.648	0,0822	0,5961	-0,9769	12,0156
MTBratio	1.648	3,5880	7,6000	-104,2546	63,8627
Basu variables					
Stockmarketreturn	1.648	19,31	29,77	-155,95	218,62
DummyNews	1.648	0,0728	0,2599	0	1
NewsReturn	1.648	0,6410	13,7267	-156	168

Table 1: descriptive statistics for all variables used in this research. The data concerns US firms listed on the S&P 500 for the period 2009-2015, for firms for which there are at least 4 firm-year observations. The description and computation of all variables can be found in paragraphs 4.1, 4.2 and 4.3.

As described in paragraph 4.2, the five audit committee variables are computed as proportions. Because of this, the descriptive statistics of these variables have a value between 0 and 1. For the variable audit committee independence (ACindependence), the mean is 0,9928 and standard deviation 0,0495. This indicates that most sample firms have an audit committee solely comprised of independent members. While some researchers argue that having dependent members in the audit committee can have positive effects, it is obvious that the firms in my sample opt for independent audit committees. Compared to other studies like Lary and Taylor (2012), the mean value is a lot higher. Because the sample period for this

research covers a more recent period, it can be concluded that audit committees have become more independent over the years. This gives rise to the expectation that when running a regression, coefficients for this variable will not be high as there is only a small spread in the value for this variable.

For the variable audit committee financial expertise (ACfinexp), the mean is 0,5654. This indicates that on average, approximately half of the audit committees are made up of members which qualify as financial experts. This mean value is comparable to what other studies on audit committee financial expertise find (e.g. Lary & Taylor, 2012).

The mean for the variable audit committee size (ACsize) is 0,9709, indicating that most audit committees of the firms in this sample are comprised of 3 to 6 members. This gives the indication that the shareholders of the sample firms opt for small audit committees, as suggested in the hypothesis. Although other studies use different measures of ACsize, it is notifiable that all audit committees in this sample are comprised of at least 3 members. Other researchers like Lary & Taylor (2012) find that there were firms in their sample with audit committees not complying to the recommendations of the BRC (1999), that audit committees should be comprised of at least 3 members.

For the variables used to measure audit committee activity, the mean values are 0,7840 for audit committee age (ACage) and 0,8873 for audit committee other board seats (ACothboards). Audit committees of the firms used in this study are comprised of more members over the age of 70, compared to the study by Core et al. (1999), which finds that approximately 92% of the audit committee members is younger than 70 years old. For the variable ACothboards, the mean value is higher compared to other studies like Core et al. (1999). This suggests that on average over the years, audit committee members decide to limit the number of board seats they represent. Hereby, audit committee members enable themselves to devote more time and energy to their role in the boards they are seated in.

With respect to the control variables, the mean for firm size is 9,5855, for leverage 0,2513 and for sales growth 0,0822. Compared to the study by Ahmed et al. (2002), the average firm size has increased over the years, the leverage ratio stayed stable and the average sales growth has declined, indicated that the growth rate of the companies listed on the S&P 500 index is diminishing. The mean for the variable market-to-book-ratio is 3,5880, which is higher than the ratio found in the paper by Roychowdhury and Watts (2007). This difference can be due to the different samples and sample periods used in both studies. This

higher MTB ratio indicates that over the years, firms became more unconditional conservative in its accounting choices.

5.2 Correlation analysis

In the following paragraph, the Pearson correlation matrix is presented in table 2 on the next page and analysed for the variables used in this research. Only for the variables which are significant at a 5% significance level, a description is given in this paragraph. By analysing the correlation coefficients, expectations with respect to the linear relation between each combination of variables can be formed. Significant correlations are a first indication towards significant regression coefficients between these variables. Because the variables stock market return, dummy for the kind of news and the multiplication of these variables is only used to compute the Basu (1997) measure of conservatism, correlations with these variables are not further explained. When a correlation coefficient is below 0,3, the strength of the correlation is weak. As shown in the upcoming paragraph, most correlations are below 0,3, indicating that most correlations for this study are weak.

For the variable X_{it}/P_{it-1} , which is the dependent variable in Basu's (1997) measure of conservatism, there is a significant correlation with the variables growth of sales, stock market return and the DummyNews variable. The significant correlation with growth of sales seems logic, as sales growth will lead to higher earnings and thus a higher value for this variable. The significant correlation with the other two variables follows from the fact that these variables are all part of Basu's (1997) measure of conservatism.

For the accruals measure of conservatism (Ahmed et al., 2002), there is a significant correlation with the independent variables audit committee financial expertise and audit committee age. Although significant, the correlations are small, indicating that there is not really a strong linear relation with this measure of conservatism. Besides, the coefficient on audit committee age is negative, suggesting the opposite from what is hypothesized in paragraph 3.4. Besides, three out of the four control variables are significantly correlated with this measure of conservatism. Firm size and MTB ratio are negatively correlated with this measure, suggesting that larger firms and firms with a higher MTB ratio make less conditional conservative accounting choices. Though, these correlations are relatively small, suggesting only a weak relation between these variables. The coefficient on the variable leverage is

