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Corporate Governance as an Explanation for Accounting Conservatism

Evidence from the US Market

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Executive Summary

This thesis aims to contribute to existing literature by examining whether corporate governance can be seen as an explanation for accounting conservatism. Therefore, this thesis aims to answer the following research question: “*Does a more effective corporate governance structure lead to more conservative financial reporting?*”. In existing literature there are two contradicting perspectives on the relation between accounting conservatism and corporate governance: the substitutive and complementary perspective. Since there is little empirical evidence on which of these competing perspectives holds, this stresses the importance of answering the research question. In order to discriminate among aforementioned perspectives, this thesis contributes to existing literature by taking corporate governance effectiveness as a whole, internal corporate governance effectiveness, and external corporate governance effectiveness into account. These are all measured using corporate governance indices following Gompers et al.’s (2003) approach in an US setting and in a period ranging from 2007 up to and including 2015. In order to test the level of accounting conservatism, the Basu model is used taking criticism by academics into account. The results of this thesis provide evidence that accounting conservatism occurs. Next to that, an increasing pattern in corporate governance effectiveness can be identified. With regard to the relation between corporate governance effectiveness and accounting conservatism, the results indicate that these are significant and positively related. With regard to internal and external corporate governance effectiveness, this thesis provides evidence that both are also individually significant and positively related to the level of accounting conservatism.

Keywords: Corporate Governance; Internal; External; Conditional Accounting Conservatism; Basu; Complementary Perspective; Substitutive Perspective.

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1. Introduction

1.1 General Introduction

Accounting Conservatism¹ is a controversial subject in both policy-making and academic literature. Both the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) believe accounting conservatism is an undesirable characteristic of accounting information. Both emphasize that neutrality in accounting numbers is preferable so there is no bias in company's financial statements (Mora & Walker, 2015). However, some policy-makers have argued for a greater emphasis on accounting conservatism referring to the recent financial crisis (Mora & Walker, 2015). In academic literature the same conflicting opinions about accounting conservatism are noticed. Advocates of the value relevance approach tend to favour neutrality in financial reporting, whilst advocates of the contracting efficiency approach argue in favour of accounting conservatism (Mora & Walker, 2015).

But what are the reasons for the accounting conservatism? Watts (2003a) provides an overview of several possible reasons for this phenomenon. Traditional explanations for accounting conservatism are contracting and shareholder litigation. However, they also mention taxation and accounting regulation as explanations for accounting conservatism (Watts, 2003a). Another explanation brought up by prior literature is corporate governance² effectiveness. Since the introduction of the Sarbanes-Oxley Act (SOX) in 2002, corporate governance effectiveness became more important for investors and regulators, and academics argue that corporate governance effectiveness could be another explanation for accounting conservatism (Beekes et al. 2004; LaFond and Watts 2008; Garcia Lara et al. 2009a).

1.2 Research Question and Motivation

The purpose of this thesis is to examine the relation between corporate governance and accounting conservatism. More specifically, this thesis investigates whether corporate governance holds as

¹ Accounting conservatism's traditional definition is the adage "anticipate no profit, but anticipate all losses" (Bliss, 1924). Empirically, the adage is interpreted as representing "the accountant's tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses" (Basu, 1997). The degree of conservatism allows for the following interpretation: the greater the difference in degree of verification, the higher the degree of conservative financial reporting (Watts, 2003a).

² Corporate governance can be defined as the set of mechanisms in place to make sure that the firm's assets are used efficiently, guaranteeing the capital investors a return on their investment and thus preventing inappropriate use of the company's assets to managers at the expense of the stakeholders (Schleifer & Vishny, 1997).

another explanation for accounting conservatism and attempts to find an answer to the following research question:

RQ: Does a more effective corporate governance structure lead to more conservative financial reporting?

Providing an answer to this research question is important because prior research in this field does not provide a clear answer on what drives conservatism. Traditional explanations for accounting conservatism are contracting and shareholder litigation (Watts, 2003a). However, Chi et al. (2009) argue that corporate governance could be another explanation for accounting conservatism. They argue that with the introduction of the Sarbanes-Oxley Act, which was introduced in the United States (US) in 2002 and provide corporate governance codes to restore the decline in trust by shareholders and stakeholders due to major financial scandals (e.g. Enron), these regulatory reformations influenced the level of accounting conservatism in American entities.

However, no clear answer is provided on how corporate governance influences accounting conservatism. There are two competing perspectives about the possible relation. On the one hand, the demand for conservative financial reporting would be greater when more agency problems occur, and therefore a weaker governance structure will lead to more conservative financial reporting (Ahmed and Duellman, 2007). An alternative view is that an adequate corporate governance structure will lead to better monitoring of management and hence will increase the implementation of conservative financial reporting (Lobo and Zhou, 2006). Since there is little empirical evidence on which of these competing perspectives holds, this stresses the importance answering the research question.

The results of this thesis should be of relevance to regulators and standard-setters since they criticize conservatism's asymmetric treatment of gains and losses. This asymmetric treatment could lead to a persistent understatement of net asset values in the current period which could lead to an overstatement of earnings in future periods by causing an understatement of future expenses (Chi et al., 2009). Also, the results of this thesis could be beneficial for regulators and standard-setters in providing evidence for a relation between corporate governance and accounting conservatism. Based on the results they could possibly provide additional regulations for corporate governance mechanisms in the United States.

Next to that, the results could also be beneficial for equity shareholders who want to identify which entity's elements lead to more conservative financial reporting especially under the current economic conditions. Other stakeholders could also benefit from this thesis' results because it could provide an additional tool to verify the reliability of the information presented in financial statements.

1.3 Key Related Literature and Contribution

Prior research on this topic provides two different perspectives on a possible relation between corporate governance and accounting conservatism. First, Ahmed and Duellman (2007) provide evidence that accounting conservatism assists directors in reducing an entity's agency costs. Complementary to their findings, LaFond and Roychowdhury (2008) argue that conservatism declines with managerial ownership and that lower managerial ownership leads to more severe agency problems. Next to these findings, LaFond and Watts (2008) argue that accounting conservatism is positively related to information asymmetry and that conservative financial reporting is used as a tool to reduce uncertainty and information asymmetry. All these findings combined it is expected that a less effective corporate governance structure will result in a higher demand for conservative financial reporting (substitutive perspective).

Second, Garcia Lara et al. (2009a) provide evidence that firms with a more effective corporate governance structure appear to use discretionary accruals to provide bad news in a timelier manner to their investors. They argue that corporate governance provisions play an important role in the degree of conservative financial reporting, which provides early information to corporate governance bodies to facilitate early investigation into the reasons for bad news. Complementary, Beekes et al. (2004) find that firms with a higher degree of outside directors on the board, an indicator for a more effective corporate governance structure, recognize bad earnings news on a timelier basis. Ho (2009) argues that a high proportion of inside directors will lead to an opportunity to use aggressive financial reporting and will reduce the level of accounting conservatism. These findings combined, it is expected that effective corporate governance results in better monitoring of management, and hence it is expected that effective corporate governance structures will increase the degree of accounting conservatism (complementary perspective).

Corporate governance can be divided into two parts: internal corporate governance and external corporate governance. Almost all prior research on this topic focus on the internal part of corporate

governance and how this is related to accounting conservatism. Board of directors characteristics are commonly used to operationalize (internal) corporate governance in existing academic literature. Garcia Lara et al. (2009b) differentiate their selves by taking external corporate governance into account. They do believe that effective corporate governance hinges vitally on the coordination between internal and external corporate governance. Since this study uses a sample ranging from 1992 until 2003, and that with the implementation of SOX corporate governance structures are radically changed, the findings of this study are outdated. Therefore, it is interesting how (external) corporate governance and conservative financial reporting are related after the introduction of SOX in 2002.

This thesis aims to contribute to existing literature in this field by examining whether corporate governance can be seen as an explanation for accounting conservatism. Next to that, this thesis aims to contribute in investigating how an effective corporate governance structure is related to accounting conservatism. In particular, to discriminate among two earlier mentioned perspectives of a possible relation between corporate governance and accounting conservatism. The main contribution to prior research is that external corporate governance is taken into account in a recent setting since there is no recent study that takes the external part of corporate governance into account in a timeframe after the implementation of SOX in 2002. Another important contribution of this thesis is that control variables for earnings management and the abandonment option are included. In existing literature both are seen as phenomena that could explain the phenomenon that accounting conservatism is accounted for.

Overall, this research has three main objectives. First, this research aims to provide an overview of prior research on the relation between corporate governance and accounting conservatism, specifically the two contradicting perspectives on this relation. Second, this research investigates the relation between corporate governance, both internal and external corporate governance, and accounting conservatism in a more recent setting where this relation is investigated after the implementation of SOX in 2002. Third, this research aims to determine whether there are areas that need to be investigated in future research.

1.4 Research Method

To measure the level accounting conservatism, the Basu model (1997) is used. Although many academics criticize this model, for instance that the Basu model shows different econometric

deficiencies (Dietrich et al. 2007), this model is often used in prior research on accounting conservatism. Because this model is often used in prior research, the results in this thesis can be compared to prior research's findings. Besides that, Wang et al. (2009) argue that the Basu model is useful in studies that compared large samples in a cross sectional analyses. The Basu model regresses earnings on returns and allows the return coefficient to vary with the sign of the return. To investigate the relation between corporate governance and accounting conservatism, several indices for corporate governance effectiveness are used. To operationalize internal corporate governance, six proxies containing information about a company's board of directors are used to form an index following Gompers et al.'s (2003) procedures. For the external part of corporate governance, an anti-takeover protection index is formed following the same procedures. To investigate the total impact of both internal and external corporate governance both indices are included into one "total" corporate governance effectiveness index.

Control variables in the regression analyses include factors that are correlated with accounting conservatism, corporate governance, or both. Based on prior research, important factors that should likely to be included in the regression formula are: firm size, leverage, growth and a dummy variable which indicates whether a firm is audited by a Big4 firm or not. Additionally, variables for earnings management and the abandonment option are included to make sure these phenomena do not bias my results. Next to that, control variables for industry and fiscal year effects are implemented in the regression analyses.

Data are available through the university subscribed databases within the Wharton Research Data Services which provides an opportunity to select US companies. Since data regarding corporate governance is available starting 2007, and therefore the first year after the implementation of SOX, the sample period starts in 2007. 2015 is the last year implemented in this sample since not all data is available for 2016 yet. The COMPUSTAT database provides company-year level accounting data for the US companies (e.g. to determine control variables). The CRSP database is useful to acquire specific share prices, returns and earnings necessary for the determinants of the Basu model. The ISS database is used to gain information about a company's directors and corporate governance, and enables to produce the corporate governance indices. The intersection of these databases, after performing additional data requirements, consists of 6,611 observations for the period 2007-2015, corresponding to 1,338 unique companies.

1.5 Main findings

With regard to corporate governance effectiveness, the results show an increasing pattern in the mean of total and internal corporate governance scores in the period 2007-2011, and constant after these years. Overall, a constant pattern in external corporate governance effectiveness is visible over the period tested in the analysis. The results also show that the level of conservatism differs significantly per fiscal year, however, there is no significant pattern visible since the level of conservative financial reporting goes up and down over the period. The results with regard to total and internal corporate governance effectiveness are in line with the expectation that corporate governance effectiveness increased since the implementation of SOX.

In order to test the direct relation between accounting conservatism and corporate governance effectiveness, several OLS regressions are performed using two models including total corporate governance indices, and internal and external corporate governance indices respectively. For both models significant results show up, indicating that accounting conservatism occurs in the sample. Also, there are significant results that indicate that a higher score for (total) corporate governance, and thus a more effective corporate governance structure, is positively related to the level of accounting conservatism. These results are in line with the complementary perspective discussed in prior research that predict that effective corporate governance results in better monitoring of management and, therefore, increases the level of accounting conservatism. Also, statistical evidence is found that both internal and external corporate governance effectiveness, individually, are positively related to the level of conservative financial reporting.

1.6 Structure

The remainder of my thesis has the following structure: In chapter 2 theoretical background on this topic is provided, including a definition of corporate governance and accounting conservatism. This is followed by a literature review where prior research is described and evaluated. Also, in chapter 3 the hypotheses are developed. Chapter 4 contains a data and methodology description. In this chapter is described how the corporate governance indices are formed and the models for hypotheses testing are provided. In chapter 5 the results for the hypotheses testing are provided, containing a univariate analysis, multivariate analysis and some additional analysis. In the last chapter the conclusions regarding my thesis are presented. In addition, the limitations of this thesis are described and suggestions for further scientific research are presented.

2. Background

2.1 Introduction

In this chapter, the concepts “accounting conservatism” and “corporate governance” are explained. First, a definition of accounting conservatism is given and the difference between conditional and unconditional conservatism is explained. Second, existing explanations for the phenomenon accounting conservatism are described, followed by non-conservatism explanations that can possibly cause the same effect as accounting conservatism. In the fifth paragraph, corporate governance is defined and how this concept can be divided into two parts. This is followed by a brief explanation of the impact of SOX on corporate governance structures. At the end of this chapter, a brief summary is provided to give an overview of most important concepts in this chapter.

2.2 Accounting Conservatism defined

A traditional definition for accounting conservatism is the adage “anticipate no profit, but anticipate all losses” (Bliss, 1924). Anticipating profits can be explained as the recognition of profits before there is a legal claim to the revenues generating them and before profits are verifiable. This does not mean that all revenue cash flows should be received before profits can be recognized but those should be verifiable. Aforementioned adage is interpreted as representing “the auditor’s tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses” (Basu, 1997). In other words: accounting conservatism is the asymmetry in requirements for gains and for losses. This allows for the interpretation that a greater difference in verification between gains and losses leads to a higher degree of accounting conservatism (Watts, 2003a). In this thesis, the terms “accounting conservatism” and “conservative financial reporting” are used interchangeably.

Accounting conservatism can be divided into two parts: conditional conservatism and unconditional conservatism. Conditional conservatism can be defined as ex post conservatism or news dependent conservatism. More specifically, this means that a company does not write up book values under favorable circumstances, but they do write down their book values under unfavorable circumstances (Beaver and Ryan, 2005). Conditional conservatism stresses the timeliness of loss recognition. In other words, the reduction in accounting earnings reflects a contemporaneous economic loss (Xu & Lu, 2008). On the other hand, unconditional conservatism

can be defined as ex ante conservatism or news independent conservatism. According to Beaver and Ryan (2005), this means that the accounting process determined at time of inception of a company's assets and liabilities yield expected unrecorded goodwill. Xu and Lu (2008) add to this definition that unconditional conservatism can be seen as a financial reporting bias toward reporting low book values of stockholder equity. This bias delays revenue recognition by one period or subtracts a constant from earnings every period independently of current economic gains and losses (Xu & Lu, 2008). Penman and Zhang (2002) argue that unconditional conservatism mainly focuses on the balance sheet statement, while conditional conservatism mainly focuses on the profit and loss statement. Several academics (e.g., Ball and Shivakumar, 2005; Pope and Walker, 1999; Beaver and Ryan, 2005) argue that conditional conservatism is more preferable in research than unconditional conservatism. In this thesis, we define accounting conservatism to be conditional conservatism based on Basu's (1997) treatment.

According to Basu (1997), accounting conservatism has influenced the accounting practice for at least five hundred years. Next to that, Sterling (1970) argues that accounting conservatism is the most influential principle of valuation in accounting. Academics, standard-setters, and regulators criticize the existence of accounting conservatism since the asymmetric treatment of gains and losses leads to a persistent understatement of net asset values. Current period's understatement of net asset values can also lead to overstatement of earnings in future periods by causing an understatement of future expenses (Watts, 2003a). Both the IASB and the FASB believe accounting conservatism is undesirable. Both emphasize that neutrality in accounting numbers is preferable so there is no bias in company's financial statements (Mora & Walker, 2015). However, some policy-makers have argued for a greater emphasis on accounting conservatism referring to the recent financial crisis (Mora & Walker, 2015). Prior empirical research show that firms with more accounting conservatism experience less negative financial crisis period stock returns (Watts and Zuo, 2012). Watts and Zuo (2012) provide also evidence that conservative financial reporting improves borrowing capacity, reduces underinvestment, that it constrains managerial opportunism, and that it enhances firm value. These results feed critics who argue for a greater emphasis on accounting conservatism. Whether accounting conservatism is desirable or not is still open for debate. However, from a financial reporting perspective, the FASB and IASB have a valid point that neutrality in accounting numbers is preferable and, therefore, accounting conservatism is undesirable.

2.3 Explanations for Accounting Conservatism

This thesis aims to contribute by finding evidence that corporate governance can be seen as another explanation for conservative financial reporting. In prior research, academics bring up four main explanations for accounting conservatism: contracting explanation, shareholder litigation explanation, taxation explanation and a regulatory explanation.

Contracting Explanation

The contracting explanation for conservative financial reporting is an early source of conservatism and is intensively investigated. The separation of ownership and control between shareholders on the one hand, and management on the other hand, causes agency costs³ due to information asymmetry, asymmetric payoffs, limited horizons, and limited liability (Jensen and Meckling, 1976). In order to reduce agency costs, shareholders contract with management using financial accounting. The usefulness of financial accounting increases if it exhibits certain characteristics such as timeliness. Asymmetric timeliness is also beneficial for shareholders in order to help them monitoring management more efficiently and to motivate management to strive for maximization of firm value (Jensen and Meckling, 1976). If shareholders do not create appropriate incentives for the management, CEOs will act in favour of their own payoff functions instead of striving for maximization of firm value.

Conservatism is useful in order to align the interest of management and shareholders, and eventually, in order to reduce agency costs (Blunck, 2007). Conservative financial reporting counteracts the management's tendency to bias equity book value and earnings upward, by biasing the numbers downward, and thereby reducing the expected losses for investors who have asymmetric loss functions. Consequently, accounting conservatism improves contracting efficiency (Watts, 2003a). Conservative financial reporting may also benefit debt holders since their payoff functions are asymmetric with respect to the company's performance. Qiang (2007) argues that contracting is expected to encourage conditional conservatism only.

³ **Agency Theory:** The agency theory describes an information asymmetry in the principal-agent relation. Due to this information asymmetry, one of both parties, agents (management) or principals (shareholders or other stakeholders). Agents might act in favor of their own benefits instead of acting in the best interest of their principals (Blunck, 2007). Agency costs arise when agents and principals maximize their own welfare instead of firm value. Agency costs include costs incurred to align both parties' incentives to firm value maximization and the negative firm value caused by the remaining lack of alignment (Watts, 2003a).

Shareholder Litigation Explanation

The shareholder litigation explanation claims that a firm is less likely to be sued by shareholders if they understate their earnings and net assets. According to Blunck (2007), current shareholders are more likely to sue the company when they feel that the company has overstated their current financial position rather than when the company has understated their assets or has deferred their earnings. Therefore, management and auditors have incentives to use more conservative financial reporting for earnings and net assets (Watts, 2003a). Both conditional and unconditional conservative financial reporting cause an understatement of earnings and book values, which reduces the likelihood of shareholder litigation (Beaver, 1993). Prior research provides evidence that (conditional) conservatism varies through time as the litigation environment changes and across countries according to a country's system of law (Basu, 1997; Ball et al., 2000). Ball et al. (2000) provide evidence that in countries with a higher likelihood of shareholder litigation, there is more conservative financial reporting. The shareholder litigation explanation is related to both conditional and unconditional conservatism (Qiang, 2007).

Taxation Explanation

The taxation explanation for accounting conservatism comprises that companies reduce their financial earnings in order to lower their taxable income and eventually their taxes (Blunck, 2007). Only companies with a high degree of book-tax conformity allow for reducing their financial earnings to lower their taxes. The taxation explanation predicts that companies with a high correlation between book and tax earnings are more likely to enhance accounting conservatism to reduce their tax obligations (Blunck, 2007). Watts (2003a) argues that as long as a firm is profitable, has taxable income and there is a positive interest rate, the correlation between reported income and taxable income provides a company an incentive to defer their income in order to reduce the present value of their taxes. In line with contracting, this incentive results in an understatement of a company's net assets. Qiang (2007) concludes that the taxation explanation is only related to unconditional conservative reporting.

Regulatory Explanation

Accounting conservatism's fourth explanation, the regulation explanation, comprises that accounting regulation requires companies to be conservative in their financial reporting. Ball et al.

(2000) provide evidence that conservative financial reporting is associated with governmental regulation. Watts (1977) argues that losses from overvalued assets and an overstatement in a company's income are more observable and, therefore, more useful in a political trial than gains from undervalued assets and an understatement in a company's income. This explains regulators' incentives for conservative financial reporting (Watts, 1977). Qiang (2007) concludes that the regulation explanation is only associated with unconditional conservatism.

2.4 Non-Conservatism Explanations

Some of the evidence that proves the existence of accounting conservatism can also be explained by other phenomena. Another explanation for the net asset understatement observed in empirical literature is the abandonment option (Hayn, 1995). Earnings management can also account for some of the evidence resulting from managers to maximize their own payoff functions at the expense of other parties to the firm (Hanna, 2002).

Abandonment Option

An abandonment option is a clause in a contract that permits either party to leave without having to fulfil obligations. This option is included explicitly as part of a contract's terms and is an attractive feature for participants because it protects each's financial interest in an event that an investment fails to generate the intended returns (Hayn, 1995). Similar to Basu (1997), Hayn (1995) predicts an asymmetric relation between stock returns and earnings, but focuses on the earnings coefficient in a regression analyses of returns on earnings. Exercising the abandonment option produces, like accounting conservatism, losses that are more transitory than profits, resulting the coefficient of earnings to be expected larger for profits than for losses. However, Hayn (1995) reasons that the losses are transitory due to the management's will to not further lose money. Instead, they exercise the abandonment option by liquidating the company's operations that lose money. Losses caused by unprofitable operations will, in opposite of profitable operations, cease (Watts, 2003b).

The major problem with the abandonment option as a general explanation for evidence regarding conservatism is its inability to explain the systematic understatement of net assets (Watts, 2003b). When there is an unbiased market-to-market, the asymmetry in earnings and returns will disappear and no understatement in net assets will be noticed (Hayn, 1995). In a situation where there is

neutral historical cost accounting and no conservatism, the abandonment option can be seen as an explanation for unrealized losses and asymmetry in the recognition of unrealized gains and losses, as well for the understatement of net assets (Hayn, 1995). However, many losses in net assets do not result in exercising the abandonment option. Also, to the extent that assets are general and not firm-specific, losses in net assets increase a company's net present value of investment and, therefore, abandonment is less likely to occur (Watts, 2003b). Important to note is that there is also an expansion option that at least partially offsets the abandonment option to be exercised. A priori it seems unlikely that the abandonment option can be seen as another explanation for the significant understatement of net assets in empirical literature (Watts, 2003b).

Earnings Management

Another explanation for Basu's (1997) findings is brought up by Hanna (2002), arguing that these are due to active management of earnings by executives. Hanna (2002) argues that big bath charges, creative acquisition accounting, and miscellaneous cookie jar "reserves" are causing understatement of net assets. All these financial reporting problems were caused by inappropriate write-downs of assets or increased liabilities by management in order to inflate future earnings (Levitt, 1998). Hanna (2002) assumes that these actions are motivated by management's incentives to increase their own compensation and to mislead the stock market.

At first sight, Hanna (2002) seems to bring up valid points and earnings management seems to fit the conservative financial reporting evidence. For instance, earnings management establishes the reserve resulting in an understatement of net assets (Hanna, 2002). Second, initial losses prove to be transitory when earnings are managed by using the reserve (Watts, 2003b). Third, a negative stock return justifies write-offs, potentially providing an asymmetric relation between earnings and stock returns (Watts, 2003b). Even though earnings management commonly occurs, it cannot be a general explanation for the systematic long-term understatement of net assets by itself. Management makes the assumption that earnings manipulation fools the stock market, increases the firm value, and ultimately increases their own compensation. However, if the market is efficient and sees through the manipulation, then earnings management-motivated write-offs cannot generate negative stock returns themselves (Watts, 2003b). The earnings management explanation also suggest that many companies must have large negative returns every year, not due to earnings management, to allow for write-offs to generate negative accruals continuously

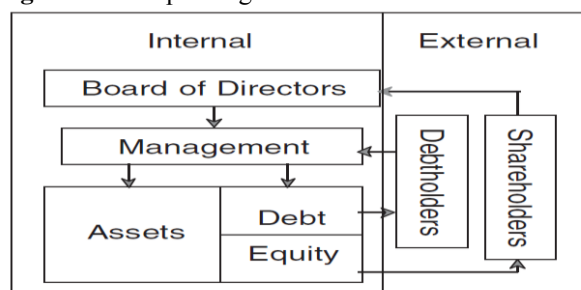
every year (Givoly and Hayn, 2000). This scenario seems to be very unlikely to be consistent with accounting conservatism evidence, especially taking into account that earnings management suggest positive accruals in years where big-baths or write-offs are not considered (Givoly and Hayn, 2000).

Watts (2003b) argues that, like the abandonment option, earnings management is plausible and not mutually exclusive to the accounting conservatism explanation, such that all those mechanism may occur at the same time. However, based on prior research (e.g., Hayn, 1995; Hanna, 2002), earnings management and the abandonment option are not individually or jointly consistent with the overall pattern of evidence on conservative financial reporting. Earnings management, as well as the abandonment option, neither individually nor jointly can explain the systematic understatement of a firm’s net assets (Watts, 2003b). To conclude, conservatism seems to be a much better explanation. To rule out the possibility that earnings management and/or the abandonment option influence the evidence for accounting conservatism, control variables are included for those phenomena.

2.5 Corporate Governance defined

In existing academic literature there are multiple definitions for corporate governance. Schleifer and Vishny (1997) describe corporate governance as the mechanisms in which suppliers of finance assure their selves of receiving a return on their investments. In a broader perspective, Gillan and Starks (1998) define corporate governance as system of laws, rules, and factors applicable for controlling a company’s operations. Despite there are different definitions for corporate governance, academics view corporate governance mechanisms as falling into two parts: internal and external corporate governance (Gillan, 2006). The simple balance sheet model (see figure 2.1) captures the essence of the relationship between internal and external corporate governance (Ross et al., 2005). The left-hand side of this model comprises the basics of internal corporate governance mechanisms. The management can be seen as shareholders’ agents and is charged with decision-making in which assets to invest and how this financed.

Figure 2.1: Corporate governance’s balance sheet model



This model captures the essence of the relationship between internal and external corporate governance (Ross et al., 2005).

The board of directors, at the apex of internal control mechanisms, is charged with hiring, firing, compensating, monitoring and advising management in order to make sure they act in the interest of their shareholders (Jensen, 1993). The right-hand side of this model comprises the elements of external corporate governance arising from company's need to raise capital. Further, this model highlights that there is a separation between capital providers and those who manage the capital. This separation creates the demand for corporate governance structures due to information asymmetry between the management and capital investors (Jensen, 1993). The model also captures the relation between shareholders and the board of directors. Shareholders elect board members and the boards owe a fiduciary obligation to shareholders (Ross et al., 2005).

Internal Corporate Governance

Internal corporate governance mechanisms concern the interaction between or among the company's insiders (e.g., management, directors, or employees). Gillan (2006) divides internal corporate governance into five basic categories: 1) The Board of Directors, 2) Managerial incentives, 3) Capital structure, 4) Bylaw and Charter provisions, and 5) Internal control systems. Denis and McConnell (2003) argue that the board of directors are most important for an effective corporate governance structure due to its controlling function. Therefore, the focus in this thesis is on the board of directors to investigate (internal) corporate governance. Besides the preparation of the compensation schemes for management, the board is also responsible to interrupt management when they do not take the interest of their shareholders into account (Gillan, 2006). The board of directors' most important task is to balance the interests of both insiders and outsiders.

To consider internal corporate governance empirically, there are several board of directors' characteristics used in prior research to measure the effectiveness of (internal) corporate governance. Traditionally, board size and the independence of the board of directors play a central role in existing academic research (e.g., Yermack, 1996). Another way to examine the effectiveness of the internal corporate governance is board activity, board composition, board structure or the role of the CEO (e.g., CEO duality or CEO experience).

External Corporate Governance

The external corporate governance mechanisms facilitate or discourage active shareholder participation in the governance/management processes. External corporate governance defines direct shareholder oversight and, thus, encompasses the corporate control market (Baber et al.,

2012). Gillan (2006) argues that the market for corporate control can be seen as the ultimate corporate governance mechanism. As management competes in their markets, companies go to the highest value use and, therefore, inefficient management will be disciplined (Baber et al., 2012). Observable indicators of external corporate governance systems concern statutory restrictions imposed by state regulation and contractual provisions established in the firm's corporate charter or bylaws (Gompers et al., 2003). If these restrictions and provisions are structured in a way that the costs for shareholders to participate are relatively high, then external corporate governance mechanisms are ineffective. If costs for shareholder participation are low, then external corporate governance mechanisms will be effective since the threat of shareholder intervention will discipline both management and existing board members (Baber et al., 2012).

Denis and McConnell (2003) argue that the effectiveness of a corporate governance structure hinges vitally on the coordination between internal and external corporate governance. The market for corporate control acts as the most important external corporate governance device, while the board of directors the most salient internal corporate governance mechanism is. Despite several academics (e.g., Gillan, 2006) argue that the market for corporate control is the most efficient corporate governance mechanism, recent research provides evidence that external and internal corporate governance mechanisms complement each other, and that both mechanisms are necessary to provide an effective corporate governance structure (Baber et al., 2012).

2.6 Implementation of the Sarbanes-Oxley Act

The Implementation of the Sarbanes-Oxley Act came after a series of corporate scandals in the United States between 2001 and 2002. Those corporate scandals involved accounting irregularities and share price manipulations, resulting in a decline in share- and stakeholder trust. The most notorious of these corporate scandals should be Enron. In 2001, Enron filed restated financial results with the Securities and Exchange Commission (SEC) after SEC's investigation which revealed several accounting irregularities and that Enron was more heavily indebted than its earlier financial statements indicated (Chhaochharia and Grinstein, 2005). After the revelation of Enron, the SEC found more accounting irregularities and corporate misconduct in a number of companies, including Worldcom and Tyco.

In order to restore the stake- and shareholders' trust, the US Senate decided to implement SOX followed by various amendments to stock exchange regulations. SOX's rules include several

provisions to ensure alignment between incentives of insiders with those of outsiders. Next to that, these provisions aim to reduce the likelihood of corporate misconduct and fraud (Zhang, 2007). For instance, SOX imposes higher fines for officers who are charged with forging documents, it requires independence of an audit committee, procedural evaluations of corporate's internal control mechanisms, increased oversight over audit firms, and more timely disclosure of equity transactions by corporate insiders (Chhaochharia and Grinstein, 2005). Proponents of the implementation of SOX argue that these provisions are needed because aforementioned corporate scandals indicate that current monitoring mechanisms in US corporations should be improved (Zhang, 2007). The act has eleven sections, including new requirements on accounting firms, financial analysts, management and corporate directors. The main provisions included in SOX are (Chhaochharia and Grinstein, 2005):

1. Establishment of the Public Corporation Accounting Oversight Board which is charged with registering public accounting firms, establishment of standards to prepare audit reports, and overseeing public accounting firms.
2. Further restrictions for public accounting firms, including mandatory audit firm partner rotation every five years and that accounting firms cannot provide any non-auditing services contemporaneously with auditing services.
3. Increased penalties for corporate fraud and accounting irregularities.
4. Enhanced financial disclosure and internal controls.
5. Corporate responsibility: independence of audit committees and executive certification of financial reporting.

The implementation of SOX changed corporate governance radically since it is applied to more rules and oversight. Most participants in US corporations were impacted by the additional rules. Chhaochharia and Grinstein (2005) find that board size and board independence increased since the implementation of SOX. Since the introduction of SOX in 2002, corporate governance effectiveness became more important for investors and regulators, and academics argue that corporate governance effectiveness could be another explanation for accounting conservatism (Beekes et al. 2004; LaFond and Watts 2008; Garcia Lara et al. 2009a). Therefore, it is interesting how corporate governance and conservative financial reporting are related after the introduction of SOX.

2.7 Summary

This chapter provided a background overview about accounting conservatism and corporate governance. Accounting conservatism can be defined as the asymmetry in requirements for gains and losses. Accounting conservatism can be divided into conditional and unconditional conservatism. However, in this thesis, accounting conservatism is defined to be conditional conservatism. Besides defining accounting conservatism, this chapter also provided an overview of explanations for accounting conservatism; contracting, shareholder litigation risk, taxation, and regulatory, respectively. Several academics argue that the phenomenon “accounting conservatism” seems to be explained by other non-conservatism explanations; the abandonment option, and earnings management, respectively. However, earnings management, as well as the abandonment option, neither individually nor jointly can explain the systematic understatement of a firm’s net assets (Watts, 2003b). Therefore, conservatism seems to be a much better explanation. This chapter also provided an overview about corporate governance, dividing this concept into an internal and external part. Corporate governance can be defined as a system of laws, rules, and factors applicable for controlling a company’s operations. The implementation of SOX is also brought up since corporate governance radically changed due to more rules and oversight.

3. Literature Review

3.1 Introduction

This chapter provides an overview of existing literature in this field. In paragraph 3.2, an overview is given about corporate governance characteristics and their development over time in order to measure the level of corporate governance effectiveness. In the third paragraph, two opposing perspectives about the relation between accounting conservatism and corporate governance are discussed. This paragraph also provides insights on how corporate governance characteristics and conservative financial reporting developed over time. These findings combining with existing literature about the two competing perspectives, result in the development of the hypotheses in this thesis. These hypotheses development is also provided in paragraph 3.3. At the end of this chapter, there is a brief summary to give an overview of most important concepts in this chapter.

3.2 Effectiveness of Corporate Governance

A corporate governance structure can be seen as more effective when it improves the accuracy and efficiency of its management monitoring process in order to make sure that the management acts in best interest of the shareholders (Gillan, 2006). Many academics view the board of directors as the lynchpin of an effective corporate governance structure. With a fiduciary obligation to their shareholders, and the responsibility to provide strategic direction and monitoring, the board of directors' role is key for an effective corporate governance structure (Gillan, 2006). Since the board of directors is viewed as the lynchpin of an effective corporate governance structure, many academics used board of directors' characteristics to measure corporate governance (Yermack, 1998; Gillan, 2006). Most commonly used board of directors' characteristics used to examine corporate governance are board size and the independence of the board (e.g., Yermack, 1998).

Other characteristics used in prior research are board activity, the board's structure and the activity and structure of its subcommittees (e.g., Klein, 2002). In addition, several academics examine the role of CEO duality, which implies that a CEO is also the chairman of the board of directors (e.g., Brickley et al., 1997). Others use CEO experience and the existence of financial expertise in the board of directors as measures for corporate governance. All aforementioned characteristics can be seen as part of the internal corporate governance structure. With regard to external corporate governance measures, there is one commonly used measure: the anti-takeover protection index. Indicating a company's vulnerability for hostile takeovers. This measure is also used by Garcia

Lara et al. (2009) in their study on the relation between (external) corporate governance and conservative financial reporting.

Recent empirical work focuses on the changes of the corporate governance structure over time and the changes in the post-SOX period. For instance, Chhaochharia and Grinstein (2005) provide evidence that companies' board size and the independence of the board have increased after the implementation of SOX. In addition, board actions and the existence of financial expertise are attracting more attention. Agrawal and Chadha (2005) find that the existence of financial expertise limits the likelihood of restatements in financial reporting. Similarly, Anderson et al. (2005) argue that the market attaches more credibility to earnings announcements and financial reporting when board of directors and audit committees are both independent and active. Combined these papers show that internal corporate governance structures have changed over time and, especially, since the implementation of SOX. But did these changes also impact the effectiveness of corporate governance structures?

Independence

An important aspect of corporate governance is the independence of the board of directors. More specifically, whether there is a majority of outside directors on the board of directors. This indicates that except from being a board member, outside directors have no ties to the company in which they have a place in the board of directors. When a company does have a higher percentage of outside directors in their board, their corporate governance structure improves and be more effective (Klein, 2002). According to Klein (2002), affiliated directors cannot perform objectively when judging current management and their performances.

Board Size

Another commonly investigated characteristic of the board of directors is the board size. Whether the board size has a negative or a positive influence on the effectiveness of corporate governance is still open for debate. In a setting where Chaganti et al. (1985) makes a comparison between failed and non-failed companies, they provide evidence that companies failing companies have a greater board size than non-failing companies. Chaganti et al. (1985) argue that a greater board size negatively influences the effectiveness of corporate governance. Guest (2009) supports this point of view, arguing that there might be problems in communicating and decision-making

processes since there are more directors in the board. Guest (2009) also provides evidence in an UK setting that the size of the board is negatively associated with a company's firm performance. However, Coles et al. (2008) argue that the size of the board is dependent on various variables (e.g., size of the firm and its complexity). Coles et al. (2008) provide evidence that complex firms have larger boards and have a higher percentage of outside directors. Next to that, Coles et al. (2008) find that firm performance is positively related to a company's board size. Chaganti et al. (1985) and Guest (2009) do not take these various factors into account and therefore, Coles et al.'s view seems more reasonable.

Experience and Expertise

Two other aspects commonly used to investigate corporate governance are CEO experience and the existence of financial expertise. Both characteristics of corporate governance influence the effectiveness positively (Krishnan and Visvanathan, 2008). Krishnan and Visvanathan (2008) argue that higher levels of expertise and experience in the board increase its efficiency and accuracy. Therefore, CEO experience and existence of financial expertise in the board of directors improve the effectiveness of corporate governance.

Number of Meetings

Board meetings are also used to measure the corporate governance structure of a company. Bethel et al. (1998) provide evidence that the number of board meetings is positively associated with a company's performance. Bethel et al. (1998) argue that with an increase of board meetings, directors are able to monitor the management more accurate and more efficient, and that they can interrupt more timely when management does not act in the best interest of its shareholders. Therefore, an increase in the number of board meetings positively influences the effectiveness of a company's corporate governance structure.

CEO Duality

A relatively new characteristic to measure corporate governance is CEO duality. CEO/chairman duality occurs when the CEO also covers the chairman position in the board of directors (Ahmed and Duellman, 2007). Then, the CEO is not only responsible for the daily affairs but the CEO also takes a position in monitoring and evaluating his own performance as a CEO. CEO duality, therefore, might result in conflicts of interest in which the CEO might influence the company's strategy and performances in order to increase its own personal interests. Fama and Jensen (1983)

argue that there should be a separation of duties in order to prevent the CEO from conflicts of interest. The separation of these duties will contribute to a more efficient controlling process and therefore, increase the effectiveness of the corporate governance structure.

Anti-Takeover Protection

From an external corporate governance perspective, Gompers et al. (2003) use an anti-takeover protection index to measure the effectiveness of (external) corporate governance. This index can be interpreted as a measure of takeover vulnerability. Higher values of this index are associated with more protection against takeovers. Lower vulnerability and a higher anti-takeover protection index, indicate a more effective (external) corporate governance structure (Gompers et al., 2003).

All various board of directors' characteristics taken together, there can be concluded that the effectiveness of corporate governance is influenced by various variables. The effectiveness of the (internal) corporate governance is positively related to (1) the independence of the board, (2) the board size, (3) the existence of experience and expertise in the board, and (4) the number of board meetings. In addition, corporate governance's effectiveness is negatively related to CEO duality. From an external corporate governance perspective, lower vulnerability to hostile takeovers (higher takeover protection) indicate a more effective (external) corporate governance structure.

3.3 Prior Research in this field

In existing literature, there are two competing perspectives about the relation between corporate governance and accounting conservatism: the substitutive perspective (demand side) and the complementary perspective (supply side). The substitutive perspective addresses that conservative financial reporting can be seen as a vehicle that reduces uncertainty and information asymmetry, so it is expected that companies with a less effective corporate governance structure, and in which agency problems are more severe, have a higher contracting demand for conservative financial reporting (Chi et al., 2009). Therefore, the substitutive perspective expects a negative relation between corporate governance effectiveness and accounting conservatism. On the other hand, the complementary perspective, addresses that an effective corporate governance structure favors the implementation of conservative financial reporting (Chi et al., 2009). Therefore, the complementary perspective expects a positive relation between corporate governance effectiveness and accounting conservatism.