Table 2: Pearson's correlation matrix

	Xit/Pit-1	Account-Cons	ACIndependence	ACfinexp	ACsize	ACage	ACothboards	Firmsize	Leverage	Growthof-sales	MTRatio	Stockmar-ketreturn	Dummy-News	News-Return
Xit/Pit-1	1,0000													
AccountCons	-0,0377 0,126	1,0000												
ACIndependence	0,0054 0,826	0,023 0,351	1,0000											
ACfinexp	0,0355 0,150	0,0877* 0,000	0,0339 0,169	1,0000										
ACsize	0,0013 0,957	0,0049 0,841	-0,0043 0,862	0,0065 0,792	1,0000									
ACage	0,0034 0,889	-0,0739* 0,003	-0,0381 0,122	-0,0179 0,467	0,0383 0,120	1,0000								
ACothboards	0,0131 0,596	0,0385 0,119	0,0054 0,828	-0,0681* 0,006	0,0323 0,190	-0,0468 0,058	1,0000							
Firmsize	0,0458 0,107	-0,0622* 0,181	0,0264 0,098	-0,0886* 0,045	-0,0847* 0,013	0,0091 0,620	-0,0421 0,079	1,0000						
Leverage	-0,0317 0,198	0,0654* 0,008	0,021 0,394	0,1466* 0,000	-0,0014 0,954	-0,019 0,442	-0,0047 0,848	0,0051 0,000	1,0000					
Growthofsales	0,3947* 0,000	-0,0009 0,972	0,0054 0,827	-0,015 0,542	0,0459 0,062	-0,0303 0,219	-0,0227 0,356	0,0722* 0,129	0,0396 0,108	1,0000				
MTRatio	0,0442 0,073	-0,0526* 0,033	-0,0057 0,816	-0,0208 0,400	0,1087* 0,000	-0,0313 0,205	0,0068 0,783	-0,0155 0,253	-0,0559* 0,023	-0,0189 0,443	1,0000			
Stockmarketreturn	0,0795* 0,001	-0,0813* 0,001	-0,0218 0,376	0,0144 0,560	0,0283 0,251	0,0262 0,289	-0,0287 0,244	-0,0503* 0,000	-0,0702* 0,004	0,0830* 0,001	0,0412 0,095	1,0000		
DummyNews	-0,0902* 0,000	0,2469* 0,000	0,0194 0,431	0,0065 0,792	0,0069 0,780	-0,0802* 0,001	-0,0236 0,339	-0,0483 0,953	0,1461* 0,000	-0,0609* 0,013	-0,0194 0,431	-0,0989* 0,000	1,0000	
NewsReturn	0,0025 0,920	-0,0191 0,438	-0,0069 0,779	-0,0159 0,518	-0,0048 0,847	-0,0326 0,185	-0,0211 0,392	-0,0378 0,126	-0,0065 0,792	-0,0167 0,497	0,0143 0,562	0,4317* 0,000	0,1667* 0,0000	1,0000

Table 3 Pearson's correlation matrix. The data concerns US firms listed on the S&P 500 for the period 2009-2015, for firms for which there are at least 4 firm-year observations. The description and computation of all variables can be found in paragraphs 4.1, 4.2 and 4.3. The top row in each line represents the correlation coefficient. A * indicates that the correlations are significant at a 5% significance level. The bottom row in each line represents the p-value of each correlation coefficient.

positive and significant but small, indicating that there is a fairly weak relation between firms having more leverage and applying more conditional conservative accounting policies. Looking at the correlation coefficients between the different independent variables, audit committee's with a higher proportion of financial experts will also contain a higher proportion of members which are seated in more than 2 boards, although the correlation is small.

The correlation coefficients between the variable audit committee financial expertise and firm size is negative and significant but small. The correlation with leverage is positive and significant but small. This indicates that firms with audit committees containing a higher proportions of members with financial expertise are likely to be smaller and have a higher leverage ratio. For audit committee size, firm size is negatively and significantly correlated but this correlation is fairly weak. Besides, audit committee size is positively and significantly correlated with the MTB ratio. Both correlations are also relatively small. This implies that firms having audit committees comprised of 3 to 6 members tend to be smaller and make more unconditional conservative accounting choices.

At last, firm size is positive and significantly correlated to sales growth, indicating that larger firms experience higher levels of sales growth. Besides, firms with a higher leverage ratio are assumed to make less unconditional conservative accounting choices.

5.3 Regression results and analysis

As explained in chapter 4, two different measures of conditional conservatism are used in conducting the empirical research. In table 3, general information for both regression models is given. In order to compare the outcomes of both regression models, the same sample of 1.648 observations is used. The R^2 of the regression model used for the asymmetric timeliness measure of Basu (1997) indicates that approximately 23,3% of the variance in the level of conditional conservatism can be explained by the chosen variables in this research. The R^2 for the regression model using the accruals measure of Ahmed et al. (2002) indicates that 2,3% of the variance in the outcomes of this measure are explained by the variables of interest. Compared to prior literature like the study by Krishnan and Visvanathan (2008), the explanatory power of this model is somewhat smaller. When inspecting the regression coefficients for their study and the coefficients for this study, it can be concluded that the difference in explanatory power is mostly due to the number of control variables. When the

Table 3: Additional information regression models

Additional information		
	Xit/Pit-1	AccountCons
N	1.648	1.648
R²	0,2328	0,0233
Adjusted R²	0,2113	0,0143
Time fixed effects?	Yes	Yes

Table 5: In this table, general information for both regression models can be found. The data concerns US firms listed on the S&P 500 for the period 2009-2015, for firms for which there are at least 4 firm-year observations. In chapter 4, an explanation of both regression models is given. The first row represents the number of observations used for both regression models. In the second and third row, the R² and the adjusted R² are given. These numbers indicate the explanatory power of the regression model. The fourth row in the table shows that time-fixed effects have been included in the regressions.

Table 4: Regression output for both measures of conditional conservatism

Variables:	Xit/Pit-1			AccountCons		
	Coefficient (P-value)	Standard deviation	T-statistic	Coefficient (P-value)	Standard deviation	T-statistic
Constant	0,1057 0,563	0,1830	0,58	0,0054 0,778	0,0190	0,28
ACindependence	-0,0551*** 0,000	0,0077	-7,11	0,0155 0,362	0,0170	0,91
ACfinexp	-0,0132 0,113	0,0083	-1,59	0,0105*** 0,000	0,0029	3,57
ACsize	0,0003 0,924	0,0033	0,09	0,0021 0,444	0,0027	0,77
ACage	-0,0008 0,757	0,0025	-0,31	-0,0136*** 0,003	0,0046	-2,93
ACothboards	-0,0128 0,174	0,0094	-1,36	0,0099 0,147	0,0068	1,45
Firmsize	-0,0011 0,276	0,0010	-1,09	-0,0012 0,176	0,0009	-1,36
Leverage	0,0259** 0,044	0,0129	2,01	0,0182*** 0,009	0,0069	2,62
Growthofsales	0,0015 0,579	0,0028	0,56	-0,0004 0,686	0,0011	-0,4
MTBratio	-0,0005 0,137	0,0004	-1,49	-0,0003** 0,024	0,0001	-2,25