3.3.1 Substitutive Perspective

Several academics support the substitutive perspective of the relation between corporate governance and conservative financial reporting. For instance, Watts (2003a) argues that the demand for accounting conservatism is caused by the contracting role of accounting. Due to a less effective corporate governance structure, firms tend to have higher asymmetric verifiability. Watts (2003a) argues that conservative financial reporting provides timely signals for investigating the existence of negative net present value projects. Therefore, accounting conservatism protects the shareholders' option to exercise their property rights or other appropriate actions against management in order to protect their investments. Thus, Watts (2003a) argues that due to a less effective corporate governance structure, the efficient contracting mechanism "demands" for conservative financial reporting. Watts (2003a) hypothesizes that there is a negative relation between corporate governance effectiveness and accounting conservatism.

Ahmed and Duellman (2007) support Watts' view on the relation between corporate governance and accounting conservatism. Ahmed and Duellman investigate this relation in an US setting over the fiscal years 1999-2001, using five proxies for internal corporate governance. These proxies show conflicting results. For instance, they find that the percentage of inside directors is negatively related to accounting conservatism, while the percentage of a firm's shares owned by outside directors is positively related to accounting conservatism. In other words, corporate governance effectiveness is positively and negatively related to conservative financial reporting. Overall, they provide evidence that conservative financial reporting assist directors in reducing a firm's agency costs. Ahmed and Duellman (2007) argue that, through the substitutive perspective, the demand for conservative financial reporting will be higher if financial statements are prepared under a less effective corporate governance structure.

Khan and Watts (2007) find, using an US setting over the period 1962-2005, that younger firms, firms with longer investment cycles, and firms with higher idiosyncratic uncertainty are unlikely to have evolved an effective corporate governance mechanism to mitigate agency problems with shareholders and creditors. Therefore, they argue that younger firms tend to be more conservative in their financial reporting. This implies a negative relation between corporate governance effectiveness and the use of conservative financial reporting (Khan & Watts, 2007).

LaFond and Roychowdhury (2008) find that conservative financial reporting declines with managerial ownership. Managerial ownership can be defined as the fraction of a firm's total shares held by the management (LaFond & Roychowdhury, 2008). They address that lower managerial ownership cause more severe agency problems, and therefore an increasing demand for conservative financial reporting. Furthermore, LaFond and Roychowdhury (2008) provide evidence that accounting conservatism is positively related to the level of information asymmetry. They hypothesize that it is possible that different governance structures may imply different information environments, and that if accounting conservatism is indeed a vehicle to reduce uncertainty and information asymmetry, it is expected that a less effective corporate governance structure causes a higher contracting demand for accounting conservatism (LaFond & Roychowdhury, 2008).

3.3.2 Complementary Perspective

However, there are also academics that support the complementary perspective instead of the substitutive perspective. For instance, Garcia Lara et al. (2009) find that firms with strong corporate governance mechanisms appear to use discretionary accruals in order to inform their investors of bad news in a timelier manner. Garcia Lara et al. (2009) use the Basu model to investigate the relation between various explanations for conditional conservatism in an US setting for the period 1964 to 2001. Garcia Lara et al. (2009) test also for the impact of external corporate governance on the level of conservative financial reporting. They argue that internal as well as external corporate governance provisions play an important role in the use of conservative financial reporting, which provides early warning signals to corporate governance bodies to investigate the reasons for bad news in an early stage. Therefore, Garcia Lara et al. (2009) argue that corporate governance effectiveness is positively related to conservative financial reporting.

Lobo and Zhou (2006) support Garcia Lara et al.'s point of view by providing evidence of an increase of conservative financial reporting in an US setting. Differently, Lobo and Zhou (2006) specifically investigated the impact of the introduction of SOX on management's discretionary reporting behavior. More specifically, they investigate how the impact of SOX, on the internal corporate governance structure, is related to the management's reporting behavior. Lobo and Zhou (2006) find evidence of an increase in accounting conservatism after the implementation of SOX and resulting requirements by the Securities and Exchange Commission (SEC). Using the Basu

model and discretionary accruals, they find evidence that firms incorporate losses more quickly than gains when companies report their income in the post-SOX period. Next to that, Lobo and Zhou (2006) find evidence that management uses lower discretionary accruals, implying that they are more conservative in their financial reporting behavior after the implementation of SOX. Their empirical evidence suggests that the implementation of SOX have altered the management's discretionary reporting behavior to make it more conservative (Lobo and Zhou, 2006).

In addition, Beekes et al. (2004) find evidence, in an United Kingdom (UK) setting, that firms with a higher proportion of outside directors on the board are more conservative. Beekes et al. (2004) use the independence of the board of directors as a proxy for internal corporate governance to measure its impact on the level of conservatism. Ho (2009) argues that a high proportion of inside directors will lead to an opportunity to use aggressive financial reporting and will reduce the level of accounting conservatism. Assuming that a higher proportion of outside directors on the board imply an independent and, therefore, stronger corporate governance structure, their findings support the complementary perspective since they find that firms with a higher proportion of outside directors on the board recognize bad news in earnings on a timelier basis (Beekes et al., 2004).

3.3.3 Hypotheses Development

To elaborate on the discussion how corporate governance affects accounting conservatism, Wang (2006) indicates that both the substitutive and complementary perspective may have equally important but totally diverse influences. The substitutive perspective implies that a stronger (weaker) corporate governance structure creates a lower (greater) demand for high-quality earnings. However, the complementary perspective implies that managers in companies with strong corporate governance will be disciplined to provide high-quality earnings, while companies with weak corporate governance may have higher incentives to provide earnings that are not in line with underlying economic reality (Chi et al., 2009). Accounting conservatism is different from other earnings attributes because it has long been regarded as an efficient vehicle to alleviate agency problems. Consequently, the substitutive perspective predicts that firms with weaker corporate governance mechanisms tend to be more conservative in their financial reporting, while the complementary perspective predicts that firms with stronger corporate governance mechanisms tend to be more conservative in their financial reporting (Chi et al., 2009). Given the

convincing reasoning and evidence on both perspectives, it is not clear which perspective is stronger ex ante.

Chhaochharia and Grinstein (2005) argue that companies' board size and the independence of the board have increased since the implementation of SOX in 2002. Next to that, Bethel et al. (1998) provide evidence that the number of board meetings increased over time. In addition, Krishnan and Visvanathan (2008) find that the number of companies with financial expertise in the board of directors have increased over time. All these findings imply that the internal corporate governance effectiveness have increased over time, especially since the implementation of SOX in 2002. The fact that generally accepted accounting principles (GAAP) have built-in a conservative bias is widely recognized. With regard to the change of accounting conservatism over time, Givoly and Hayn (2000) find that their results are consistent with a trend of increased conservative financial reporting. Ding and Stolowy's (2005) findings are in line with Givoly and Hayn's (2000) results. Dings and Stolowy (2005) also find a general upward trend in the degree of conservative financial reporting over time. Especially since recent financial crisis, the degree of accounting conservatism has increased (Mora and Walker, 2015).

Since prior research provides evidence that the effectiveness as well as the level of conservative financial reporting has increased over time, the complementary perspective seems to be more reasonable than the substitutive perspective. Therefore, it is expected that a stronger corporate governance structure is positively related to accounting conservatism, leading to the following hypothesis:

H1: Stronger corporate governance structure is positively related to conservative financial reporting.

Where most prior academics use only internal aspects of corporate governance to measure corporate governance as a whole, this thesis divides corporate governance into an internal and external part. Again, several academics provide evidence that internal corporate governance aspects have increased over time implying that the internal corporate governance structure became stronger/more effective. Therefore, it is expected that internal corporate governance structure to be positively related to accounting conservatism, leading to the following hypothesis:

H2a: Stronger internal corporate governance structure is positively related to conservative financial reporting.

The external part of corporate governance have been neglected by prior academics in investigating the relation between corporate governance and conservative financial reporting. Although, Garcia Lara et al. (2009) do take the external part of corporate governance into account. They argue that internal as well as external corporate governance provisions play an important role in the use of conservative financial reporting, which provides early warning signals to corporate governance bodies to investigate the reasons for bad news in an early stage. Therefore, Garcia Lara et al. (2009) argue that corporate governance effectiveness is positively related to conservative financial reporting. However, their dataset is ranging over a timespan before the implementation of SOX, and therefore their results are outdated. Despite that their results are outdated, it is still expected that external corporate governance effectiveness is positively related to accounting conservatism, leading to the following hypothesis:

H2b: Stronger external corporate governance structure is positively related to conservative financial reporting.

3.4 Summary

This chapter provided an overview of existing literature on the relation between corporate governance and conservative financial reporting. All existing literature can be divided into two perspectives: the substitutive and complementary perspective. The substitutive perspective predicts that firms with weaker corporate governance mechanisms tend to be more conservative in their financial reporting, while the complementary perspective predicts that firms with stronger corporate governance mechanisms tend to be more conservative in their financial reporting. Given the convincing reasoning and evidence on both perspectives, it is not clear which perspective is stronger ex ante. This chapter also provided an overview of commonly used characteristics of corporate governance to measure the effectiveness of a company's corporate governance structure. Overall, Academics find evidence that the effectiveness of corporate governance has increased over time. Next to that, academics provide evidence that accounting conservatism has increased over time, especially since the recent financial crisis. Therefore, it is expected that the complementary perspective to be more reasonable. Taking this into account, three hypothesis were stated, hypothesizing that internal corporate governance effectiveness, external corporate governance, and corporate governance effectiveness as a whole to be positively related to conservative financial reporting.

4. Data and Methodology

4.1 Introduction

In this chapter the methodology and the sample are described. In paragraph 4.2 common measures for accounting conservatism are described. This is followed by a paragraph where the corporate governance proxies are described. Paragraph 4.3 provides also an overview on how various corporate governance composite variables are calculated. In the fourth paragraph of this chapter, all important control variables in prior research are described. All previous chapters come together in paragraph 4.5, where the research design of this thesis is presented. This paragraph is followed by a paragraph providing a description of the sample used in this thesis. This chapter is closed with a summary where all important concepts in this paragraph are included.

4.2 Measures for Accounting Conservatism

In existing literature on the relation between conservative financial reporting and corporate governance, two measures of accounting conservatism are widely used. First measure of accounting conservatism is based on Basu's (1997) measure which regresses earnings on returns. The second measure for conservative financial reporting is based on the approach suggested by Ball and Shivakumar (2005). Ball and Shivakumar (2005) use regressions based on accruals and cash flows in order to examine the level of accounting conservatism.

4.2.1 Accounting Conservatism based on Basu (1997)

Basu (1997) argues that under conservative financial reporting, earnings capture bad news faster than good news. This is caused by the asymmetric standards of verification of gains and losses. In order to operationalize good and bad news, Basu (1997) uses returns to operationalize good and bad news since stock prices incorporate all financial information arriving from the market retrieved from multiple sources in a timely way. Therefore, stock price changes can be used as a measure of news arrival during a period (Garcia Lara et al., 2009b). Basu (1997) argues that earnings are timelier in recognizing bad news than in recognizing good news, and therefore, a higher association of earnings with negative returns than with positive returns is expected. Basu (1997) uses the following regression to operationalize his reasoning:

$$(1) \text{ EARN}_t = \beta_0 + \beta_1 \text{NEG}_t + \beta_2 \text{RET}_t + \beta_3 \text{NEG}_t \text{RET}_t + \mu_t$$

where $EARN_t$ indicates earnings per share before extraordinary items and discontinued operations in fiscal year t divided by the share price at the start of the fiscal year; RET_t indicates the stock rate of return of the company, measured by compounding 12 monthly stock returns ending the last day of the fiscal year; and NEG_t is a dummy variable which equals one when there is negative or zero returns (indicating bad news), and zero when there is positive returns (indicating good news). According to Basu (1997), β_3 is the indicator of the level of asymmetric timeliness of conservative financial reporting and is, therefore, expected to be significant and positive in case of accounting conservatism.

Despite the Basu model is most widely used to measure the level of conservative financial reporting, there is criticism on the use of this model. Dietrich et al. (2007) argue that the Basu model is biased and that inferences based on this model should not be relied upon. Dietrich et al. (2007) claims that this bias seems to be caused by the methodology used to partition the sample used and by the chosen deflator for the variables in the regression analyses. Therefore, they suggest to use another measure of conservative financial reporting in order to validate the robustness of inferences drawn from the Basu model. Ryan (2006) claim that the biases in Basu's model are likely to be small and, therefore, recommend to use market adjusted returns to create the partitioning dummy variable NEG_t in the Basu regression model. Ryan (2006) argues that partitioning a regression analysis with one of the regressors included in the model (in this case RET_t) may cause biased inferences. Again, Ryan (2006) is followed in his additional precaution by measuring returns over the fiscal year. Traditionally, the Basu model uses the annual stock rate return measured from nine months before the end of the fiscal year to three months after the end of the fiscal year (Basu, 1997). Basu (1997) argues that using this time span gives the market time to incorporate information in contemporaneous earnings. However, Ryan (2006) argues that using fiscal years instead of Basu's time span avoids that returns are distorted by new information not related to earnings announcement at fiscal year-end.

4.2.2. Accounting Conservatism based on Ball and Shivakumar (2005)

The second model used in measuring conservative financial reporting is the approach suggested by Ball and Shivakumar. Ball and Shivakumar (2005) provide a regression model based on accruals and cash flows. The main advantage of this model is that this model does not rely on market measures and, therefore, reduce the risk of drawing incorrect inferences due to market

inefficiencies as in the traditional Basu model (Garcia Lara et al., 2009b). According to Garcia et al. (2009), asymmetrical treatment of economic gains and losses also cause an asymmetry in accruals. Ball and Shivakumar (2005) claim that the negative association between operating cash flows and earnings is less pronounced in bad news periods. This is caused by the asymmetric verification requirements to recognize good and bad news in earnings. According to their theory, Ball and Shivakumar (2005) argue that economic losses are likely to be recognized on a timely basis through unrealized accruals, while economic gains are recognized when they are realized and thus are accounted for on a cash basis. In order to test this asymmetry, and thus the level of conservative financial reporting, Ball and Shivakumar provide the following model:

$$(2) \text{ Accruals}_t = \beta_0 + \beta_1 \text{DCFO}_t + \beta_2 \text{CFO}_t + \beta_3 \text{CFO}_t \text{DCFO}_t + \mu_t$$

where Accruals_t is the annual number of total accruals defined as the income before extraordinary items minus the cash flow from operations (CFO_t). To control for variation in type and size of a company's accruals, Accruals_t and CFO_t are adjusted by subtracting the two digit SIC industry mean of each variable per fiscal year, following Kothari et al.'s (2005) method. DCFO_t can be defined as a dummy variable which equals one in case of a negative cash flow from operations, and zero otherwise. According to Ball and Shivakumar (2005), β_2 is expected to turn significantly negative indicating the negative correlation between accruals and cash flows. β_3 is again the indicator for the level of conservative financial reporting, and turns significantly positive in case of accounting conservatism. This significant positive variable shows the positive contemporaneous association between accruals and cash flows in bad news periods and, therefore, the accrued losses are more likely in periods of negative cash flows (Garcia Lara et al., 2009b).

4.3 Corporate Governance Proxies

4.3.1 External Corporate Governance

In order to operationalize external corporate governance, Gompers et al.'s (2003) approach is followed in developing an anti-takeover protection index indicating the level of external monitoring. Cremers and Nair (2005) interpret this index as a measure of takeover vulnerability. Gompers et al. (2003) construct this index by adding one point for every provision that reduces takeover vulnerability. Higher values of this index are associated with more protection against takeovers and, therefore, indicate higher external corporate governance effectiveness.

Traditionally, Gompers et al. (2003) take 24 provisions into account to develop their anti-takeover protection index. Cremers and Nair (2005) also use a narrower alternative of this index that only take three provisions into account. They conclude that their results do not change and that there are no systematic biases in their index compared to the traditional index. Additionally, Byrd and Hickman (1992) find that blank-check preferred stock, a classified board, poison pills, golden parachutes, limit ability to call a special meeting, and limitations to act by written consent are the most significant anti-takeover provisions. Therefore, an index based on these six anti-takeover provisions is developed. This external corporate governance (ECG) index has a score ranging from zero to six. Higher values of this index refer to higher anti-takeover protection, and can be interpreted as higher external corporate governance effectiveness (Cremers and Nair, 2005). The ECG index is calculated as follows:

$$(3) \ ECG = Blankcheck + CBoard + PPill + GParachute + LWCNST + LSPMT$$

where each individual anti-takeover provision takes value one in case the company takes this anti-takeover provision. For a definition of each variable included see *Appendix A*.

4.3.2 Internal Corporate Governance

In existing literature, the effectiveness of internal corporate governance is most widely measured by the board of directors' composition and effectiveness. Most widely used proxies for internal corporate governance are board independence, audit committee independence, CEO experience, CEO duality, board activity, and board financial expertise. An independent board of directors, an independent audit committee, an experienced CEO, financial expertise in the board of directors, and a board without CEO duality increase the effectiveness of internal corporate governance (Klein 2002; Barro and Barro 1990; Givoly and Hayn 2000; Ahmed and Duellman 2007).

The independence of the board of directors can be measured by examining whether the board of directors contains a majority of outside directors. Klein (2002) defines an outside board member as a director that is not tied to a company except from being a member of the board. Klein (2002) argues that a benchmark of 80 percent outside directors indicate an effective internal corporate governance structure. More specifically, when more than 80 percent of the directors is only member of the board, a company can be identified as independent. An audit committee can be defined as independent when the CEO is not a member of this committee (Klein, 2002).

The effectiveness of a company's internal corporate governance also increases when a board of directors is active. More specifically, a board can be defined as active if all directors attend all board meetings (Barro and Barro, 1990). Barro and Barro (1990) also conclude that an experienced CEO in the board of directors increases the effectiveness of internal corporate governance. In their study they provide evidence that the level of experience is closely related to the age of the CEO. Barro and Barro (1990) find evidence that a company's turnover decreases when a CEO is younger than 52 years old, and increase after that age. Based on these results, Barro and Barro (1990) claim that a CEO can be defined as experienced when he is older than 52 years old. CEO/chairman duality occurs when the CEO also covers the chairman position in the board of directors (Ahmed and Duellman, 2007). Then, the CEO is not only responsible for the daily affairs but the CEO also takes a position in monitoring and evaluating his own performance as a CEO. CEO duality, therefore, reduces the effectiveness of internal corporate governance.

To operationalize internal corporate governance, an approach comparable to the ECG index is followed (Gompers et al., 2003). This index is developed based on the six aforementioned proxies for board of directors' composition and effectiveness. This internal corporate governance (ICG) index has a score ranging from zero to six. Higher values of this index refer to a more effective internal corporate governance structure. The ICG index is calculated as follows:

$$(4) ICG = CEOExp + CEODual + Independence + AudComIndependence + FinExpertise + ActiveBoard$$

where each individual board of directors characteristic takes value one in case the company does have this characteristic except from CEODual which equals 1 in case there is no CEO duality. For a definition of each variable included see *Appendix A*.

4.3.3. Total Corporate Governance

As mentioned in Chapter 2, corporate governance can be divided into an internal and external part. Denis and McConnell (2003) argue that the effectiveness of a corporate governance structure hinges vitally on the coordination between internal and external corporate governance. Recent research provides evidence that external and internal corporate governance mechanisms complement each other, and that both mechanisms are necessary to provide an effective corporate governance structure (Baber et al., 2012). In order to make inferences about the relation of

corporate as whole and conservative financial reporting, total corporate governance need to be operationalized. Again, an approach comparable to the ECG and ICG indices is followed. This index contains information about the board of directors' characteristics and effectiveness, and the anti-takeover provisions. More specifically, this index takes all proxies for internal and external corporate governance into account. The TCG index is calculated as follows:

$$(5) TCG = ICG \text{ Index Score} + ECG \text{ Index Score}$$

where the ICG and ECG index scores take the value of formula (3) and (4). This total corporate governance (TCG) index has a score from ranging zero to twelve. Higher values of this index refer to a more effective (total) corporate governance structure. Variables are described in *Appendix A*.

4.4 Control Variables

This thesis aims to investigate the relation between corporate governance effectiveness and conservative financial reporting. However, some other variables than the signaled dependent and independent variables might influence this relation. In order to reduce the influence of these other variables, control variables are included to keep these other variables constant. Most commonly used control variables in prior research are: firm size, leverage, growth, and a dummy indicating whether a company has a big 4 auditor or not.