Table 7: In this table, the OLS-regression output for the variables of interest is presented. The data concerns US firms listed on the S&P 500 for the period 2009-2015, for firms for which there are at least 4 firm-year observations. A description of all variables can be found in chapter 4. The left part of the table represent the regression output for the earnings measure of conservatism. The right side of the table represents the accruals measure of conservatism. For both parts, the left column shows the regression coefficients with the corresponding P-values. The *, ** and *** indicate that the coefficients are significant at a 10%, 5% or 1% significance level. The second column represents the standard deviation and the last column represents the t-statistic, corresponding to the p-value.

independent variables of both studies are compared, it can be concluded that the contribution of these variables does not really differ.

Although it did not have a significant effect on the results, time-fixed effects were included in both regression models. By including these time-fixed effects, potential economy-wide factors affecting the level of conditional conservatism during the sample period are limited. In the following paragraphs, the results of the regressions tested in this research are discussed in the context of the different hypotheses. The results for both regression models are tabulated in table 4, which can be found on the following page.

5.3.1 Audit committee independence

The first variable of interest in this research is the variable indicating the proportion of independent members in the audit committee. The following hypothesis is tested in this research is hypothesis 1: *“More independent audit committees demand higher levels of conditional conservatism”*. As described in chapter 2 and 3, more independent audit committees are perceived to be more effective.

Looking at the results in table 4 for the variable ACindependence, it is found that the coefficient is significant at a 1% significance level for the regression model using Basu’s measure. Though, this coefficient is found to be negative ($\beta_{31} = -0,0551$). Thus, when looking at the results for the regression model using Basu’s measure of conditional conservatism, hypothesis 1 is rejected. This implies that firms which are more conservative have audit committees which are significantly less independent. This is opposed to what is hypothesized in this study. Though, this coefficient is relatively small, as an increase in the level of conservatism with 1 is related to a small decrease of 5,5% in the proportion of independent members in the audit committee.

Studying ACindependence in relation to the regression model for the accruals measure of Ahmed et al. (2002), a positive coefficient but insignificant coefficient is found. This implies that the proportion of independent audit committee members is not significantly related to the level of conditional conservatism. Thus, following the results of this model, hypothesis 1 is rejected as well.

Therefore, it can be concluded that the extent to which audit committee independence is associated with conditional conservatism depends on the chosen measure. When using the asymmetric timeliness measure, higher audit committee independence results in significantly

lower levels of conditional conservatism. This means that there is no support for H1 and instead evidence for an opposite effect.

5.3.2 Audit committee financial expertise

As described in chapter 2, financial expertise of audit committee members enhances the effectivity of the audit committee, hereby demanding a higher level of conservatism. This expected relation is summarized in the following hypothesis: *"H2: Audit committees containing a higher proportion of financial experts demand higher levels of conditional conservatism"*.

Looking at table 4, , the results for the asymmetric timeliness measure indicate that there is no significant difference in the proportion of financial experts in relation to conditional conservatism. Therefore, using this measure of conservatism, there is no support for hypothesis 2.

The coefficient for financial expertise using the accruals measure of conservatism is found to be positive and significant ($\beta_{32}=0,0105$) at a 1% significance level. This indicates that an increase in the level of conditional conservatism with 1 is related to an increase in the proportion of financial experts in the audit committee of approximately 1%. As this coefficient is significant, this result gives support for hypothesis 2 that audit committees with a higher proportion of financial experts demand higher levels of conservatism.

As there is support for this hypothesis when using the accruals measure of conservatism, it can be concluded that audit committees containing a higher proportion of independent members are associated with a higher level of conditional conservatism.

5.3.3 Audit committee size

In chapter 2 and 3, it is argued that audit committees containing three to six members demand higher levels of conditional conservatism. This was summarized in the following hypothesis: *"H3: Audit committees consisting of three to six members demand a higher level of conditional conservatism than audit committees with more than six member."*

When inspecting the regression results for the variable audit committee, it can be concluded that the coefficients for both models coincide with each other in that they are positive. Though, when zooming in on the significance level of both coefficients, it can be concluded that both coefficients are not significant.

Because the coefficient for audit committee size in relation to both measures of conservatism is insignificant, there is no support for hypothesis 3 and is therefore rejected. Thus, it can be reasoned that there is no relation between the size of the audit committee and the level of conditional conservatism applied by firms.

5.3.4 Audit committee activity

As explained in chapter 2 and 3, the activity of audit committee members is likely to influence the level of conservatism within firms. Members serving in more than 3 boards and members over the age of 69 are argued to be less effective, hereby reducing the overall effectiveness of the audit committee. In order to draw conclusions, two hypotheses are tested in this research.

For the variable measuring audit committee effectiveness through the proportion of members under the age of 70, the following hypothesis is tested: " *H4: Audit committees containing a higher proportion of members under age 70 demand higher levels of conditional conservatism*".

Looking at the results for this variable in table 4, the coefficients for both measures of conservatism are negative. For the asymmetric timeliness measure, the coefficient for audit committee age is insignificant. Therefore, there is no support for hypothesis 4. Using the accruals measure of conservatism, it can be concluded that there is a negative and significant relation ($\beta_4 = -0,0136$) between audit committee age and the level of conservatism. This coefficient is significant at a 1% significance level. This results gives opposite evidence of what is hypothesized, as these results indicate that audit committees containing a higher proportion of members over the age of 70 demand higher levels of conservatism. Therefore, there is no support for hypothesis 4. Instead, there is evidence for an opposite relation between the age of audit committee members and conservatism.

Besides the age of audit committee members, the number of board seats members are participating in is also a proxy for audit committee activity. In order to test this assumption, the following hypothesis is tested in this study: " *H5: Audit committees containing a higher proportion of members serving in less than 3 boards demand a higher level of conditional conservatism*". Looking at the results in table 4, it can be concluded that the coefficient for this variable is insignificant for both measures of conservatism. Therefore, it can be concluded that there is no significant difference in the level of conservatism for audit committees with a high proportion of members participating in more than 2 boards other boards compared to

audit committees containing a low proportion of members participating in more than 2 boards other boards. Thus, there is no support for hypothesis 5.

5.3.5 Influence of the control variables

In paragraph 4.3, it is explained that there are several factors which are likely to influence the chosen measures of conservatism. Therefore, several control variables are included in the regressions executed in this study. Because the asymmetric timeliness measure and accruals measure use different indicators to determine the level of conservatism for each firm-year observation, it is likely that there are differences in the extent to which the control variables influence the chosen measures.

First, the regression coefficients of the control variables for the asymmetric timeliness measure by Basu (1997) are clarified. Looking at table, it can be found that only the coefficient for leverage ($\beta_{37}=0.0259$) is significant at a 5% significance level. This means that 2,6% of the change in the level of conservatism is explained by an increase in the leverage ratio. For this regression, there are no signs that any of the other control variables explain some of the variance in the outcomes of the conservatism measure.

Second, the coefficients of the control variables for the accruals measure by Ahmed et al. (2002) are analysed. As can be seen in table 4, both leverage ($\beta_7=0,0182$) and the MTB-ratio ($\beta_9=-0,0003$) are significantly related to conditional conservatism. Therefore, it can be concluded that firms with more leverage and a lower MTB-ratio make more conditional conservative accounting choices. For the variables firm size and growth of sales, there is no indication that there is a relation with the level of conditional conservatism.

5.4 Testing OLS-assumptions

As described in paragraph 4.5.2, some assumptions of OLS-regressions can be of influence in running a regression analysis, when these assumptions are not fulfilled. Therefore, it is important to check these assumptions. By checking these assumptions, the strength of the regression results and thus the conclusion can be enhanced.

The first assumption which needs to be checked is the presence of autocorrelation. As stated in paragraph 4.5.2, the presence of autocorrelation can be checked by performing the Durbin-Watson test. In order to overcome the potential influence of autocorrelation, '*robust*'

is added in STATA to both regression models. Hereby, the influence of autocorrelation is diminished.

The second assumption of OLS which needs to be checked for is the presence of heteroskedasticity. In order to check whether heteroskedasticity is present in the data, a Breusch-Pagan test is performed. When the null hypothesis for this test is rejected, it means that there is no heteroskedasticity present in the data. For the regression using the asymmetric timeliness measure of conservatism, the p-value is 0,0000. This means that the null hypothesis is rejected for this model, indicating that there are no heteroskedasticity concerns for this model. For the regression using the accruals measure of conservatism, the p-value is also 0,0000. Thus, it can be concluded that both regression models do not suffer from the presence of heteroskedasticity.

Next, a check needs to be performed for the presence of multicollinearity in both regression models. This check is done by performing a VIF-test, whereby VIF scores below 10 indicate that it is not likely that multicollinearity is present. For the regression using the accruals measure of conservatism, it is found that none of the VIF-scores is above 10. Therefore, it can be concluded that there is no multicollinearity present in the model. Next, the regression performed for the asymmetric timeliness measure is inspected. For this regression, some multicollinearity is found. As shown in paragraph 4.4, all variables are multiplied by the return variable, the news variable and the news*return variable. As these variables are part of the asymmetric timeliness measure of conservatism when computed on its own, it is logic that the found coefficients for the variables of interest are somewhat influenced by the news*return variable. Because of this, the coefficients found for the regression model for Basu's measure of conservatism can be inefficient. This is in line with what Fullana et al. (2016) find in their study, which is described in paragraph 4.1.1. Therefore, an alternative model using an accruals measure to measure conservatism is used in this study to overcome the problems with Basu's measure and draw up more underpinned conclusions.

The next concern which needs to be taken into account is normality. By inspecting the data before running the regressions, normality problems can be lit up. As indicated in table B.4 in appendix B, four variables of interest in this research were adapted using winsorizing in order to overcome problems with variables which were not normally distributed. To check whether the dependent variables are normally distributed, a Shapiro-

Wilk test is performed for both models. As the probability values for both models is 0,0000, it can be concluded that the dependent variable in both models is normally distributed.

Further on, simultaneous causality is also a problem when running an OLS-regression. For this research, it is unlikely that there is simultaneous causality, because the audit committee is chosen by the shareholders, while the level of conservatism is essentially chosen by firm's management. In other words, it is unlikely that firm's management can have influence in determining the composition of the audit committee.

The last factor which could bias the results is the presence of omitted variables. As stated in paragraph 4.5.2, it is impossible to include all variables of influence to the dependent variables. Therefore, it is possible that there are some omitted variables. By performing the Ramsey test, a check can be performed for the presence of omitted variables. For the asymmetric timeliness measure, the probability value is 0,0000, indicating that there are omitted variables influencing the regression coefficients. For the regression using the accruals measure of conservatism, the probability value is 0,4410 indicating that it is likely that there are no omitted variables affecting the regression coefficients.

Overall, the different tests indicate that the coefficients for regression model of the accruals measure are more reliable, therefore enhancing the soundness of the conclusions to be drawn. Looking at the relevance of the regression model using the asymmetric timeliness measure, it can be concluded that the coefficients are not really reliable and thus to a less extent of us in drawing final conclusions.