LaFond and Watts (2006) argue that large companies tend to have more conservative financial reporting due to possible political costs. Therefore, their approach is followed in controlling for firm size. Firm size is operationalized as the natural logarithm of a company's total assets (LaFond & Watts, 2006). Second, there need to be controlled for companies with a high level of leverage. Ahmed and Duellman (2007) argue that firms with a high leverage might have conflicts with their shareholders and that the use of conservative financial reporting reduces the cost of debt. Therefore, it is likely that firms with a high leverage influence the relation between corporate governance effectiveness and conservative financial reporting positively. To control for leverage, this thesis uses the sum of long-term debt and total current liabilities divided by a company's total assets. Another important factor to control for is growth since firms with a high growth rate, especially upcoming firms, tend to be less conservative in their financial reporting (Ahmed & Duellman, 2007). Garcia Lara et al. (2009b) expect that growth is negatively related to accounting conservatism since upcoming firms do not have strong corporate governance codes. Following

Ahmed and Duellman's approach, growth is operationalized as the percentage of sales growth. According to LaFond and Watts (2006), it is also essential to control for auditor differences. LaFond and Watts (2006) argue that companies with a big 4 auditor, KPMG, Ernst & Young, PwC, and Deloitte respectively, tend to have stronger corporate governance codes and use more conservative financial reporting. Therefore, a dummy variable "Big4" is included which equals one if a company is audited by a big 4 company, and zero otherwise.

Some of the evidence that proves the existence of accounting conservatism can also be explained by other phenomena. Another explanation for the net asset understatement observed in empirical literature is the abandonment option (Hayn, 1995). Earnings management can also account for some of the evidence resulting from managers to maximize their own payoff functions at the expense of other parties to the firm (Hanna, 2002). Therefore, it is important to control for the abandonment option and earnings management. To control for the abandonment option, a dummy variable is included which equals one if a company performed the abandonment option in fiscal year t , and zero otherwise. In order to control for earnings management, (discretionary) accruals are used and estimated following the modified Jones model. The modified Jones model is a widely used model to measure earnings management. More specifically, Kothari et al.'s (2005) approach is followed in estimating discretionary accruals for every industry group with at least twenty firms in a given fiscal year. It is expected that both the abandonment option and earnings management are negatively related to accounting conservatism since these could (partially) explain the accounting conservatism phenomenon. Finally, there are industry and fiscal year control variables included to make sure there is no significant difference between various industries or fiscal years.

4.5 Research Design

Although there is criticism on the Basu model, this model is used in this thesis in order to measure the level of conservatism. The Basu model is the most widely used model in this field and therefore the comparability of this thesis' results increases when using this model. To reduce the possibilities that this model is biased, the fiscal year is used to compound the yearly returns. In additional analysis Ball and Shivakumar's (2005) approach is used to test the robustness of the results.

To assess whether a more effective corporate governance structure is positively related to conservative financial reporting, and thus examining hypothesis 1, equation (1) is modified to

include the index for total corporate governance, *TotalCG*, as an interaction term as follows (see *Appendix B* for predictive validity framework and *Appendix C* for a variable description):

$$(6) EARN_{jt} = \beta_0 + \beta_1 NEG_{jt} + \beta_2 RET_{jt} + \beta_3 RET_{jt} * NEG_{jt} + \beta_4 TotalCG_{jt-1} + \beta_5 NEG_{jt} * TotalCG_{jt-1} \\ + \beta_6 RET_{jt} * TotalCG_{jt-1} + \beta_7 RET_{jt} * NEG_{jt} * TotalCG_{jt-1} + \beta_{8-13} Control_{jt-1} \\ + \beta_{14-19} NEG_{jt} * Control_{jt-1} + \beta_{20-25} RET_{jt} * Control_{jt-1} + \beta_{26-31} RET_{jt} * NEG_{jt} \\ * Control_{jt-1} + \beta_{32-39} Industry_{jt-1} + \beta_{40-48} fyear_{jt-1} + \mu_{jt}$$

In line with hypothesis 1, it is expected to observe differences in the use of conservative financial reporting between weak and strong corporate governance structures, that is, companies with low and high values of *TotalCG*, respectively. More specifically, this thesis hypothesizes that the asymmetric timeliness coefficient, β_3 , and *TotalCG* interaction coefficient, β_7 , turn significantly positive. Thus, the level of accounting conservatism ($\beta_3 + \beta_7$) of companies with a more effective corporate governance is higher than for companies with a less effective corporate governance.

For testing the second hypotheses (2a and 2b), a similar approach is followed. To assess whether internal and external corporate governance effectiveness is positively related to accounting conservatism, equation (1) is modified to include the indices for internal and external corporate governance, *InternalCG* and *ExternalCG*, as interaction term as follows (see *Appendix B* for predictive validity framework and *Appendix C* for a variable description):

$$(7) EARN_{jt} = \beta_0 + \beta_1 NEG_{jt} + \beta_2 RET_{jt} + \beta_3 RET_{jt} * NEG_{jt} + \beta_4 InternalCG_{jt-1} + \beta_5 NEG_{jt} \\ * InternalCG_{jt-1} + \beta_6 RET_{jt} * InternalCG_{jt-1} + \beta_7 RET_{jt} * NEG_{jt} * InternalCG_{jt-1} \\ + \beta_8 ExternalCG_{jt-1} + \beta_9 NEG_{jt} * ExternalCG_{jt-1} + \beta_{10} RET_{jt} * ExternalCG_{jt-1} \\ + \beta_{11} RET_{jt} * NEG_{jt} * ExternalCG_{jt-1} + \beta_{12-17} Control_{jt-1} + \beta_{18-23} NEG_{jt} * Control_{jt-1} \\ + \beta_{24-29} RET_{jt} * Control_{jt-1} + \beta_{30-35} RET_{jt} * NEG_{jt} * Control_{jt-1} \\ + \beta_{36-43} Industry_{jt-1} + \beta_{44-52} fyear_{jt-1} + \mu_{jt}$$

In line with hypotheses 2a and 2b, it is expected to observe differences in the use of conservative financial reporting between weak and strong internal and external corporate governance structures, that is, companies with low and high values of *InternalCG* and *ExternalCG*, respectively. More specifically, it is hypothesized that the asymmetric timeliness coefficient, β_3 , the *InternalCG* interaction coefficient, β_7 , and the *ExternalCG* interaction coefficient, β_{11} , turn significantly positive. Thus, the effectiveness of internal corporate governance and external corporate governance effectiveness is positively related to the level of conservative financial reporting.

4.6 Data

Data are available through the university subscribed databases within the Wharton Research Data Services and provide an opportunity to select US companies. Since data regarding corporate governance is available starting 2007, and therefore the first year after the implementation of SOX (which radically changed corporate governance), the sample period starts in 2007. 2015 is the last year implemented in this sample since not all data is available for 2016 yet. The COMPUSTAT database provides company-year level accounting data for the US companies (e.g., to determine control variables). The CRSP database is useful to acquire specific share prices, returns and earnings necessary for the determinants of the Basu model. The ISS database is used to gain information about the company's directors and governance. More specifically, the ISS database provides data to determine the various corporate governance proxies. Firms with a negative book value of equity and firms with missing data are eliminated. To reduce the effect of outliers, all continuous variables are winsorized annually at the top and bottom percentile of their distributions. Since data is retrieved from various databases, all databases need to be merged into one data file. The intersection of these databases yield a sample that contains 7,742 firm-year observations. After performing additional data requirements (e.g., dropping missing values) the database consists of 6,611 observations for the period 2007-2015, corresponding to 1,338 different companies.

4.7 Summary

This chapter provided an overview of this thesis' data and methodology. First, widely used models in this field, the Basu model and Ball and Shivakumar's approach, are described. Basu argues that earnings are timelier in recognizing bad news than in recognizing good news, and therefore, a higher association of earnings with negative returns than with positive returns is expected. This indicates conservative financial reporting. To test the hypotheses, the Basu model is used. The internal, external and total corporate governance effectiveness are measured using composite variables. The Basu model is modified to include the indices for internal, external and total corporate governance as an interaction term. In line with the hypotheses, it is expected that the asymmetric timeliness coefficient, and the internal, external, and total corporate governance interaction coefficients turn significantly positive. This indicates that total, internal, and external corporate governance structure effectiveness are positively related to the level conservative financial reporting. This chapter ended with a sample description: the database consists of 6,611 observations for the period 2002-2015, corresponding to 1,338 different companies.

5. Results

5.1 Introduction

This chapter provides an overview of the results. In paragraph 5.2, the descriptive statistics are provided and several t-tests are performed to test differences on corporate governance scores and the level of accounting conservatism per fiscal year. Paragraph 4.3 provides the results for the OLS assumptions for both models used in this thesis. This is followed by the results for testing hypothesis 1, hypothesis 2a and hypothesis 2b using an OLS regression analyses. In paragraph 5.4, some additional testing is provided. In this paragraph the sample is split based on corporate governance scores, resulting in a “high” and a “low” subsample. This is followed by a paragraph where the robustness of this thesis’ results are tested, in line with the suggestions from Ryan (2006). The robustness of the results are tested using Ball and Shivakumar’s (2005) regression model based on accruals and cash flows. This chapter is closed with a summary where all important results from this paragraph are included.

5.2 Univariate Analysis

5.2.1 Descriptive Statistics

Table 5.1 contains the summary statistics of the variables used in various tests in this thesis. Panel A contains the variables used for the Basu model and the control variables. Panel B contains the internal, external, and total corporate governance scores and the corporate governance proxies individually. The summary statistics for firms in the sample indicate that, on average, the 12-monthly stock return is 0.128, and that 31.4 percent of the firm-year observations show negative returns. Firms in the sample have an average leverage of 0.195, an average sales growth of 6.7 percent, and that 5.5% of the firm-year observations performed an abandonment option. As for the control variables, the natural logarithm of total assets is 7.76 (\$2,344 million), indicating that the firms in the sample are fairly large. The discretionary accruals take an average value of almost nihil (-0.000). Finally, almost 93% of the firms in this sample are audited by a Big 4 auditor.

The summary statistics provided in table 5.1 panel B indicate that, on average and rounded, firms score 7 out of 12 in their total corporate governance score. With regard to the internal and external corporate governance firms score, on average and rounded, 4 and 3 out of 6. This provides an indication that a company’s internal corporate governance structure, on average, is more effective

Table 5.1: Descriptive Statistics

| Panel A: Variables for the Basu Model and Control Variables | | | | | | |
|-----------------------------------------------------------------------------|-------|--------|----------|--------|--------|-------|
| | N | Mean | Std. Dev | P25 | Median | P75 |
| <i>Earn</i> | 6,611 | 1.771 | 3.557 | 0.55 | 1.57 | 2.87 |
| <i>RET</i> | 6,611 | 0.128 | 1.251 | -0.136 | 0.085 | 0.322 |
| <i>NEG</i> | 6,611 | 0.314 | 0.464 | 0 | 0 | 1 |
| <i>Leverage</i> | 6,611 | 0.195 | 0.181 | 0.031 | 0.176 | 0.295 |
| <i>FirmSize</i> | 6,611 | 7.764 | 1.555 | 6.608 | 7.597 | 8.761 |
| <i>Growth</i> | 6,611 | 0.067 | 0.243 | -0.020 | 0.054 | 0.136 |
| <i>Big4</i> | 6,611 | 0.925 | 0.264 | 1 | 1 | 1 |
| <i>AbanOption</i> | 6,611 | 0.055 | 0.072 | 0 | 0 | 0 |
| <i>EarnMan</i> | 6,611 | -0.000 | 0.053 | -0.024 | 0.003 | 0.029 |
| Panel B: Corporate Governance Proxies (Total Score and Individually) | | | | | | |
| | N | Mean | Std. Dev | P25 | Median | P75 |
| <i>TotalCG</i> | 6,611 | 7.022 | 1.325 | 6 | 7 | 8 |
| <i>InternalCG</i> | 6,611 | 4.191 | 0.828 | 3 | 4 | 5 |
| <i>CEOExperience</i> | 6,611 | 0.800 | 0.400 | 1 | 1 | 1 |
| <i>CEODuality</i> | 6,611 | 0.480 | 0.500 | 0 | 0 | 1 |
| <i>Independence</i> | 6,611 | 0.839 | 0.368 | 1 | 1 | 1 |
| <i>AuditCommitteeIndep.</i> | 6,611 | 0.915 | 0.279 | 1 | 1 | 1 |
| <i>FinExpertise</i> | 6,611 | 0.907 | 0.291 | 1 | 1 | 1 |
| <i>ActiveBoard</i> | 6,611 | 0.951 | 0.215 | 1 | 1 | 1 |
| <i>ExternalCG</i> | 6,611 | 3.131 | 0.997 | 2 | 3 | 4 |
| <i>Blankcheck</i> | 6,611 | 0.928 | 0.259 | 1 | 1 | 1 |
| <i>ClassBoard</i> | 6,611 | 0.471 | 0.499 | 0 | 0 | 1 |
| <i>PoisonPill</i> | 6,611 | 0.215 | 0.411 | 0 | 0 | 0 |
| <i>GoldenParachute</i> | 6,611 | 0.751 | 0.433 | 1 | 1 | 1 |
| <i>Lim. on act. by wr. consent</i> | 6,611 | 0.306 | 0.461 | 0 | 0 | 1 |
| <i>Lim. on call for spec. meet.</i> | 6,611 | 0.460 | 0.498 | 0 | 0 | 1 |

The Sample of both panels consists of 6,611 firm-year observations (1,338 companies) over a period from 2007 to 2015. In both panels, the reported means and standard deviations of continuous variables reflect the annual winsorization at the top and bottom percentile.

Panel A: *Earn* is the earnings per share before extraordinary items and deflated by share price at the beginning of the period. *Ret* is the annual stock return measured as the continuously compounded monthly return over the fiscal year. *Neg* is a dummy variable which indicates whether there is bad news (equals 1 if negative or zero stock return and 0 otherwise). *Leverage* is the company's leverage computed by dividing a company's debt by total assets. *FirmSize* is the company's size computed by taking the natural logarithm of a company's total assets. *Growth* denotes a company's sales growth. *Big4* is a dummy variable which equals 1 in case the company is audited by a Big 4 auditor. *AbanOption* is a dummy variable that equals 1 in case a company executes an abandonment option. *EarnMan* is an indicator for earnings management, operationalized as discretionary accruals and computed following the Modified Jones model.

Panel B: *TotCG* is a summary measure of total corporate governance effectiveness taking all proxies for internal and external corporate governance into account. This measure has a score ranging from 0 to 12, where high (low) values indicate high (low) anti-takeover protection and strong (weak) board of directors. *InternalCG* is a comparable summary measure for internal corporate governance effectiveness taking all proxies for internal corporate governance into account. This measure has a score ranging from 0 to 6, where high (low) values indicate a strong (weak) board of directors. *ExternalCG* is a comparable summary measure for external corporate governance effectiveness taking all proxies for external corporate governance into account. This measure has a score ranging from 0 to 6, where high (low) values indicate high (low) anti-takeover protection. Other variables in panel B are dummy variables which equal 1 if certain condition is met and 0 otherwise; existence of an experienced CEO, no CEO duality, an independent board of directors, an independent audit committee, existence of financial expertise, an active board, or whether the company took a certain anti-takeover provision; blank check provision, classified board, poison pill, golden parachute, limitations on actions by written consent, and limitations on calling for a special meeting.

than a company's external corporate governance structure. With regard to the internal corporate governance effectiveness it is found that 80 percent of the firm-year observations have an experienced CEO, 91 percent have financial expertise in the board of directors, 92 percent have an independent audit committee, and 84 percent have an independent board of directors. However, only 48 percent of all firm-year observations are free from CEO duality. With regard to external corporate governance effectiveness it is found that 93 percent of the firm-year observations have a blank check provision, 47 percent have a classified board, 21 percent have a poison pill provision, 75 percent have a golden parachute provision, 31 percent have limitations on actions by written consent, and 46 percent have limitations on calling for a special meeting.

5.2.2 One sample t-test on mean Corporate Governance Scores

Since the implementation of SOX, corporate governance effectiveness became more important and regulation more severe. Therefore, it is expected that the corporate governance scores increase over time. In order to verify whether the corporate governance scores increased over time, a t-test is performed to compare the means of the corporate governance scores between $fyear_t$ and $fyear_{t-1}$. Table D.1 in *Appendix D* shows the results of these one-sample t-tests on the means of total corporate governance scores, internal corporate governance scores, and external corporate governance scores. Overall, these tests show a significant increase in total corporate governance scores in the period 2007-2010. After this period the total corporate governance remains constant around 7.2. For the internal corporate governance score a comparable significant increase is found for the period 2007-2011. After this period the internal corporate governance score remains constant around 4.6. With regard to external corporate governance scores, the mean score seems to remain constant around 3.1. However, the mean external corporate governance score is significantly lower in 2008 and 2015 compared to previous year. Overall, an increasing pattern in the mean of total and internal corporate governance scores is found for the period 2007-2011. Since the dataset ranges from 2007-2015, and thus misses the fiscal years directly after the implementation of SOX, there cannot be concluded that this increase is due to the implementation of SOX.

5.2.3 One sample t-test on mean level of Accounting Conservatism

For the level of conservative financial reporting over the years, a similar approach is followed. Table D.2 in *Appendix D* shows the results of the t-tests on the means of conservative financial

reporting per fiscal year. All fiscal years (except 2010) differ significantly from each other but there is no pattern visible since the level of conservative financial reporting goes up and down over the years. Most interesting is the enormous increase in the level of accounting conservatism in 2008 compared to 2007. An explanation for this enormous increase in conservative financial reporting could be the global financial crisis. However, further research is necessary to conclude what the cause is for this enormous increase in conservative financial reporting.

5.3 Multivariate Analysis

5.3.1 Testing OLS assumptions

In order to test hypothesis 1, Eq. (6) is estimated using an ordinary least squares (OLS) regression. Before using the OLS regression several statistical tests need to be performed to make sure Eq. (6) and the dataset meet certain OLS conditions. The following OLS conditions need to be met: there is random sampling, the (linear) regression model is linear in the parameters, there is no multicollinearity, there is homoscedasticity, there is no autocorrelation, and the error terms should be normally distributed. The results of these tests are included in *Appendix E*.

Since the complete dataset from WRDS is used in the sample selection process and only observations with missing data are dropped, the assumption of random sampling is met. In order to test for the linearity assumption, an augmented component-plus-residual plot on the interacted Total Corporate Governance variable is performed and included in *Appendix E* (figure E.1). This graph seem problematic at the right end but this could be due to potential influential points. Overall, this graph shows linearity and therefore meeting the linearity condition is assumed. This is verified by the same test on the Returns (see figure E.2 *Appendix E*) variable which show a linear relation. In order to test whether there is no multicollinearity, the variance inflator factors (VIF) for the independent variables in this model is calculated and included in *Appendix E* (table E.3). Most independent variables show no multicollinearity issues, however, some of them are suspicious. Since all stand-alone variables are interacted with *RET*, *NEG*, and *RET * NEG*, some of the multicollinearity can be explained by this (Chi et al., 2009). When keeping only the stand-alone variables, there is no multicollinearity issue at all (see table E.4 in *Appendix E*). A solution for the multicollinearity issues would be dropping variables with high VIF scores (above 10) but these interactions are key for the Basu model and therefore cannot be excluded. In order to test for the homoscedasticity assumption, the Breusch-Pagan/Cook-Weisberg test for heteroscedasticity is

performed. Since this test cannot be rejected there can be concluded that the model does not meet the homoscedasticity condition. To test for autocorrelation, the Breusch-Godfrey test is performed. Since this test cannot be rejected it can be concluded this has autocorrelation. To control for both heteroscedasticity and autocorrelation, Ramalingegowda and Yu's (2012) approach is followed in clustering the model on firms. In order to test for normal distribution of the error terms the Skewness/Kurtosis test is performed. Since this test shows significant results, the error terms of this regression are not normally distributed. Garcia Lara et al. (2009b) argue that this test is extremely sensitive for relatively large samples and that significant results of this test do indicate that the error terms are not normally distributed. However, they argue that the influence of this issue on the results could be limited. Garcia Lara et al. (2009b) suggest to perform a P-P plot, which graphs a standardized normal probability plot, and a Q-Q plot, which plots the quantiles of the residuals against the quantiles of the normal distribution. Both plots (see *Appendix E* figure E.3 and E.4) seem to have a normal distribution and, therefore, it is assumed that this model meets this last OLS condition.