5.5 Summary empirical results and analysis

In this chapter, the results of the empirical part of this research are presented and analysed. First, the descriptive statistics for the variables used in this research are presented. By analysing the mean values for all variables, some early expectations can be raised to the outcomes of the regression analysis. For example, it was found that for the control variable measuring the type of auditor, it was found that all the firms in the sample are audited by one of the big-4 firms. Therefore, this variable was not included in this research. For the other variables, the mean values were compared to prior literature. After the descriptive statistics, the Pearson correlation matrix was presented and analysed. By inspecting the correlation coefficients, some expectations could be raised with respect to the outcomes of the regression analysis. Next, the outcomes of both regression models are presented. By comparing the

regression coefficients per hypothesis for each model, some conceptual conclusions could be drawn up. For the regression model using the asymmetric timeliness measure of conservatism, the variables audit committee independence and leverage are found to be significant. Though, the coefficient for audit committee independence was negative, suggesting an opposite relation of what was hypothesized. For the regression model using the accruals model of conservatism, the regression coefficients for audit committee financial expertise, audit committee age, leverage and MTB-ratio are significant. The coefficients for financial expertise and leverage are positive and the coefficients for age and MTB-ratio are negative. This suggests that firms applying more conditional conservative accounting policies have a higher proportion of financial experts in the audit committee, have a higher proportion of audit committee members over the age of 69, have a higher leverage ratio and a lower MTB-ratio. At last, the different OLS-assumptions were tested. It is found that in the regression model using the asymmetric timeliness measure, multicollinearity and omitted variables are present. This indicates that the reliability of this model is relatively low compared to the model using the accruals measure of conservatism.

6. Conclusions

6.1 Discussion

This study focusses on the association between conditional conservatism and audit committee effectiveness. As indicated in the literature review, many researchers have built on positive accounting theory in explaining what makes that some firms are more conservative in their reporting than others. While prior research is mainly focussed on the board of directors as a whole like Ahmed and Duellman (2007) or focus on specific characteristics of the audit committee (e.g. Krishnan & Visvanathan, 2008). This study brings the different audit committee characteristics having impact on its effectiveness together to see whether audit committee effectiveness is associated with accounting conservatism and in particular conditional conservatism.

The essence of this research is to find an answer to the following question: *“What is the association between audit committee effectiveness and conditional accounting conservatism”*. In order to find an answer to this question, five different hypotheses for five audit committee characteristics have been developed. By testing these hypotheses through two different regression models us the two different measures of conservatism, sound conclusions can be drawn. When inspecting both models, it is found that the model using the asymmetric timeliness measure of conservatism suffers from different biases. Because of this, the found coefficients are inefficient which can lead to inaccurate conclusions. Therefore, the conclusions drawn in this thesis will be mainly based on the regression model using the accruals measure of conservatism.

The first audit committee characteristic of interest is audit committee independence. Based on the results, it can be concluded that audit committee independence is not significantly related to conditional conservatism. Although independence is perceived to enhance audit committee effectivity, the results suggest that audit committee independence is not associated with higher levels of conditional conservatism.

Second, the results indicate that a higher proportion of audit committee members qualified as financial members is significantly related to higher levels of conditional conservatism. This is in line with the conclusions of Krishnan and Visvanathan (2008), who argue that audit committee members qualified as financial experts are more effective in monitoring and therefore enhance conservatism.

With respect to the size of the audit committee, no significant relation is found with conditional conservatism. As described in chapter 2, prior literature is unambiguous in what an appropriate size is for the audit committee. The results from this study therefore indicate that in relation to conditional conservatism, the audit committee size is not of significant relevance.

As described in chapter 2, audit committee activity is argued to be influencing audit committee effectiveness and therefore related to the level of conditional conservatism. Looking at audit committee age, it is concluded that opposed to what is hypothesized, audit committees comprised of a higher proportion of members over the age of 70 are significantly related to higher levels of conditional conservatism. For the proportion of audit committee members with less than 3 other board seats, it is concluded that the number of board seats each members has does not significantly impact the level of conditional conservatism.

In answering the research question, the results of this research suggest that audit committee effectiveness is not related to conditional conservatism. Only two of the five audit committee characteristics contributing to audit committee effectiveness are found to be significantly related to conservatism, of which the results for audit committee independence suggest an opposite relation.

6.2 Contribution and limitations

This research contributes to prior literature as it studies the association between conditional conservatism and the different audit committee characteristics contributing to its effectiveness together. As indicated in the previous paragraph, only 2 out of 5 audit committee characteristics are significantly related to conditional conservatism. This implicates for important stakeholders like the shareholders of a firm that the composition of the audit committee is not really a determinant for the level of conditional conservatism.

When generalizing the results of this study, it is important to note that this study has its limitations. To start with, there are some factors to consider regarding the independent variables and control variables used in this study. The first factor is that on average, the audit committees in the sample used in this study are solely comprised of independent members. Therefore, it is possible that the regression models used in this study were not able to find significant coefficients for the variable audit committee independence. Another factor to consider is that literature on audit committee effectiveness suggests that the number of audit

committee meetings is an important determinant (Jun Lin et al., 2008). Unfortunately, there was not enough data available to use this variable. By not using this variable, audit committee effectiveness is not captured as a whole. At last, the presence of outside blockholders is something which is likely to have impact. Zhong, Gribbin and Zheng (2007) find that outside blockholders are able to monitor managers' actions themselves. Hereby, they might replace the role the audit committee plays in monitoring the accounting choices made by firms' management. Hereby, the perceived relation between audit committee effectiveness and conditional conservatism might be affected.

With respect to the dependent variable in this research, there are also some factors to consider when generalizing the results. Literature on accounting conservatism suggests that unconditional conservatism induces conditional conservatism (e.g. Ball & Shivakumar, 2005). By controlling for unconditional conservatism through the MTB-ratio, it is attempted to diminish this factor. Though, in measuring conditional and unconditional conservatism, a wide range of measures have been developed (Watts, 2003b). As there are so many measures, it cannot be ensured that the chosen measures fully capture conditional and unconditional conservatism, because each measure captures conservatism from another perspective.

At last, there are two other factors to consider when generalizing the results. One important factor to consider is that the explanatory power of both models used in this study are relatively low. This means that it is likely that there are other factors affecting the level of conditional conservatism but which are not captured in both models. Second, the sample used in this study is fully comprised of US firms. US firms have a 1-tier board, compared to most non-US firms having 2-tier boards. Because firm's management and external supervisors are seated in the same board for US firms, it remains questionable to what extent the results of this research can be generalized to firms with 2-tier boards.

6.3 Recommendations for further research

This study gives some leads for further research. As explained in paragraph 5.1, there are some differences between the firms in the sample used for this research compared to studies prior to the financial crisis on this topic. Especially with respect to the different audit committee characteristics, there is a greater spread in these variables in the study by Krishnan and Visvanathan (2008). Therefore, it could be an interesting topic to replicate this study but instead compute a sub-sample analysis between a pre-crisis and a post-crisis sample.

Next, it could be interesting to include the number of audit committee meetings, as this is also a factor in audit committee effectiveness. Therefore, audit committee effectiveness is captured to a greater extent. At last, a recommendation for further research is to use different measures of conditional conservatism to see what the cause of the low explanatory power of both models is. By doing this, an answer can be found to the question whether the low explanatory power can be contributed to the fact that the conditional conservatism measures fail in capturing conservatism, or that audit committee characteristics are indeed limitedly related to conservatism.

At last, it could be interesting to replicate this study on a sample of smaller and middle size firms which have an audit committee. As indicated, the firms in this sample are very large and listed on the public stock exchange. Therefore, these companies are under intense scrutiny from different stakeholders and are likely to have financial department with a lot of financial expertise. For smaller firms, the role of the audit committee might be different as these firms are likely to have less financial expertise within the organization and are therefore more dependent on the audit committee.

Bibliography

- Abbott, L. J., & Parker, S. (2000). Auditor selection and audit committee characteristics. *Auditing: A journal of practice & theory*, 19(2), 47-66.
- Abbott, L. J., Parker, S., & Peters, G. F. (2000). *The effectiveness of Blue Ribbon Committee Recommendations in mitigating financial misstatements: an empirical study*. Working paper.
- Abbott, L. J., Parker, S., & Peters, G. F. (2004). Audit committee characteristics and restatements. *Auditing: A Journal of Practice & Theory*, 23(1), 69-87.
- Ahmed, A. S., Billings, B. K., Morton, R. M., & Stanford-Harris, M. (2002). The role of accounting conservatism in mitigating bondholder-shareholder conflicts over dividend policy and in reducing debt costs. *The Accounting Review*, 77(4), 867-890.
- Ahmed, A. S., & Duellman, S. (2007). Accounting conservatism and board of director characteristics: An empirical analysis. *Journal of accounting and economics*, 43(2), 411-437.
- Ball, R., & Shivakumar, L. (2005). Earnings quality in UK private firms: comparative loss recognition timeliness. *Journal of accounting and economics*, 39(1), 83-128.
- Basu, S. (1997). The conservatism principle and the asymmetric timeliness of earnings 1. *Journal of accounting and economics*, 24(1), 3-37.
- Beasley, M. S. (1996). An empirical analysis of the relation between the board of director composition and financial statement fraud. *Accounting review*, 443-465.
- Beasley, M. S., Carcello, J. V., Hermanson, D. R., & Neal, T. L. (2009). *The audit committee oversight process*. Contemporary Accounting Research, 26(1), 65-122.
- Beaver, W. H., & Ryan, S. G. (2005). Conditional and unconditional conservatism: Concepts and modelling. *Review of Accounting Studies*, 10(2-3), 269-309.
- Beekes, W., Pope, P., & Young, S. (2004). The link between earnings timeliness, earnings conservatism and board composition: evidence from the UK. *Corporate Governance: An International Review*, 12(1), 47-59.
- Bloomfield, R. J. (2002). The "incomplete revelation hypothesis" and financial reporting. *Accounting Horizons*, 16(3), 233-243.

- Blue Ribbon Committee (BRC). (1999). Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committees, New York Stock Exchange and National Association of Securities Dealers, Stamford, NY.
- Brennan, N. M., & Kirwan, C. E. (2015). Audit committees: practices, practitioners and praxis of governance. *Accounting, Auditing & Accountability Journal*, 28(4), 466-493.
- Core, J. E., Holthausen, R. W., & Larcker, D. F. (1999). Corporate governance, chief executive officer compensation, and firm performance. *Journal of financial economics*, 51(3), 371-406.
- Demski, J. S. (1988). Positive accounting theory: A review. *Accounting, Organizations and Society*, 13(6), 623-629.
- DeZoort, F. T., Hermanson, D. R., Archambeault, D. S., & Reed, S. A. (2002). Audit committee effectiveness: A synthesis of the empirical audit committee literature. *Journal of accounting literature*, 21.
- Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of management review*, 14(1), 57-74.
- EY. (2013). *Greater business challenges call for stronger audit committees*. EY.
- Fafatas, S.A., (2010) "Auditor conservatism following audit failures", *Managerial Auditing Journal*, 25 (7), 639 - 658
- Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *The journal of Finance*, 25(2), 383-417.
- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The journal of law and Economics*, 26(2), 301-325.
- Farrar, D. E., & Glauber, R. R. (1967). Multicollinearity in regression analysis: the problem revisited. *The Review of Economic and Statistics*, 92-107.
- Felo, A. J., Krishnamurthy, S., & Solieri, S. A. (2003). Audit committee characteristics and the perceived quality of financial reporting: an empirical analysis.
- Financial Accounting Standards Board (FASB) (2010). *Statement of Financial Accounting Concepts No. 8, Conceptual framework for financial reporting*. Norwalk, CT: FASB.
- Forgeas, R. (2008). *Is IFRS that different from US GAAP*. Retrieved from IFRS.com <http://www.ifrs.com/overview/general/differences.html>