With regard to testing hypothesis 2a and 2b, Eq. (7) is estimated using an OLS regression. For this regression model the same tests are performed for all OLS conditions as for the model used for testing hypothesis 1. These tests show comparable results as for Eq. (6) and therefore, again, this model is controlled for heteroscedasticity and autocorrelation by clustering the model on firms (see *Appendix F*). This model is also suspicious for multicollinearity since several variables have VIF scores above the benchmark. All other OLS conditions for this model are met.

5.3.2 Testing Hypothesis 1

Since all conditions of OLS are met and for the multicollinearity issues is assumed it does not have a significant impact on the results, Eq. (6) can be estimated using an OLS regression. This thesis corrects for heteroscedasticity and autocorrelation by clustering on firms (Ramalingegowda & Yu, 2012). Table 5.2, column (1) reports the estimation results in order to test hypothesis 1. For brevity, the results on the stand-alone control variables and on the two-way interactions between control variables and NEG or *RET*, and industry and fiscal year factor variables are not reported. The R-squared of this model is 0.304, indicating that 30.4 percent of the variable variation is explained by this linear model. The results show that the coefficient on $RET_{jt} * NEG_{jt}, \beta_3$, is positive (0.523) and significant (0.047), indicating that accounting conservatism occurs within the sample. Also, it

Table 5.2: The relation between conservative financial reporting and total corporate governance effectiveness

$$EARN_{jt} = \beta_0 + \beta_1 NEG_{jt} + \beta_2 RET_{jt} + \beta_3 RET_{jt} * NEG_{jt} + \beta_4 TotalCG_{jt-1} + \beta_5 NEG_{jt} * TotalCG_{jt-1} + \beta_6 RET_{jt} * TotalCG_{jt-1} + \beta_7 RET_{jt} * NEG_{jt} * TotalCG_{jt-1} + \beta_{8-13} Control_{jt-1} + \beta_{14-19} NEG_{jt} * Control_{jt-1} + \beta_{20-25} RET_{jt} * Control_{jt-1} + \beta_{26-31} RET_{jt} * NEG_{jt} * Control_{jt-1} + \beta_{32-39} Industry_{jt-1} + \beta_{40-48} fyear_{jt-1} + \mu_{jt}$$

| | Full Sample (1) | | | Sample cut on Total Corporate Governance Score | | | | | |
|---------------------------|----------------------------------|-------------|----------|------------------------------------------------|-------------|---------|----------------------------------|-------------|----------|
| | | | | High Group | | | Low Group | | |
| | Dependent variable = $EARN_{jt}$ | | | Dependent variable = $EARN_{jt}$ | | | Dependent variable = $EARN_{jt}$ | | |
| | Exp Sign | Coefficient | P-value | Exp Sign | Coefficient | P-value | Exp Sign | Coefficient | P-Value |
| NEG | | 2.718 | 0.004*** | | 3.010 | 0.091* | | 1.363 | 0.088* |
| RET | | 0.980 | 0.147 | | 0.758 | 0.223 | | 0.258 | 0.228 |
| RET*NEG | + | 0.523 | 0.047** | + | 0.886 | 0.044** | + | 0.381 | 0.026** |
| TotalCG | | 0.088 | 0.213 | | 0.009 | 0.293 | | 0.134 | 0.291 |
| RET*TotalCG | | 0.200 | 0.001*** | | -0.038 | 0.111 | | -0.439 | 0.000*** |
| NEG*TotalCG | | 0.116 | 0.114 | | 0.006 | 0.317 | | -0.062 | 0.652 |
| RET*NEG*TotalCG | + | 0.279 | 0.044** | + | 0.064 | 0.037** | + | 0.672 | 0.012** |
| Control | | Included | | | Included | | | Included | |
| NEG*Control | | Included | | | Included | | | Included | |
| RET*Control | | Included | | | Included | | | Included | |
| Industry | | Included | | | Included | | | Included | |
| Fyear | | Included | | | Included | | | Included | |
| RET*NEG*AbanOption | - | -6.304 | 0.067* | - | -3.634 | 0.091* | - | -28.562 | 0.001*** |
| RET*NEG*EarnMan | - | -8.771 | 0.039** | - | -1.630 | 0.158 | - | -11.159 | 0.012** |
| RET*NEG*Big4 | + | -0.011 | 0.977 | + | 0.454 | 0.185 | + | -0.058 | 0.906 |
| RET*NEG*Leverage | + | 0.968 | 0.209 | + | 0.335 | 0.069* | + | 1.168 | 0.244 |
| RET*NEG*FirmSize | + | 0.295 | 0.096* | + | 0.299 | 0.087* | + | -0.286 | 0.200 |
| RET*NEG*Growth | - | -1.269 | 0.093* | - | -1.262 | 0.076* | - | -1.886 | 0.094* |
| R-Squared | | 6,611 | | | 2,562 | | | 4,049 | |
| Observations | | 0.304 | | | 0.278 | | | 0.350 | |
| Clusters | | 1,165 | | | 671 | | | 954 | |

Significant at: *10% significance level **5% significance level ***1% significance level

Note: This table reports the results of estimating Eq. (6) using OLS regressions over the period 2007-2015. Stand-alone control variables and the two-way interactions between controls and NEG or RET, and the industry and fiscal year control variables are included in the estimates but are not reported for brevity. The P-values are based on standard errors adjusted for clustering on firms (Ramalingegowda & Yu, 2012). Column (1) reports the results for the full sample of firms. Column (2) reports the results for the firm-years whose total corporate governance scores are above the respective yearly median (referred to as the “High” group). Column (3) reports the results for the firm-years whose total corporate governance score is below or equal to the respective yearly median (referred to as the “Low” group).

is found that the coefficient on $RET_{jt} * NEG_{jt} * TotalCG_{jt-1}$, β_7 , is positive (0.279) and significant ($p=0.044$). Coefficient β_7 indicates that an increase of 1 in total corporate governance score causes an increase of 0.279 in asymmetric timeliness, and thus the level of accounting conservatism. This result indicates that a higher score for total corporate governance, and thus a more effective corporate governance structure, is positively related to the level of accounting conservatism, and is thus consistent with hypothesis 1.

With regard to the control variables, the results indicate that the abandonment option and earnings management are significant (0.067 and 0.039) and negatively (-6.304 and -8.771) related to the level of accounting conservatism. These results are in line with the prediction that these phenomena can take account for at least parts of the phenomenon accounting conservatism and therefore reduce the level of accounting conservatism. Since these results are significant, there can be concluded that the findings regarding the level of accounting conservatism are not biased by these phenomena. Also, the results provide evidence that a company's (sales) growth is negatively related to accounting conservatism, which is in line with the predictions made by Garcia Lara et al. (2009b). Next to that, the results provide evidence that firm size is significant (0.096) and positively (0.295) related to accounting conservatism, which is in line with the predicted sign. With regard to leverage the results show the predicted direction (0.968) but insignificant (0.209). This can be an indication that leverage is not related to the level of accounting conservatism, and thus this thesis does not concur with Ahmed and Duellman's (2007) findings. Ahmed and Duellman (2007) found a significant and positive relation between accounting conservatism and leverage. The results related to the Big4 dummy are not in line with the predicted sign (-0.011) and this coefficient is highly insignificant (0.977). These results are not in line with LaFond and Watts' (2006) findings. The insignificance of these results can also be caused by limited data availability. In addition, further research is necessary to conclude whether a company's leverage and "Big 4" is related to the level of accounting conservatism.

5.3.3 Testing Hypothesis 2a and 2b

Since all conditions of OLS are met and for the multicollinearity issues is assumed it does not have a significant impact on the results, Eq. (6) can be estimated using an OLS regression to test hypothesis 2a and 2b. The regression is corrected for heteroscedasticity and autocorrelation by clustering on firms (Ramalingegowda & Yu, 2012). Table 5.3, column (1) reports the estimation

results in order to test both hypotheses. For brevity, the results on the stand-alone control variables and on the two-way interactions between control variables and NEG or *RET*, and industry and fiscal year factor variables are not reported. The R-squared of this model is 0.305, indicating that 30.5 percent of the variable variation is explained by this linear model.

The results show that the coefficient on $RET_{jt} * NEG_{jt}$, β_3 , is positive (0.624) and significant (0.039), indicating that conservative financial reporting occurs in the firm-year observations. Also, it is found that the coefficient on $RET_{jt} * NEG_{jt} * InternalCG_{jt-1}$, β_7 , is positive (0.427) and significant (0.021). Coefficient β_7 indicates that an increase of 1 in total corporate governance score causes an increase of 0.427 in asymmetric timeliness, and thus the level of accounting conservatism. This result indicates that a higher score for internal corporate governance, and thus a more effective internal corporate governance structure, is positively related to the level of accounting conservatism. This result is consistent with hypothesis 2a.

With regard to hypothesis 2b, the relation between external corporate governance effectiveness and accounting conservatism, it is found that the coefficient on $RET_{jt} * NEG_{jt} * ExternalCG_{jt-1}$, β_{10} , is positive (0.175) and significant (0.046). Coefficient β_{11} indicates that an increase of 1 in total corporate governance score causes an increase of 0.175 in asymmetric timeliness, and thus the level of accounting conservatism. This result indicates that a higher score for total corporate governance (a more effective external corporate governance structure), is positively related to the level of conservative financial reporting, and thus is in line with hypothesis 2b.

In line with the results for hypothesis 1, the results for this model do also show that the abandonment option and earnings management are significant (0.071 and 0,025) and negatively (-6.229 and -8.286) related to the level of accounting conservatism. These results are in line with the prediction that these phenomena can take account for parts of the accounting conservatism phenomenon, and therefore reduce the level of accounting conservatism. Also, in line with previous model the results provide evidence that a company's growth is significant and negatively related to accounting conservatism. For Big4 and leverage the predicted positive sign is found, however these results are insignificant. With regard to firm size it is found that this is negatively (but insignificant) related to accounting conservatism, which is not in line with the predicted sign. With regard to the insignificant results and the coefficients with opposing signs compared to the predictions, these findings are not in line with prior research (e.g., LaFond and Watts, 2006;

Table 5.3: The relation between accounting conservatism and internal/external corporate governance effectiveness

$$EARN_{jt} = \beta_0 + \beta_1 NEG_{jt} + \beta_2 RET_{jt} + \beta_3 RET_{jt} * NEG_{jt} + \beta_4 InternalCG_{jt-1} + \beta_5 NEG_{jt} * InternalCG_{jt-1} + \beta_6 RET_{jt} * InternalCG_{jt-1} + \beta_7 RET_{jt} * NEG_{jt} * InternalCG_{jt-1} + \beta_8 ExternalCG_{jt-1} + \beta_9 NEG_{jt} * ExternalCG_{jt-1} + \beta_{10} RET_{jt} * ExternalCG_{jt-1} + \beta_{11} RET_{jt} * NEG_{jt} * ExternalCG_{jt-1} + \beta_{12-17} Control_{jt-1} + \beta_{18-23} NEG_{jt} * Control_{jt-1} + \beta_{24-29} RET_{jt} * Control_{jt-1} + \beta_{30-35} RET_{jt} * NEG_{jt} * Control_{jt-1} + \beta_{36-43} Industry_{jt-1} + \beta_{44-52} fyear_{jt-1} + \mu_{jt}$$

| | Full Sample | | | Sample cut on Internal/External Corporate Governance Score | | | | | |
|---------------------------|----------------------------------|-------------|----------|------------------------------------------------------------|-------------|----------|-----------|-------------|----------|
| | (1) | | | (2) | | | (3) | | |
| | Dependent variable = $EARN_{jt}$ | | | High Group | | | Low Group | | |
| | Exp Sign | Coefficient | P-value | Exp Sign | Coefficient | P-value | Exp Sign | Coefficient | P-Value |
| NEG | | -0.423 | 0.622 | | 0.623 | 0.705 | | 0.264 | 0.477 |
| RET | | 3.037 | 0.003*** | | 6.782 | 0.089* | | 1.349 | 0.225 |
| RET*NEG | + | 0.624 | 0.039** | + | 1.486 | 0.091* | + | 0.718 | 0.074* |
| InternalCG | | 0.206 | 0.101 | | -0.056 | 0.449 | | -0.217 | 0.198 |
| RET*InternalCG | | -0.317 | 0.035** | | -0.054 | 0.006*** | | 0.205 | 0.013** |
| NEG*InternalCG | | -0.222 | 0.038** | | 0.008 | 0.116 | | 0.263 | 0.525 |
| RET*NEG*InternalCG | + | 0.427 | 0.021** | + | 0.128 | 0.017** | + | 0.582 | 0.038** |
| ExternalCG | | 0.009 | 0.899 | | 0.128 | 0.510 | | 0.355 | 0.187 |
| RET*ExternalCG | | -0.120 | 0.034** | | -0.054 | 0.056* | | -0.613 | 0.000*** |
| NEG*ExternalCG | | -0.038 | 0.715 | | 0.008 | 0.696 | | 0.021 | 0.964 |
| RET*NEG*ExternalCG | + | 0.175 | 0.046** | + | 0.056 | 0.147 | + | 0.603 | 0.002*** |
| Control | | Included | | | Included | | | Included | |
| NEG*Control | | Included | | | Included | | | Included | |
| RET*Control | | Included | | | Included | | | Included | |
| Industry | | Included | | | Included | | | Included | |
| Fyear | | Included | | | Included | | | Included | |
| RET*NEG*AbanOption | - | -6.229 | 0.071* | - | -5.245 | 0.048** | - | -7.149 | 0.108 |
| RET*NEG*EarnMan | - | -8.286 | 0.025** | - | -1.407 | 0.153 | - | -1.617 | 0.587 |
| RET*NEG*Big4 | + | 0.009 | 0.981 | + | 0.050 | 0.924 | + | 0.444 | 0.328 |
| RET*NEG*Leverage | + | 0.954 | 0.216 | + | 2.450 | 0.150 | + | 3.018 | 0.006*** |
| RET*NEG*FirmSize | + | -0.285 | 0.105 | + | -0.412 | 0.201 | + | -0.053 | 0.869 |
| RET*NEG*Growth | - | -1.315 | 0.099* | - | -0.369 | 0.639 | - | 0.392 | 0.673 |

Note: This table reports the results of estimating Eq. (6) using OLS regressions over the period 2007-2015. Stand-alone control variables and the two-way interactions between controls and NEG or RET, and the industry and fiscal year control variables are included in the estimates but are not reported for brevity. The P-values are based on standard errors adjusted for clustering on firms (Ramalingegowda & Yu, 2012). Column (1) is clustered for 1,165 firms, column (2) for 444 firms, and column (3) for 412 firms. Column (1) reports the results for the full sample of firms. Column (2) reports the results for the firm-years whose internal corporate governance scores and external corporate governance scores are above the respective yearly median (referred to as the “High” group). Column (3) reports the results for the firm-years whose internal corporate governance score and external corporate governance scores are below or equal to the respective yearly median (referred to as the “Low” group). The R-Squared for column (1), column (2), and column (3) are 0.305, 0.302, and 0.289 respectively. Column (1) has 6,611 firm-year observations, column (2) has 1,237 firm-year observations, and column (3) has 1,266 firm-year observations. Significant at: *10% significance level **5% significance level ***1% significance level.

Ahmed and Duellman, 2007). This can be an indication that leverage, firm size and “Big4” are not related to the level of accounting conservatism, and thus this thesis does not concur with prior research’s findings. The insignificance of these results can also be caused by limited data availability. In addition, further research is necessary to conclude whether and how these variables are related to the level of accounting conservatism.

5.4 Additional Analysis

Additionally, this thesis tests whether there are differences for firms with a more effective corporate governance structure and firms with a less effective corporate governance structure. In order to test the differences between these two groups, firms with above-median (total) corporate governance scores are grouped into a “high” sub-sample to identify firms with a more effective corporate governance structure for each respective year. Firms with a corporate governance score less than or equal to the respective median per year form the “low” sub-sample. Next, Eq. (6) is estimated in a pooled regression, allowing the coefficients to vary between the high and low group.

Column (2) and (3) of table 5.2 show the results for this cross-sectional test on the relation between conservative financial reporting and corporate governance effectiveness. The results show that the coefficient on $RET_{jt} * NEG_{jt}$, β_3 , is positive and significant for the high group (0.886, p=0.044) as well as for the low group (0.381, p=0.026). These results indicate that accounting conservatism occurs more severe for firms with high corporate governance scores compared with firms with low corporate governance scores. To test whether these levels of accounting conservatism differ significantly between the two groups, a t-test is performed on the means of conservative financial reporting per group. Table 5.4 provides the results of this test, confirming that the level of conservative financial reporting is significantly higher for the high group than for the low group. Also, it is found that the coefficient on $RET_{jt} * NEG_{jt} * TotalCG_{jt-1}$, β_7 , is positive (0.064) and significant (p=0.037) for the high group, as well as for the low group (0.672, p=0.012). Again, a

Table 5.4: T-Test on differences Eq. (6) between “High” and “Low” group

| | P-Value |
|------------------------------------------------------------------------------------------|----------|
| High $RET_{jt} * NEG_{jt} =$ Low $RET_{jt} * NEG_{jt}$ | 0.002*** |
| High $RET_{jt} * NEG_{jt} * TotalCG_{jt-1} =$ Low $RET_{jt} * NEG_{jt} * TotalCG_{jt-1}$ | 0.046** |

** 5% significance level *** 1% significance level. “High” indicates the group firms with a (total) corporate governance score higher than the respective median per year and “Low” indicates the group firms with a (total) corporate governance score less than or equal to the respective median per year.

t-test is performed on the means of both coefficients to test whether these differences are significant (see table 5.4). There is a significant difference between the high and the low group found, indicating that an increase in corporate governance effectiveness in the low group results in more severe accounting conservatism compared to the high group. This is an indication that the impact of an increase in corporate governance effectiveness reduces when a company's corporate governance is more effective itself.

The same procedure is followed in testing whether there are differences between firms with a more effective internal and external corporate governance structure and firms with a less effective internal and external corporate governance structure. In order to test the differences between these two groups, firms with above-median internal and external corporate governance scores are grouped into a "high" sub-sample to identify firms with a more effective corporate governance structure for each respective year. Firms with an internal and external corporate governance score less than or equal to the respective median per year form the "low" sub-sample. Next, Eq. (7) is estimated in a pooled regression, allowing the coefficients to vary between the high and low group.

Column (2) and (3) of Table 5.3 show the results for this cross-sectional test on the relation between accounting conservatism and internal and external corporate governance effectiveness. The results show that the coefficient on $RET_{jt} * NEG_{jt}$, β_3 , is positive and significant for the high group (1.486, $p=0.091$) as well as for the low group (0.718, $p=0.074$). These results indicate that accounting conservatism occurs more severe with firms with high internal and external corporate governance scores compared to firms with low internal and external corporate governance scores. To test whether these levels of accounting conservatism differ significantly between the two groups, a t-test is performed on the means of accounting conservatism per group. Table 5.5 provides the results of this test, confirming that the level of conservative financial reporting is significantly ($p=0.000$) higher for the high group than for the low group.

Also, it is found that the coefficient on $RET_{jt} * NEG_{jt} * InternalCG_{jt-1}$, β_7 , is positive (0.128) and significant ($p=0.017$) for the high group, as well as for the low group (0.582, $p=0.038$). Again, a t-test is performed on the means of both coefficients to test whether these differences are significant (see table 5.5). The results show a significant ($p=0.040$) difference between the high and the low group, indicating that an increase in internal corporate governance effectiveness in the low group result in more severe accounting conservatism compared to the high group. This is an

indication that the impact of an increase in internal corporate governance effectiveness reduces when a company's internal corporate governance is more effective itself.

Same procedure is followed regarding the level of accounting conservatism related to external corporate governance effectiveness. The results indicate that the coefficient on $RET_{jt} * NEG_{jt} * ExternalCG_{jt-1}$, β_{11} , is positive (0.056) but insignificant ($p=0.147$) for the high group, where the low group shows a positive (0.603) and significant ($p=0.002$) coefficient. Again, a t-test is performed on the means of both coefficients to test whether the differences are significant (see table 5.5). A significant ($p=0.000$) difference between the high and low group is found, indicating that an increase in internal corporate governance effectiveness in the low group results in more accounting conservatism. The insignificance for the high group can be an indication that an increase external corporate governance effectiveness does not impact the level of accounting conservatism when the external corporate governance effectiveness is higher itself. Another explanation for this insignificant result can be limited data availability.