- Fullana, O., González, M., Nave, J. M., & Toscano, D. (2016). Endogeneity bias in the OLS estimates of Basu's model. *International Journal of Economics and Management Systems*
- García Lara, J. M. G., Osma, B. G., & Penalva, F. (2009). Accounting conservatism and corporate governance. *Review of accounting studies*, 14(1), 161-201.
- Getis, A. (2007). Reflections on spatial autocorrelation. *Regional Science and Urban Economics*, 37(4), 491-496.
- Givoly, D., & Hayn, C. (2000). The changing time-series properties of earnings, cash flows and accruals: Has financial reporting become more conservative?. *Journal of accounting and economics*, 29(3), 287-320.
- Givoly, D., Hayn, C. K., & Natarajan, A. (2007). Measuring reporting conservatism. *The Accounting Review*, 82(1), 65-106.
- Jarque, C. M., & Bera, A. K. (1987). A test for normality of observations and regression residuals. *International Statistical Review/Revue Internationale de Statistique*, 163-172.
- Jensen, M. C. (1983). Organization theory and methodology. *Accounting review*, 319-339.
- Jensen, M. C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *the Journal of Finance*, 48(3), 831-880.
- Jun Lin, Z., Xiao, J. Z., & Tang, Q. (2008). The roles, responsibilities and characteristics of audit committee in China. *Accounting, Auditing & Accountability Journal*, 21(5), 721-751.
- Jungmann, C. (2006). The effectiveness of corporate governance in one-tier and two-tier board systems—Evidence from the UK and Germany—. *European Company and Financial Law Review*, 3(4), 426-474.
- Kalbers, L. P., & Fogarty, T. J. (1993). Audit committee effectiveness: An empirical investigation of the contribution of power. *Auditing*, 12(1), 24.
- Kim, J. B., Chung, R., & Firth, M. (2003). Auditor conservatism, asymmetric monitoring, and earnings management. *Contemporary Accounting Research*, 20(2), 323-359.
- Klein, A. (1998). Firm performance and board committee structure 1. *The Journal of Law and Economics*, 41(1), 275-304.
- Klein, A. (2002a). Economic determinants of audit committee independence. *The Accounting Review*, 77(2), 435-452.
- Klein, A. (2002b). Audit committee, board of director characteristics, and earnings management. *Journal of accounting and economics*, 33(3), 375-400.

- Krishnan, G. V., & Visvanathan, G. (2008). Does the SOX definition of an accounting expert matter? The association between audit committee directors' accounting expertise and accounting conservatism. *Contemporary Accounting Research*, 25(3), 827-858.
- Lary, A. M., & Taylor, D. W. (2012). Governance characteristics and role effectiveness of audit committees. *Managerial Auditing Journal*, 27(4), 336-354.
- Long, J. S., & Ervin, L. H. (2000). Using heteroscedasticity consistent standard errors in the linear regression model. *The American Statistician*, 54(3), 217-224.
- Menon, K., & Williams, J. D. (1994). The use of audit committees for monitoring. *Journal of Accounting and Public Policy*, 13(2), 121-139.
- Mora, A., & Walker, M. (2014). The Implications of Research on Accounting Conservatism for Accounting Standard Setting. *Inaugural IASB Research Forum – Accounting and Business Research* (p. 8). Oxford: Saïd Business School.
- NACD (2000). Report of the NACD Blue Ribbon Commission on Audit Committees: A practical guide. Washington, DC: National Association of Corporate Directors.
- Penman, S. H., & Zhang, X. J. (2002). Accounting conservatism, the quality of earnings, and stock returns. *The accounting review*, 77(2), 237-264.
- Qiang, X. (2007). The effects of contracting, litigation, regulation, and tax costs on conditional and unconditional conservatism: cross-sectional evidence at the firm level. *The Accounting Review*, 82(3), 759-796.
- Roychowdhury, S., & Watts, R. L. (2007). Asymmetric timeliness of earnings, market-to-book and conservatism in financial reporting. *Journal of Accounting and Economics*, 44(1), 2-31.
- Ruch, G. W., & Taylor, G. (2015). Accounting conservatism: A review of the literature. *Journal of Accounting Literature*, 34, 17-38.
- Sarbanes-Oxley Act of 2002 (SOX). 2002. Public L. no. 107-204, section 2
- Seetharaman, A., Gul, F. A., & Lynn, S. G. (2002). Litigation risk and audit fees: Evidence from UK firms cross-listed on US markets. *Journal of accounting and economics*, 33(1), 91-115.
- Shivdasani, A. (1993). Board composition, ownership structure, and hostile takeovers. *Journal of accounting and economics*, 16(1), 167-198.
- Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The journal of finance*, 52(2), 737-783. debt costs. *The Accounting Review*, 77(4), 867-890.

- Spira, L. F. (1999). Ceremonies of governance: perspectives on the role of the audit committee. *Journal of Management and Governance*, 3(3), 231-260.
- Watts, R. L., & Zimmerman, J. L. (1978). Towards a positive theory of the determination of accounting standards. *Accounting review*, 112-134.
- Watts, R. L. (2003a). Conservatism in accounting part I: Explanations and implications. *Accounting horizons*, 17(3), 207-221.
- Watts, R. L. (2003b). Conservatism in accounting part II: Evidence and research opportunities. *Accounting horizons*, 17(4), 287-301.
- Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of financial economics*, 40(2), 185-211.
- Zhang, Y., Zhou, J., & Zhou, N. (2007). Audit committee quality, auditor independence, and internal control weaknesses. *Journal of accounting and public policy*, 26(3), 300-327.
- Zhong, K., Gribbin, D. W., & Zheng, X. (2007). The effect of monitoring by outside blockholders on earnings management. *Quarterly Journal of Business and Economics*, 37-60.