Table 5.5: T-Test on differences Eq. (7) between “High” and “Low” group

| | P-Value |
|------------------------------------------------------------------------------------------------|----------|
| High $RET_{jt} * NEG_{jt} =$ Low $RET_{jt} * NEG_{jt}$ | 0.000*** |
| High $RET_{jt} * NEG_{jt} * InternalCG_{jt-1} =$ Low $RET_{jt} * NEG_{jt} * InternalCG_{jt-1}$ | 0.040** |
| High $RET_{jt} * NEG_{jt} * ExternalCG_{jt-1} =$ Low $RET_{jt} * NEG_{jt} * ExternalCG_{jt-1}$ | 0.000*** |

** 5% significance level *** 1% significance level. “High” indicates the group firms with an internal and external corporate governance score higher than the respective median per year and “Low” indicates the group firms with an internal and external corporate governance score less than or equal to the respective median per year.

5.5 Robustness Check

5.5.1 Robustness Check Hypothesis 1

Despite the Basu model is most widely used to measure the level of conservative financial reporting, there is criticism on the use of this model. Dietrich et al. (2007) argue that the Basu model is biased and that inferences based on this model should not be relied upon. Dietrich et al. (2007) claim that this bias seems to be caused by the methodology used to partition the sample used and by the chosen deflator for the variables in the regression analyses. They suggest to use another measure of conservative financial reporting in order to validate the robustness of inferences drawn from the Basu model. Therefore, the model provided by Ball and Shivakumar is used to check the robustness of the results. Ball and Shivakumar (2005) provide a regression model

based on accruals and cash flows. To assess whether a more effective corporate governance structure is positively related to conservative financial reporting, and thus testing the robustness of the results regarding hypothesis 1, Eq. (2) is modified to include the index for total corporate governance, *TotalCG*, as an interaction term as follows:

$$(8) \text{ Accruals}_{jt} = \beta_0 + \beta_1 \text{DCFO}_{jt} + \beta_2 \text{CFO}_{jt} + \beta_3 \text{CFO}_{jt} * \text{DCFO}_{jt} + \beta_4 \text{TotalCG}_{jt-1} + \beta_5 \text{DCFO}_{jt} * \text{TotalCG}_{jt-1} + \beta_6 \text{CFO}_{jt} * \text{TotalCG}_{jt-1} + \beta_7 \text{CFO}_{jt} * \text{DCFO}_{jt} * \text{TotalCG}_{jt-1} + \beta_{8-13} \text{Control}_{jt-1} + \beta_{14-19} \text{DCFO}_{jt} * \text{Control}_{jt-1} + \beta_{20-25} \text{CFO}_{jt} * \text{Control}_{jt-1} + \beta_{26-31} \text{CFO}_{jt} * \text{DCFO}_{jt} * \text{Control}_{jt-1} + \beta_{32-39} \text{Industry}_{jt-1} + \beta_{40-53} \text{fyear}_{jt-1} + \mu_{jt}$$

In line with the results for hypothesis 1, it is expected to observe differences in the use of conservative financial reporting between weak and strong corporate governance structures, that is, companies with low and high values of *TotalCG*, respectively. More specifically, it is hypothesized that the asymmetric timeliness coefficient, β_3 , and *TotalCG* interaction coefficient, β_7 , turn significantly positive. Thus, the total level of conservative financial reporting ($\beta_3 + \beta_7$) of companies with more effective corporate governance is higher than that of companies with less effective corporate governance.

Appendix G shows the results regarding the tests for OLS conditions. Since all conditions of OLS are met and for the multicollinearity issues is assumed it does not have a significant impact on the results, Eq. (8) can be estimated using an OLS regression to test the robustness for the results regarding hypothesis 1. Table H.1 in *Appendix H* reports the estimation results in order to test the robustness. The R-squared of this model is 0.390, indicating that 39.0 percent of the variable variation is explained by this linear model.

The results show that the coefficient on $\text{CFO}_{jt} * \text{DCFO}_{jt}$, β_3 , is positive (0.487) and significant (0.018), indicating that conservative financial reporting occurs in the firm-year observations. Also, it is found that the coefficient on $\text{CFO}_{jt} * \text{DCFO}_{jt} * \text{TotalCG}_{jt-1}$, β_7 , is positive (0.315) and significant (0.031). This result indicates that a higher score for (total) corporate governance, and thus a more effective corporate governance structure, is positively related to the level of accounting conservatism. This result confirms the robustness of the results regarding hypothesis 1.

5.5.2 Robustness Check Hypotheses 2a and 2b

To assess whether internal and external corporate governance effectiveness is positively related to accounting conservatism, and thus the robustness of the results of hypotheses 2a and 2b, Eq. (2) is modified to include the indices for internal and external corporate governance, *InternalCG* and *ExternalCG*, as interaction terms as follows:

$$(9) \text{ Accruals}_{jt} = \beta_0 + \beta_1 \text{DCFO}_{jt} + \beta_2 \text{CFO}_{jt} + \beta_3 \text{CFO}_{jt} * \text{DCFO}_{jt} + \beta_4 \text{InternalCG}_{jt-1} \\ + \beta_5 \text{DCFO}_{jt} * \text{InternalCG}_{jt-1} + \beta_6 \text{CFO}_{jt} * \text{InternalCG}_{jt-1} + \beta_7 \text{CFO}_{jt} * \text{DCFO}_{jt} \\ * \text{InternalCG}_{jt-1} + \beta_8 \text{ExternalCG}_{jt-1} + \beta_9 \text{DCFO}_{jt} * \text{ExternalCG}_{jt-1} + \beta_{10} \text{CFO}_{jt} \\ * \text{ExternalCG}_{jt-1} + \beta_{11} \text{CFO}_{jt} * \text{DCFO}_{jt} * \text{ExternalCG}_{jt-1} + \beta_{12-17} \text{Control}_{jt-1} \\ + \beta_{18-23} \text{DCFO}_{jt} * \text{Control}_{jt-1} + \beta_{24-29} \text{CFO}_{jt} * \text{Control}_{jt-1} + \beta_{30-35} \text{CFO}_{jt} \\ * \text{DCFO}_{jt} * \text{Control}_{jt-1} + \beta_{36-43} \text{Industry}_{jt-1} + \beta_{44-57} \text{year}_{jt-1} + \mu_{jt}$$

In line with the results for hypotheses 2a and 2b, it is expected to observe differences in the use of conservative financial reporting between weak and strong internal and external corporate governance structures, that is, companies with low and high values of *InternalCG* and *ExternalCG*, respectively. More specifically, it is hypothesized that the asymmetric timeliness coefficient, β_3 , the *InternalCG* interaction coefficient, β_7 , and the *ExternalCG* interaction coefficient, β_{11} , turn significantly positive. Thus, the effectiveness of internal corporate governance and external corporate governance effectiveness is positively related to the level of conservative financial reporting.

Appendix I shows the results regarding the tests for OLS conditions. Since all conditions of OLS are met and for the multicollinearity issues is assumed it does not have a significant impact on the results, Eq. (9) can be estimated using an OLS regression to test the robustness for the results regarding hypothesis 2a and 2b. Table J.1 in *Appendix J* reports the estimation results in order to test the robustness. The R-squared of this model is 0.391, indicating that 39.1 percent of the variable variation is explained by this linear model.

The results show that coefficient on $\text{CFO}_{jt} * \text{DCFO}_{jt}$, β_3 , is positive (0.592) and significant (0.015), indicating that conservative financial reporting occurs in the firm-year observations. Also, it is found that the coefficient on $\text{CFO}_{jt} * \text{DCFO}_{jt} * \text{InternalCG}_{jt-1}$, β_7 , is positive (0.468) and significant (0.041). This result indicates that a higher score for internal corporate governance, and

thus a more effective internal corporate governance structure is positively related to accounting conservatism. This result confirms the robustness of the results regarding hypothesis 2a.

With regard to hypothesis 2b, the relation between external corporate governance effectiveness and accounting conservatism, it is found that the coefficient on $CFO_{jt} * DCF_{jt} * ExternalCG_{jt-1}, \beta_{11}$, is positive (0.191) and significant (0.012). This result indicates that a higher score for total corporate governance (a more effective external corporate governance structure), is positively related to the level of conservative financial reporting, and thus confirms the robustness of the results regarding hypothesis 2b.

5.6 Summary

This chapter provided this thesis' results. In the first paragraph several descriptive statistics are provided, which indicated that, on average and rounded, firms score 7 out of 12 in their total corporate governance score. With regard to the internal and external corporate governance score, firms score, on average and rounded, 4 and 3 out of 6. These descriptive statistics were followed by several t-tests to examine possible differences in the level of accounting conservatism and corporate governance scores between fiscal years. Overall, an increasing pattern in the mean of total and internal corporate governance scores is found for the period 2007-2011. With regard to the level of accounting conservatism, all fiscal years (except 2010) differ significantly from each other but there is no pattern visible since the level of conservative financial reporting goes up and down over the years. In the third paragraph is tested whether both models do meet the conditions of OLS. Both models are suspicious for multicollinearity since several variables have VIF scores above the benchmark. All other OLS conditions for this model are assumed to be met.

This is followed by the multivariate analysis paragraph where the hypotheses were tested estimating both models using an OLS regression. For both models significant results are found that indicate accounting conservatism occurs within the sample. Also, the results indicate that a higher score for total corporate governance, and thus a more effective corporate governance structure, is positively related to the level of accounting conservatism, and is thus consistent with hypothesis 1. With regard to hypothesis 2a, significant results are found that provide evidence that a higher score for internal corporate governance, and thus a more effective corporate governance structure, is positively relate to the level of conservative financial reporting. These results are in line with hypothesis 2a. With regard to hypothesis 2b, significant results are found that provide

evidence that a higher score for external corporate governance, and thus a more effective external corporate governance structure, is positively related to the level of accounting conservatism. These results confirm hypothesis 2b. In line with the recommendations by Ryan (2006), the robustness of the results are tested using Ball and Shivakumar's (2005) model based on accruals and cash flows. Using this model, the results' robustness are confirmed since all results of these regressions are in line with the results using the Basu model.

Additionally, this thesis also tested whether there are differences between groups of firms with higher corporate governance scores and low corporate governance scores. The results provide an indication that the impact of an increase in corporate governance effectiveness reduces when a company's corporate governance is more effective itself. Comparable results are found regarding the internal corporate governance scores. With regard to the external corporate governance scores no significant results are found that indicate significant differences between groups with high and low external corporate governance effectiveness.

6. Conclusion

6.1 Summary and Main Findings

This thesis aims to contribute to existing literature by examining whether corporate governance can be seen as an explanation for accounting conservatism. Accounting conservatism is defined as the adage “anticipate no profit, but anticipate all losses”. This adage is interpreted as representing the company’s tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses. Watts (2003a) argues that corporate governance can be seen as another explanation for accounting conservatism, besides the most widely examined contracting and shareholder litigation explanations. In existing literature, two contradicting perspectives can be identified on the relation between accounting conservatism and corporate governance: the substitutive and complementary perspective. The substitutive perspective addresses that conservative financial reporting can be seen as a vehicle that reduces uncertainty and information asymmetry, so it is expected that companies with a less effective corporate governance structure result in a higher contracting demand for accounting conservatism. Therefore, a negative relation between corporate governance effectiveness is expected. From the complementary perspective an effective corporate governance structure favours the implementation of conservative financial reporting, and therefore a positive relation between corporate governance effectiveness and accounting conservatism is expected.

Prior research examine corporate governance effectiveness using board of director’s characteristics, which indicate only the internal part of corporate governance. The external part of corporate governance have been neglected by prior academics in investigating the relation between corporate governance and accounting conservatism. Although, Garcia Lara et al. (2009) do take the external part into account. However, this research is based on a timeframe before the implementation of SOX, and therefore seems to be outdated. In order to discriminate among aforementioned perspectives, this thesis contributes to existing literature by taking corporate governance effectiveness as a whole, internal corporate governance effectiveness, and external corporate governance effectiveness into account. In order to measure the effectiveness of corporate governance, Gompers et al.’s (2003) approach is followed by forming corporate governance indices. A higher value for these indices indicate more effective corporate governance structures. In order to test the relation between corporate governance effectiveness and accounting

conservatism, the Basu model is used which regresses earnings on returns and where the interaction effect between returns and a dummy variable that indicate negative returns is an indication for the asymmetric verification of gains and losses, and therefore can be used as an indicator for conservative financial reporting. Another important contribution is that control variables for earnings management and the abandonment option are included. In existing literature both are seen as phenomena that could explain for some of the asymmetric verification that is supposed to be caused by the accounting conservatism phenomenon.

The results of this thesis provide evidence that accounting conservatism occurs. Next to that, an increasing pattern in corporate governance effectiveness can be identified. With regard to the relation between corporate governance effectiveness and accounting conservatism, it is found that these are significant and positively related. With regard to internal and external corporate governance effectiveness, it is found that both are also individually significant and positively related to the level of accounting conservatism. Therefore, all findings are in line with this thesis' hypotheses. Since the same regression analysis is performed using the model provided by Ball and Shivakumar (2005) and these showed comparable results, it is assumed that the results are robust. Additionally, this thesis also tested whether there are differences between groups of firms with higher corporate governance scores and low corporate governance scores. The results provide an indication that the impact of an increase in corporate governance effectiveness reduces when a company's corporate governance is more effective itself. Comparable results are found regarding the internal corporate governance scores. However, there are no significant differences with regard to external corporate governance effectiveness.

6.2 Conclusions

Previous paragraph provided an overview of this thesis' content and enables to provide an answer to the research question: *“Does a more effective corporate governance structure lead to more conservative financial reporting?”*. Overall, the results indicate that corporate governance effectiveness and accounting conservatism are positively related. Therefore, a more effective corporate governance structure does lead to more conservative financial reporting. More specifically, corporate governance effectiveness as a whole, internal corporate governance, and external corporate governance do all lead to more conservative financial reporting when more effective. Based on these results there can also be concluded that corporate governance

effectiveness can be seen as another explanation for accounting conservatism. Additionally, evidence is provided that the weaker a corporate governance structure is, a bigger impact of an increase in corporate governance effectiveness on the level of accounting conservatism is found. Comparable results for internal corporate governance are found. However, there are no significant differences for external corporate governance between “weaker” and “stronger” structures. These results are applicable for companies in the United States as well as for companies in countries with corporate governance regulations comparable with these in the United States.

These results have implications for equity shareholders and investors since these results enable them to identify whether a company’s corporate governance structure leads to more conservative financial reporting. Other stakeholders also benefit from these results since this provides them an additional tool to verify the reliability of the financial information presented in a company’s financial statements. These results are also relevant for regulators and standard-setters since they tend to favour neutrality in financial reporting. Based on the results they could possibly provide additional regulations for corporate governance in order to remain neutrality in financial reporting. In addition, the increase in corporate governance effectiveness indicates that the implementation of SOX did have a significant positive impact on the overall corporate governance effectiveness in the United States. Countries without certain governance regulations can take advantage of these results and implement comparable regulations in order to increase corporate governance effectiveness.

6.3 Limitations

Since this thesis is limited to the ISS database regarding corporate governance information, it does not contain data for the period directly after the implementation of SOX. Therefore, the increase of corporate governance effectiveness in the period 2007-2011 can also be caused by some other factors than the implementation of SOX. This data limitation can also be an explanation for the insignificant results regarding several control variables. Another limitation is the external validity since it is only generalizable to US companies or companies in countries with comparable governance regulations. Major problems regarding the models are the multicollinearity issues for several variables included. These multicollinearity issues are probably caused by the implementation of interaction effects in the regression. Since these variables are key for identification of accounting conservatism, these cannot be excluded.

Another important limitation of this research is the application of only several anti-takeover defences and board of directors' characteristics. Again, due to limited data availability no other anti-takeover defences and board of director characteristics can be included in the corporate governance indices. Only the most important and widely used proxies are included. However, companies could prefer investing in other board of director characteristics or anti-takeover defences which are not taken into account in this thesis. Therefore, the indices might not reflect a company's real corporate governance effectiveness. Also, this thesis provides general evidence that total, internal, and external corporate governance effectiveness are positively related to accounting conservatism but it does not indicate which individual characteristics of corporate governance take account for this positive relation. Lastly, this thesis defines accounting conservatism to be conditional conservatism based on Basu's treatment. Therefore, this thesis' findings cannot be applied to unconditional conservatism.

6.4 Suggestions for Further Research

In this thesis the relation between accounting conservatism and corporate governance effectiveness is examined for US companies. Therefore, the results are only applicable for US companies and for companies with comparable regulations regarding corporate governance. A suggestion for further research, therefore, would be investigating this relation in a wider setting in order to make the results more generalizable (e.g., including European and/or Asian companies in the dataset). In addition, it might be interesting to find a non-US setting where regulations comparable to SOX are implemented to examine whether these implemented regulations have a comparable impact on the level of accounting conservatism and corporate governance effectiveness.

Another suggestion for further research would be examining whether there are other ways to investigate the level of accounting conservatism since the use of the Basu model is still criticized and the model provided by Ball and Shivakumar is also not without flaws. Especially, since this thesis' model has to deal with multicollinearity issues, the model can be improved. Also, it might be interesting to examine how accounting conservatism and corporate governance are related to each other directly after the implementation of SOX since this radically changed corporate governance structures. This thesis examines the period 2007-2015 and therefore it does not examine this relation directly after the implementation of SOX. This is caused by a data availability limitation. It might also be interesting to investigate how exogenous shocks (e.g., recent financial

crisis) have impacted the relation between corporate governance and accounting conservatism. The results regarding leverage, firm size, and the “Big 4” dummy showed insignificant results. These results do not concur with prior research’s findings, and therefore, might be an interesting suggestion for further research.

In this thesis conditional conservatism is used to examine the relation between accounting conservatism and corporate governance. For future research it might be interesting to examine how unconditional conservatism, which is news-independent and can be found in a company’s balance sheet, is related to corporate governance. Another suggestion for further research would be to examine which specific board of directors’ characteristics and/or anti-takeover provisions drive the level of accounting conservatism. This thesis focuses on the “total” level of internal/external corporate governance and how this is related to conservative financial reporting. It might be interesting to examine which elements drive the level of accounting conservatism so investors can better judge the reliability of a company’s financial information. Lastly, this thesis uses a selected number of board of directors’ characteristics and anti-takeover provisions based on prior research and data availability. However, more board of directors’ characteristics and anti-takeover provisions can be included in the corporate governance indices to provide a more complete view on the effectiveness of corporate governance effectiveness. Companies can prefer investing in other characteristics or provisions to increase their corporate governance effectiveness.

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Appendix A: Variable Description Corporate Governance Indices

Measuring External Corporate Governance Index:

$$ECG\ Index = Blankcheck + CBoard + PPill + GParachute + LWCNST + LSPMT$$

- **ECG Index:** External Corporate Governance index which indicates how effective a company's corporate governance structure is. This is derived from Gompers et al. (2003) who developed an anti-takeover index which can be interpreted as how good or bad a company is protected against takeovers. This index has a score ranging from 0 to 6, where higher values of this index refer to higher anti-takeover protection, and can be interpreted as higher external corporate governance effectiveness (Cremers and Nair, 2005).
- **Blankcheck:** Dummy variable which equals 1 if a company has taken the blankcheck preferred stock anti-takeover protection provision, and 0 otherwise.
- **CBoard:** Dummy variable which equals 1 if a company has a classified board, and 0 otherwise.
- **PPill:** Dummy variable which equals 1 if a company has taken the poison pill provision against takeovers, and 0 otherwise.
- **GParachute:** Dummy variable which equals 1 if a company has taken the golden parachute provision against takeovers, and 0 otherwise.
- **LWCNST:** Dummy variable which equals 1 if a company does have limitations on actions by written consent, and 0 otherwise.
- **LSPMT:** Dummy variable which equals 1 if a company does have limitations on calling for a special meeting, and 0 otherwise.

Measuring Internal Corporate Governance Index:

$$ICG\ Index = CEOExp + CEODual + Independence + AudComIndependence \\ + FinExpertise + ActiveBoard$$

- **ICG Index:** Internal Corporate Governance index which indicates how effective a company's internal corporate governance structure is. This is derived from Gompers et al. (2003) who developed a governance index which can be interpreted as a measure for corporate governance effectiveness. This index has a score ranging from 0 to 6, where

higher values of this index refer to higher internal corporate governance effectiveness (Cremers and Nair, 2005).

- **CEOExp:** Dummy variable which equals 1 if a company has a CEO in its board of directors that is older than 52 years old, indicating that the company has an experienced CEO, and 0 otherwise.
- **CEODual:** Dummy variable which equals 1 if a company does not suffer under CEO duality, implying that a CEO is not also the chairman of the board, and 0 otherwise.
- **Independence:** Dummy variable which equals 1 if a company does have at least 80 percent of its directors from outside the company, indicating an independent board of directors, and 0 otherwise.
- **AudComIndependence:** Dummy variable which equals 1 if a company does have an independent audit committee, and 0 otherwise. More specifically, the CEO is not involved in the audit committee.
- **FinExpertise:** Dummy variable which equals 1 if a company does have financial expertise in its board of directors, and 0 otherwise.
- **ActiveBoard:** Dummy variable which equals 1 if a company's directors do attend all more than 75 percent of the total board meetings, and 0 otherwise. All directors attending more than 75 percent of the board meetings indicate an active board of directors.

Measuring Total Corporate Governance Index:

$$TCG\ Index = ICG\ Index\ Score + ECG\ Index\ Score$$

- **TCG Index:** Total Corporate Governance index which indicates how effective a company's Total corporate governance structure is. This is derived from Gompers et al. (2003) who developed a governance index which can be interpreted as a measure for corporate governance effectiveness. This index has a score ranging from 0 to 12, where higher values of this index refer to higher internal corporate governance effectiveness (Cremers and Nair, 2005).
- **ICG Index Score:** Internal Corporate Governance index which indicates how effective a company's internal corporate governance structure is.
- **ECG Index Score:** External Corporate Governance index which indicates how effective a company's external corporate governance structure is.

Appendix B: Predictive Validity Framework Internal, External and Total Corporate Governance Effectiveness

Figure B.1: Predictive Validity Framework Total Corporate Governance Effectiveness

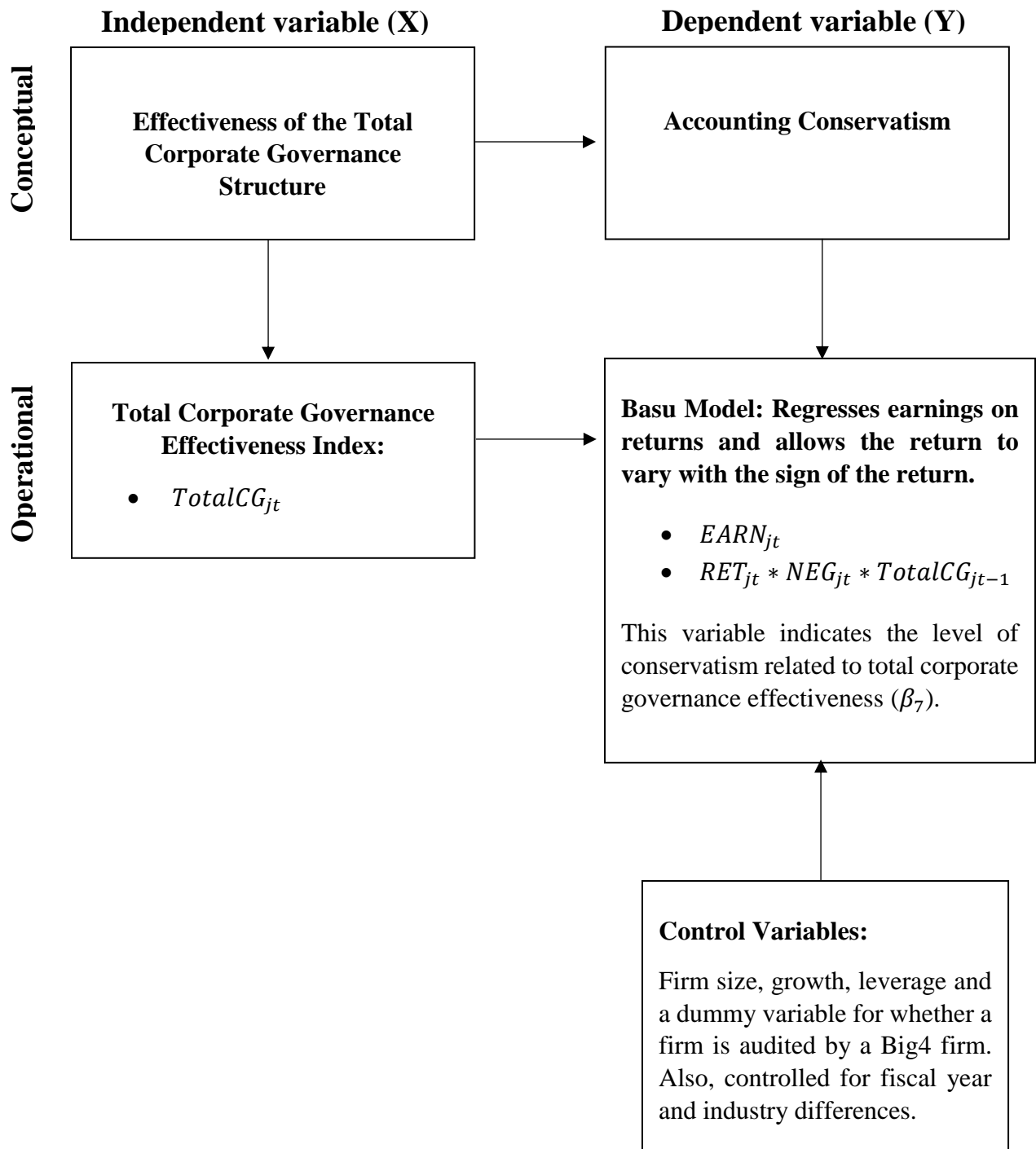


Figure B.2: Predictive Validity Framework Internal Corporate Governance Effectiveness

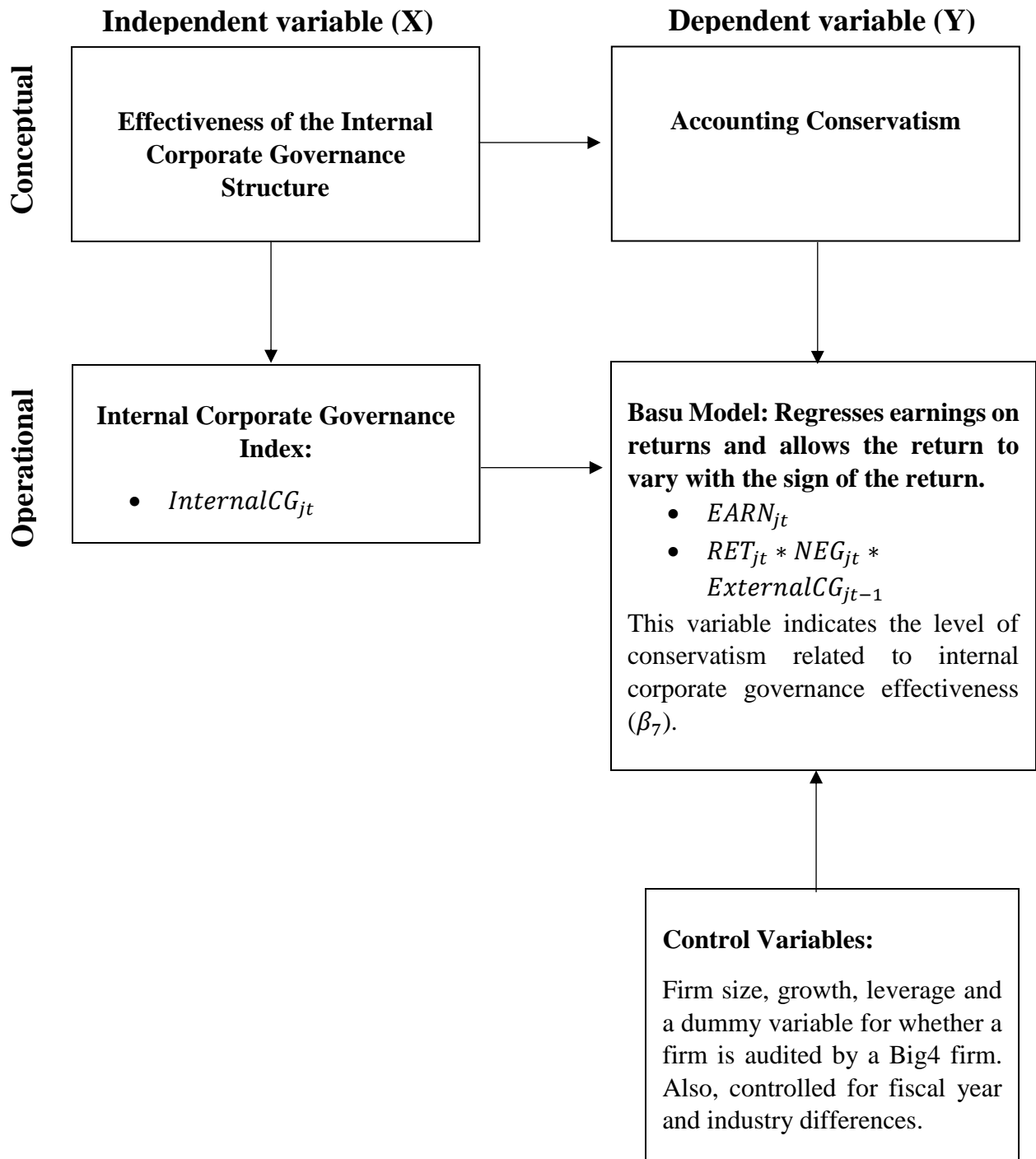
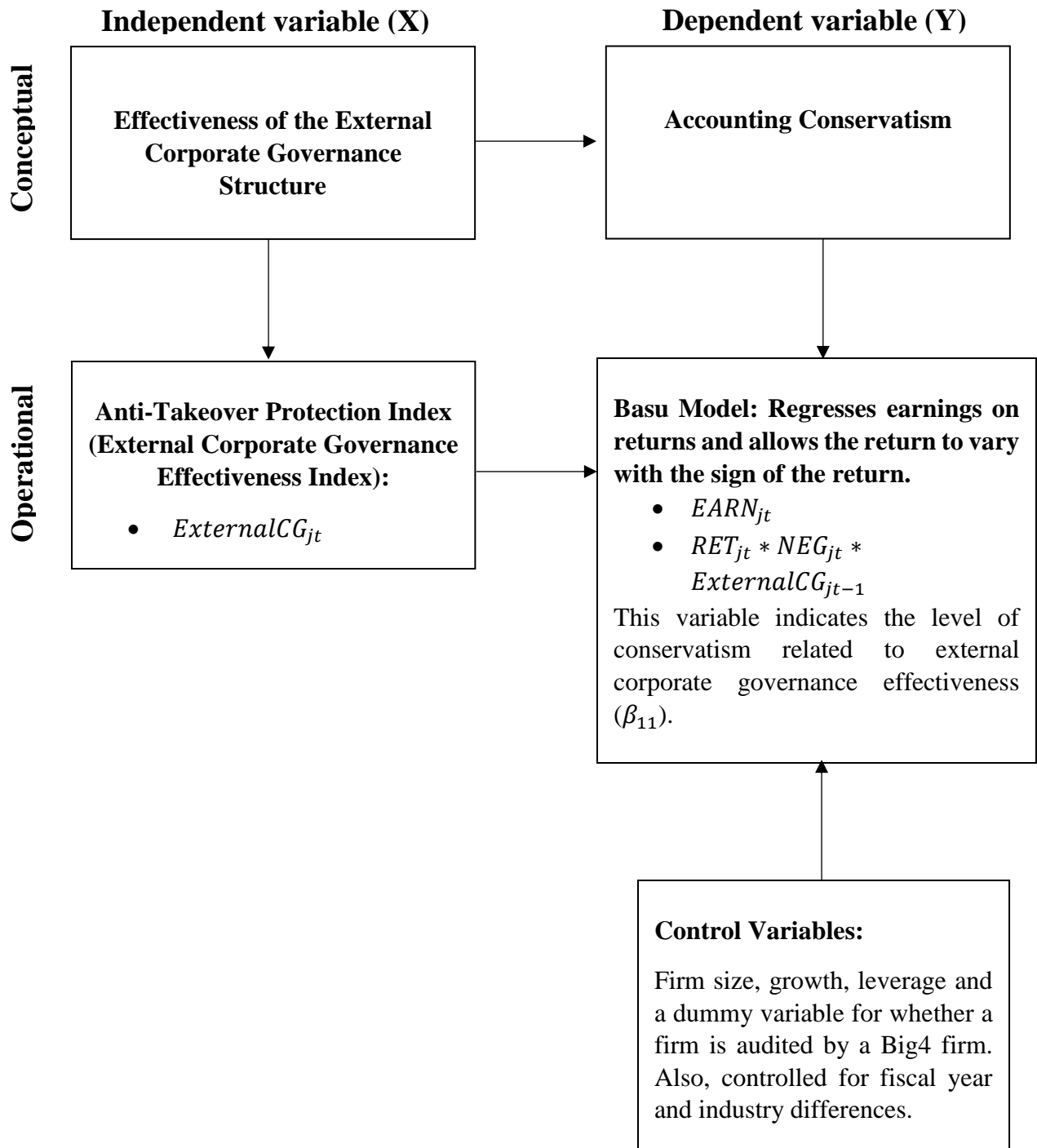


Figure B.3: Predictive Validity Framework External Corporate Governance Effectiveness



Appendix C: Variable Description Regression Analyses

Model for testing hypothesis 1:

$$(6) EARN_{jt} = \beta_0 + \beta_1 NEG_{jt} + \beta_2 RET_{jt} + \beta_3 RET_{jt} * NEG_{jt} + \beta_4 TotalCG_{jt-1} + \beta_5 NEG_{jt} * TotalCG_{jt-1} + \beta_6 RET_{jt} * TotalCG_{jt-1} + \beta_7 RET_{jt} * NEG_{jt} * TotalCG_{jt-1} + \beta_{8-13} Control_{jt-1} + \beta_{14-19} NEG_{jt} * Control_{jt-1} + \beta_{20-25} RET_{jt} * Control_{jt-1} + \beta_{26-31} RET_{jt} * NEG_{jt} * Control_{jt-1} + \beta_{32-39} Industry_{jt-1} + \beta_{40-48} fyear_{jt-1}$$

Model for testing hypothesis 2a and hypothesis 2b

$$(7) EARN_{jt} = \beta_0 + \beta_1 NEG_{jt} + \beta_2 RET_{jt} + \beta_3 RET_{jt} * NEG_{jt} + \beta_4 InternalCG_{jt-1} + \beta_5 NEG_{jt} * InternalCG_{jt-1} + \beta_6 RET_{jt} * InternalCG_{jt-1} + \beta_7 RET_{jt} * NEG_{jt} * InternalCG_{jt-1} + \beta_8 ExternalCG_{jt-1} + \beta_9 NEG_{jt} * ExternalCG_{jt-1} + \beta_{10} RET_{jt} * ExternalCG_{jt-1} + \beta_{11} RET_{jt} * NEG_{jt} * ExternalCG_{jt-1} + \beta_{12-17} Control_{jt-1} + \beta_{18-23} NEG_{jt} * Control_{jt-1} + \beta_{24-29} RET_{jt} * Control_{jt-1} + \beta_{30-35} RET_{jt} * NEG_{jt} * Control_{jt-1} + \beta_{36-43} Industry_{jt-1} + \beta_{44-52} fyear_{jt-1}$$

Variable description:

- **NEG:** This is a dummy variable which equals one when there is negative or zero returns (indicating bad news) and zero when there is positive returns (indicating good news).
- **RET:** Variable that indicates the stock rate of return of the company, measured by compounding 12 monthly stock returns ending the last day of the fiscal year
- **TotalCG:** Total Corporate Governance index which indicates how effective a company's (total) corporate governance structure is. This is derived from Gompers et al. (2003) who developed a governance index which can be interpreted as a measure for corporate governance effectiveness. This index has a score ranging from 0 to 12, where higher values of this index refer to higher internal corporate governance effectiveness (Cremers and Nair, 2005).
- **InternalCG:** Internal Corporate Governance index which indicates how effective a company's internal corporate governance structure is. This is derived from Gompers et al. (2003) who developed a governance index which can be interpreted as a measure for corporate governance effectiveness. This index has a score ranging from 0 to 6, where higher values of this index refer to higher internal corporate governance effectiveness (Cremers and Nair, 2005).
- **ExternalCG:** External Corporate Governance index which indicates how effective a company's external corporate governance structure is. This is derived from Gompers et al.

(2003) who developed an anti-takeover index which can be interpreted as how good or bad a company is protected against takeovers. This index has a score ranging from 0 to 6, where higher values of this index refer to higher anti-takeover protection, and can be interpreted as higher external corporate governance effectiveness (Cremers and Nair, 2005).

- **Industry:** Factor variable that equals 1 if a company is part of a certain industry. This factor variable is included to control for differences between certain industries. All companies are divided into 9 industries, where the first industry is marked as the reference point.
- **Fyear:** Factor variable that equals 1 if an observation is specified to a specific fiscal year. This factor variable is included to control for differences between several fiscal years. The fiscal years 2007 up and including 2015 are included, where 2007 is marked as the reference point.
- **Control:** These are control variables included in the model. The following control variables are included:
 - **Leverage:** This variable controls for a company's leverage. Leverage is operationalized by the sum of long-term debt and total current liabilities divided by a company's total assets.
 - **FirmSize:** This variable controls for a company's firm size. Firm size is operationalized as the natural logarithm of a company's total assets.
 - **Growth:** This variable controls for a company's growth. Growth is operationalized as the percentage of sales growth.
 - **Big4:** This variable controls for the influence of companies audited by one of the big 4 auditors; KPMG, Ernst & Young, PwC, and Deloitte respectively. This is operationalized by using a dummy variable which equals 1 in case a company is audited by a big 4 company, and 0 otherwise.
 - **AbanOption:** This variable controls for the influence of the execution of an abandonment option. To control for the abandonment option, a dummy variable is included which equals 1 if a company executed the abandonment option in fiscal year t, and 0 otherwise.
 - **EarnMan:** This variable controls for the influence of earnings management. In order to control for earnings management, (discretionary) accruals are estimated following the modified Jones model.

Appendix D: T-Tests on mean Corporate Governance Scores and the Level of Accounting Conservatism per Fiscal Year

Table D.1: Corporate Governance Scores per Fiscal Year

| | Total Corporate Governance (1) | | | Internal Corporate Governance (2) | | | External Corporate Governance (3) | | |
|-------------|-----------------------------------|------------|----------|--------------------------------------|------------|----------|--------------------------------------|------------|----------|
| | Mean | Difference | P-value | Mean | Difference | P-value | Mean | Difference | P-value |
| 2007 | 5.964 | - | - | 2.827 | - | - | 3.138 | - | - |
| 2008 | 6.559 | 0.595 | 0.000*** | 3.701 | 0.874 | 0.000*** | 2.858 | -0.279 | 0.000*** |
| 2009 | 6.954 | 0.395 | 0.000*** | 3.732 | 0.031 | 0.223 | 3.223 | 0.364 | 0.000*** |
| 2010 | 7.010 | 0.056 | 0.184 | 3.811 | 0.080 | 0.013** | 3.199 | -0.024 | 0.309 |
| 2011 | 7.278 | 0.268 | 0.000*** | 4.092 | 0.281 | 0.000*** | 3.186 | -0.013 | 0.391 |
| 2012 | 7.219 | -0.059 | 0.151 | 4.101 | 0.008 | 0.397 | 3.119 | -0.067 | 0.069* |
| 2013 | 7.198 | -0.021 | 0.350 | 4.104 | 0.003 | 0.464 | 3.094 | -0.024 | 0.286 |
| 2014 | 7.210 | 0.013 | 0.409 | 4.162 | 0.058 | 0.036** | 3.049 | -0.045 | 0.140 |
| 2015 | 7.148 | -0.062 | 0.134 | 4.183 | 0.021 | 0.264 | 2.966 | -0.083 | 0.028** |

Note: This shows the results of a t-test on the differences in corporate governance scores per fiscal year. Difference indicates the difference compared to previous year. Column (1) provides the results on total corporate governance scores, column (2) provides the results on internal corporate governance scores, and column (3) provides the results of external corporate governance scores. Significant at: *10% significance level **5% significance level ***1% significance level.