Appendices

Appendix A – Libby boxes

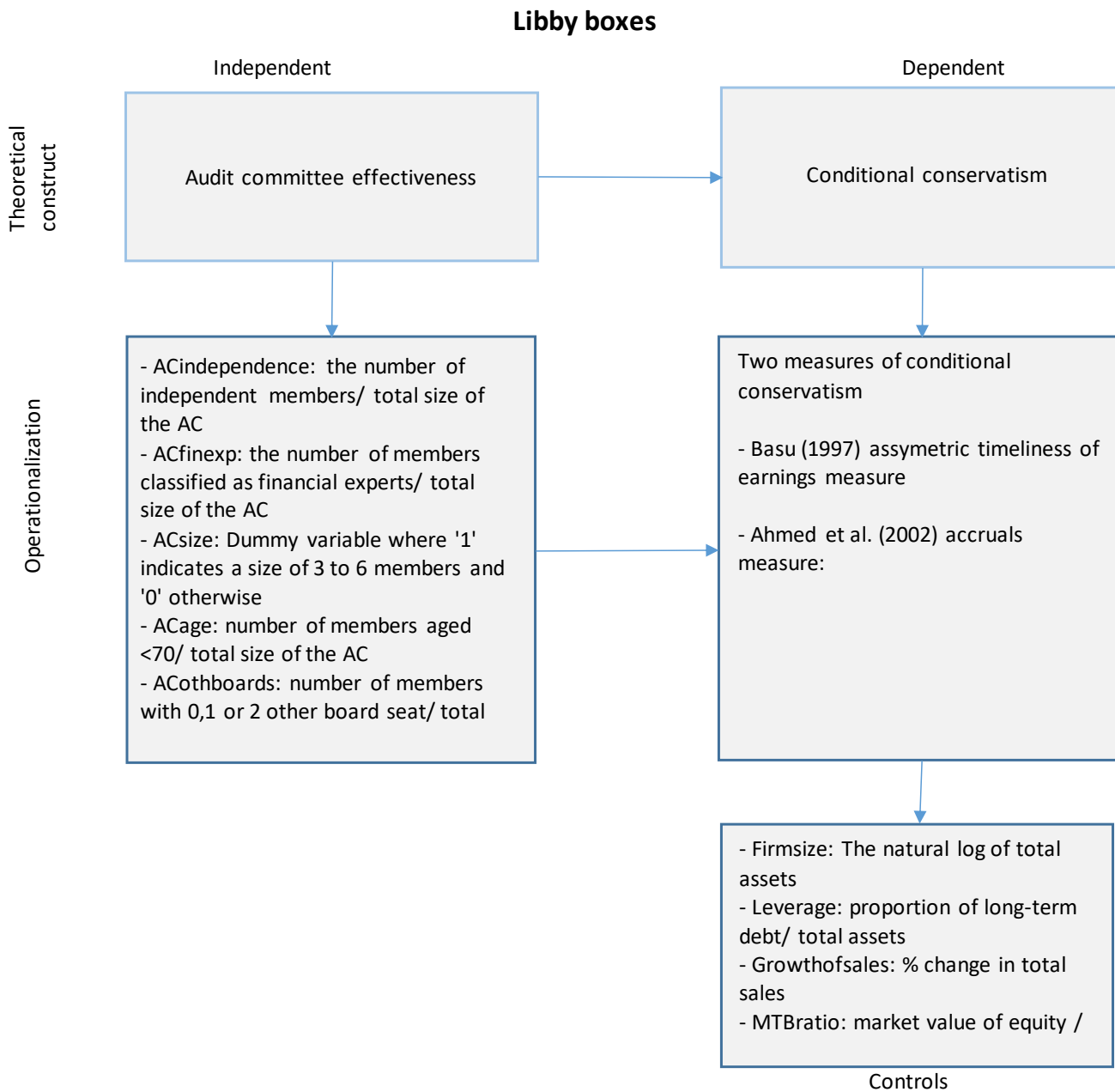


Figure 2 Libby Boxes. Both theoretical constructs are described in chapter 2. The operationalization of the variables is described in chapter 4.

Appendix B – Data cleaning procedure tables

Table B.1: ISS audit committee characteristics file

	Source:	Excelfile ISS audit committee characteristics
Description of step		Number of observations
# of starting observations raw file		125.735
Dropping SPIndex if not S&P 500		77.721
Dropping board members if not Acmembers		29.419
Dropping observations to get year-company data		14.133
Final number of observations:		4.462

Figure 3: Data cleaning ISS file

Table B.2: Compustat monthly returns file

	Source:	Excelfile Compustat returns Basu measure 2008-2016
Description of step		Number of observations
# of starting observations raw file		67.134
Dropping observations missing for closing price		1.143
Dropping firm-year observations with fiscal year not ending in december		16.393
Dropping firm-month observations other than 31-12		45.493
Dropping firm-month observations 31-13-16		440
Final number of observations:		3.665

Figure 4 Data cleaning Compustat monthly returns file

Table B.3: Compustat annual file

	Source:	Excelfile Compustat data
Description of step		Number of observations
# of starting observations raw file		6.305
Dropping financial institutions (SIC 6000-6900)		1.894
Dropping current fiscal year end not ending in december		1.293
Dropping if LogTA is missing		404
Dropping observations if MTB ratio is missing		83
Dropping if leverage is missing		11
Dropping if Salesgrowth is missing		9
Final number of observations:		2.611

Figure 5 Data cleaning Compustat annual file

Table B.4: Basic merged STATA file

Source:	Merged file
Description of step	Number of observations
# of starting observations	4.462
Dropping due to merging with Compustat data file	2.377
Dropping due to merging with Basureturn file	8
Winsorizing MTBratio at 3 times the standard deviation from the mean (-111.5<>118.9)	13
Winsorizing Leverage at 3 times the standard deviation from the mean (-0.196<>0.456)	17
Winsorizing Salesgrowth at 3 times the standard deviation from the mean (-13.585<>114.015)	11
Winsorizing LogTA at 3 times the standard deviation from the mean (6,5<>12,7)	39
Dropping if less than 4 year observations	145
Dropping if DataYear=2008	204
Final number of observations:	1.648
Final number of firms:	258

Figure 6 Data cleaning merged STATA file