Table D.2: The level of Conservative Financial Reporting per Fiscal Year

| | Total Conservative Financial Reporting | | |
|-------------|----------------------------------------|------------|----------|
| | Mean | Difference | P-value |
| 2007 | 0.237 | - | - |
| 2008 | 0.806 | 0.568 | 0.000*** |
| 2009 | 0.029 | -0.776 | 0.000*** |
| 2010 | 0.036 | 0.007 | 0.271 |
| 2011 | 0.248 | 0.212 | 0.000*** |
| 2012 | 0.090 | -0.158 | 0.000*** |
| 2013 | 0.023 | -0.067 | 0.000*** |
| 2014 | 0.186 | 0.163 | 0.000*** |
| 2015 | 0.285 | 0.099 | 0.004*** |

Note: This table provides the results of a t-test on differences in the level of accounting conservatism per fiscal year. Difference indicates the difference compared to previous year. Significant at: *10% significance level **5% significance level ***1% significance level.

Appendix E: Testing OLS Assumptions (Hypothesis 1)

Testing for Linearity:

Figure E.1: Augmented component-plus-residual plot on the interacted Total Corporate Governance variable Eq. (6)

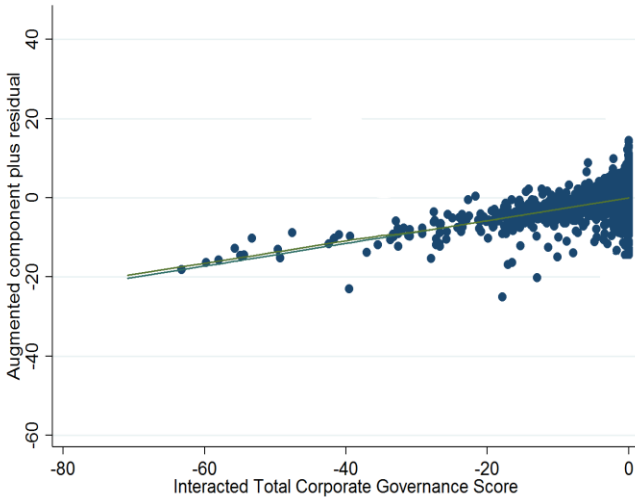
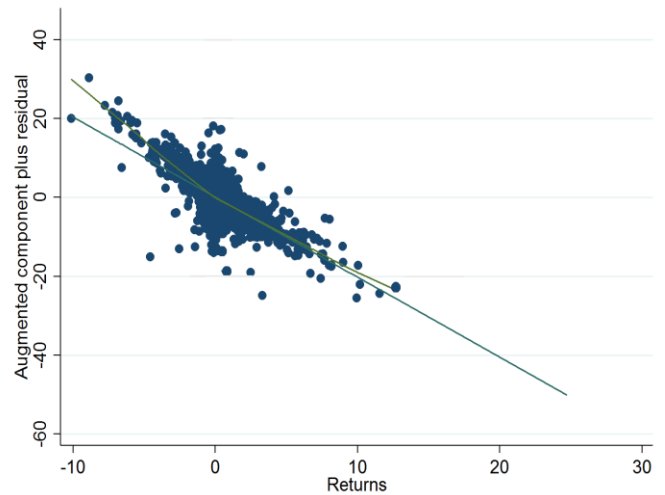


Figure E.2: Augmented component-plus-residual plot on Returns Eq. (6)



Note: Figure E.1 shows a plot of the augmented component-plus-residual on the interacted (with RET and NEG) Total Corporate Governance Score. Figure E.2 shows a plot of the augmented component-plus-residual on Returns. Both graphs show a linear relationship. Therefore, meeting the linearity assumption of OLS regressions is assumed.

Testing for Homoscedasticity:

Table E.1: Breusch-Pagan/Cook-Weisberg test for Heteroscedasticity Eq. (6)

| | |
|------------|----------|
| Chi-Square | 615.39 |
| P-value | 0.000*** |

*** Significant at a 1% significance level

Note: The Breusch-Pagan/Cook-Weisberg test for heteroscedasticity tests whether a model is heteroscedastic (H0). Since this test shows significant results this model does not meet the homoscedasticity condition. To control for this issue (combined with the autocorrelation issue) the model is clustered for firms, resulting in 1,165 clusters.

Testing for Autocorrelation:

Table E.2: Breusch-Godfrey LM test for Autocorrelation Eq. (6)

| | |
|-------------|-----------|
| Chi-Squared | 1,391.028 |
| P-value | 0.000*** |

*** Significant at a 1% significance level

Note: The Breusch-Godfrey LM test tests for autocorrelation (H0). Since this test shows significant results this model does not meet the no autocorrelation condition. To control for this issue (combined with the heteroscedasticity issue) the model is clustered for firms, resulting in 1,165 clusters.

Testing for Multicollinearity:

Table E.3: VIF test for multicollinearity on Eq. (6)

| Variable | VIF Score |
|------------------------|---------------|
| NEG | 93.97* |
| RET | 165.73* |
| RET*NEG | 151.42* |
| TotalCG | 2.27 |
| NEG * TotalCG | 40.85* |
| RET * TotalCG | 48.58* |
| RET * NEG * TotalCG | 44.46* |
| AbanOption | 1.87 |
| RET * AbanOption | 1.48 |
| NEG * AbanOption | 2.93 |
| RET * NEG * AbanOption | 2.69 |
| EarnMan | 2.21 |
| RET * EarnMan | 2.03 |
| NEG * EarnMan | 2.61 |
| RET * NEG * EarnMan | 2.38 |
| Big4 | 3.25 |
| RET * Big4 | 17.18* |
| NEG * Big4 | 25.84* |
| RET * NEG * Big4 | 12.69* |
| Leverage | 2.39 |
| RET * Leverage | 5.52 |
| NEG * Leverage | 4.31 |
| RET * NEG * Leverage | 5.29 |
| FirmSize | 2.42 |
| RET * FirmSize | 129.71* |
| NEG * FirmSize | 43.42* |
| RET * NEG * FirmSize | 113.76* |
| Growth | 1.81 |
| RET * Growth | 1.97 |
| NEG * Growth | 2.03 |
| RET * NEG * Growth | 2.12 |
| Mean VIF Score | 20.84* |

Table E.4: VIF test for multicollinearity on stand-alone variables Eq. (6)

| Variable | VIF Score |
|-----------------------|-------------|
| NEG | 1.68 |
| RET | 2.26 |
| RET * NEG | 2.19 |
| TotalCG | 1.12 |
| AbanOption | 1.16 |
| EarnMan | 1.01 |
| Big4 | 1.12 |
| Growth | 1.24 |
| Leverage | 1.59 |
| FirmSize | 1.11 |
| Mean VIF Score | 2.10 |

Note: *Above Benchmark (VIF Score 10) and therefore suspicious for multicollinearity. In table E.4 only the stand-alone variables are taken into account and these show no multicollinearity issues. Since the interactions of the stand-alone variables with RET, NEG, and RET*NEG are key for the Basu model they cannot be excluded. Chi et al. (2009) argue that some of the multicollinearity issues are due to the interactions included in the Basu model.

Testing for a normal distribution of the error terms:

Table E.5: Skewness/Kurtosis test for Normality Eq. (6)

| | |
|------------------------|----------|
| <i>Observations</i> | 6,611 |
| <i>Pr (Skewness)</i> | 0.024 |
| <i>Pr (Kurtosis)</i> | 0.000 |
| <i>Chi-Squared</i> | 364.39 |
| <i>P-value (Joint)</i> | 0.000*** |

*** Significant at a 1% significance level

Note: The Skewness/Kurtosis test tests whether the error terms are not normally distributed (H0). Since this test shows significant results, there can be concluded that the standard errors are not normally distributed. Garcia Lara et al. (2009b) argue that this test is extremely sensitive for relatively large samples and that significant results of this test do indicate that the error terms are not normally distributed but that the influence of this issue on the results could be limited. Garcia Lara et al. (2009b) suggest to perform a P-P plot, which graphs a standardized normal probability plot, and a Q-Q plot, which plots the quantiles of the residuals against the quantiles of the normal distribution.

Figure E.3: P-P Plot Error Terms Eq. (6)

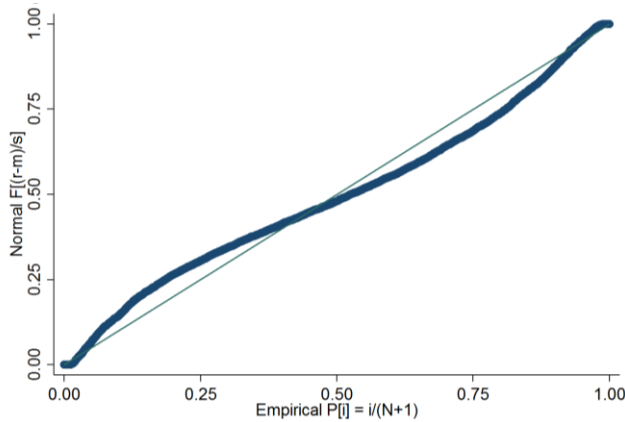
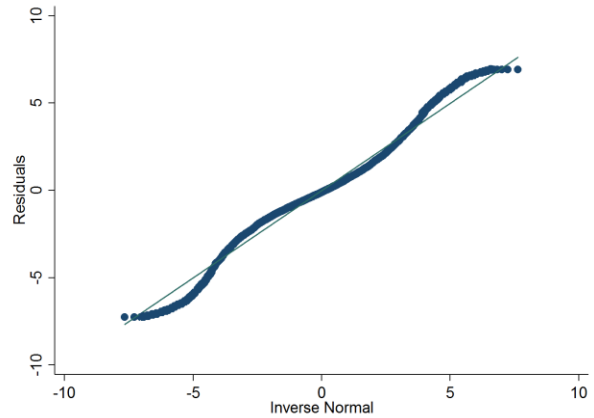


Figure E.4: Q-Q Plot Error Terms Eq. (6)



Note: Figure E.3 shows a P-P plot of the error terms, while figure E.4 shows a Q-Q plot of the error terms. Both plots seem to have a normal distribution and, therefore, it is assumed that this model meets the normal distribution of the error terms condition of OLS.

Appendix F: Testing OLS Assumptions (Hypotheses 2a and 2b)

Testing for Linearity:

Figure F.1: Augmented component-plus-residual plot on the interacted Internal Corporate Governance variable Eq. (7)

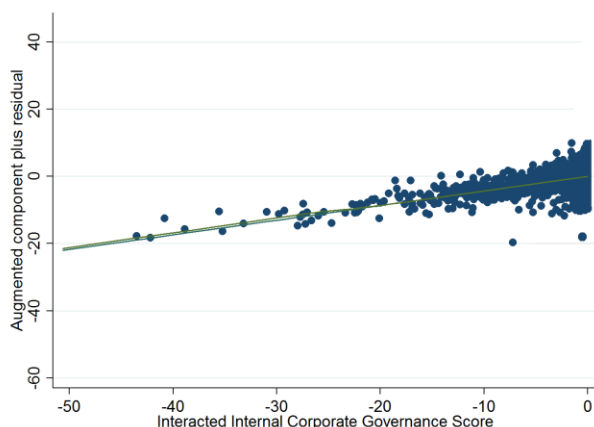
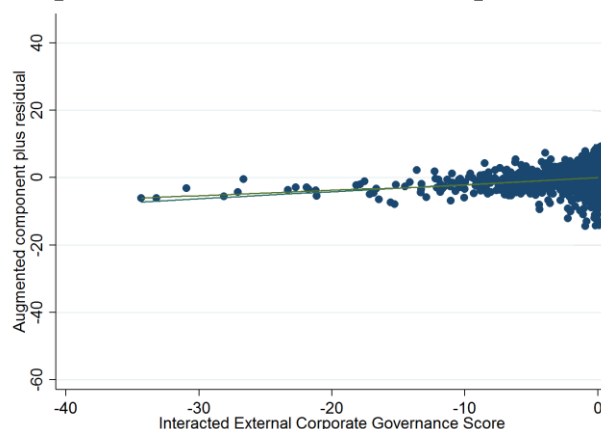


Figure F.2: Augmented component-plus-residual plot on the interacted External Corporate Governance variable Eq. (7)



Note: Figure F.1 shows a plot of the augmented component-plus-residual on the interacted (with RET and NEG) Internal Corporate Governance Score. Figure F.2 shows a plot of the augmented component-plus-residual on the interacted External Corporate Governance Score. Both graphs show a linear relationship. Therefore, meeting the linearity assumption of OLS regressions is assumed.

Testing for Homoscedasticity:

Table F.1: Breusch-Pagan/Cook-Weisberg test for Heteroscedasticity Eq. (7)

| | |
|-------------------|----------|
| <i>Chi-Square</i> | 487.48 |
| <i>P-value</i> | 0.000*** |

*** Significant at a 1% significance level

Note: The Breusch-Pagan/Cook-Weisberg test for heteroscedasticity tests whether a model is heteroscedastic (H0). Since this test shows significant results this model does not meet the homoscedasticity condition. To control for this issue (combined with the autocorrelation issue) the model is clustered for firms, resulting in 1,165 clusters.

Testing for Autocorrelation:

Table F.2: Breusch-Godfrey LM test for Autocorrelation Eq. (7)

| | |
|--------------------|-----------|
| <i>Chi-Squared</i> | 1,406.749 |
| <i>P-value</i> | 0.000*** |

*** Significant at a 1% significance level

Note: The Breusch-Godfrey LM test tests for autocorrelation (H0). Since this test shows significant results this model does not meet the no autocorrelation condition. To control for this issue (combined with the heteroscedasticity issue) the model is clustered for firms, resulting in 1,165 clusters.

Testing for Multicollinearity:

Table F.3: VIF test for multicollinearity on Eq. (7)

| Variable | VIF Score |
|------------------------|----------------|
| NEG | 111.96 * |
| RET | 199.06 * |
| RET * NEG | 179.90 * |
| ExternalCG | 2.19 |
| NEG * ExternalCG | 15.88 * |
| RET * ExternalCG | 20.05 * |
| RET * NEG * ExternalCG | 17.79 * |
| InternalCG | 2.45 |
| NEG * InternalCG | 49.86 * |
| RET * InternalCG | 64.37 * |
| RET * NEG * InternalCG | 61.27 * |
| AbanOption | 1.88 |
| RET * AbanOption | 1.48 |
| NEG * AbanOption | 2.93 |
| RET * NEG * AbanOption | 2.69 |
| Big4 | 3.26 |
| RET * Big4 | 17.28 * |
| NEG * Big4 | 25.89 * |
| RET * NEG * Big4 | 12.82 * |
| Leverage | 2.39 |
| RET * Leverage | 5.52 |
| NEG * Leverage | 4.31 |
| RET * NEG * Leverage | 5.29 |
| FirmSize | 2.45 |
| RET * FirmSize | 130.20 * |
| NEG * FirmSize | 43.81 * |
| RET * NEG * FirmSize | 114.25 * |
| Growth | 1.81 |
| RET * Growth | 1.98 |
| NEG * Growth | 2.04 |
| RET * NEG * Growth | 2.12 |
| Mean VIF Score | 22.76 * |

Table F.4: VIF test for multicollinearity on stand-alone variables Eq. (7)

| Variable | VIF Score |
|-----------------------|-------------|
| NEG | 1.68 |
| RET | 2.26 |
| RET * NEG | 2.19 |
| ExternalCG | 1.05 |
| InternalCG | 1.26 |
| AbanOption | 1.17 |
| EarnMan | 1.01 |
| Big4 | 1.12 |
| Growth | 1.12 |
| Leverage | 1.24 |
| Mean VIF Score | 2.12 |

Note: *Above Benchmark (VIF Score 10) and therefore suspicious for multicollinearity. In table F.4 only the stand-alone variables are taken into account and these show no multicollinearity issues. Since the interactions of the stand-alone variables with RET, NEG, and RET*NEG are key for the Basu model they cannot be excluded. Chi et al. (2009) argue that some of the multicollinearity issues are due to the interactions included in the Basu model.

Testing for a normal distribution of the error terms:

Table F.5: Skewness/Kurtosis test for Normality (Eq. 7)

| | |
|------------------------|----------|
| <i>Observations</i> | 6,611 |
| <i>Pr (Skewness)</i> | 0.000 |
| <i>Pr (Kurtosis)</i> | 0.000 |
| <i>Chi-Squared</i> | 412.15 |
| <i>P-value (Joint)</i> | 0.000*** |

*** Significant at a 1% significance level

Note: The Skewness/Kurtosis test tests whether the error terms are not normally distributed (H0). Since this test shows significant results, there can be concluded that the standard errors are not normally distributed. Garcia Lara et al. (2009b) argue that this test is extremely sensitive for relatively large samples and that significant results of this test do indicate that the error terms are not normally distributed but that the influence of this issue on the results could be limited. Garcia Lara et al. (2009b) suggest to perform a P-P plot, which graphs a standardized normal probability plot, and a Q-Q plot, which plots the quantiles of the residuals against the quantiles of the normal distribution.

Figure F.3: P-P Plot Error Terms Eq. (7)

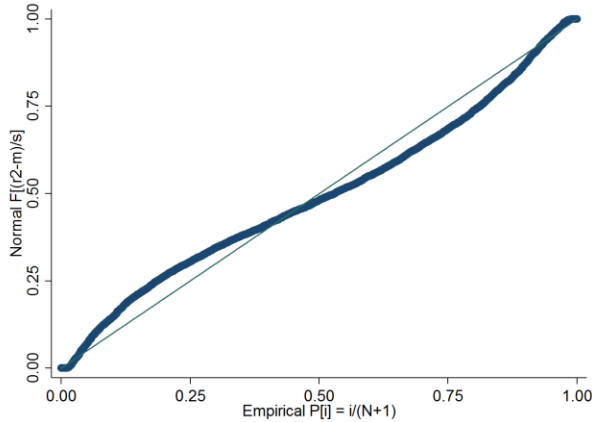
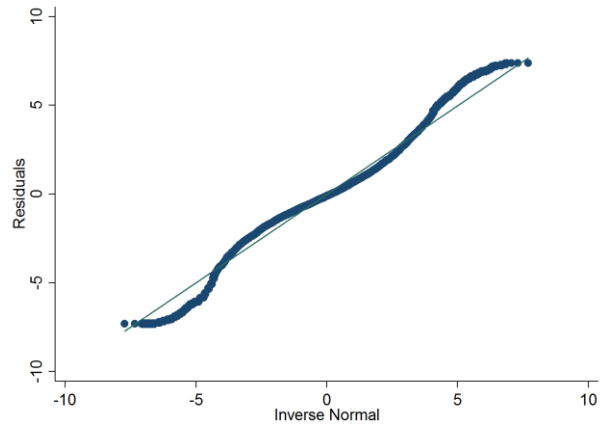


Figure F.4: Q-Q Plot Error Terms Eq. (7)

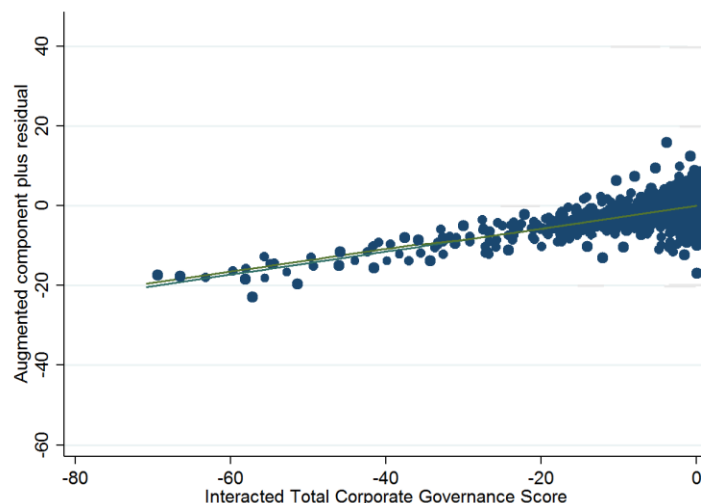


Note: Figure F.3 shows a P-P plot of the error terms, while figure F.4 shows a Q-Q plot of the error terms. Both plots seem to have a normal distribution and, therefore, it is assumed that this model meets the normal distribution of the error terms condition of OLS.

Appendix G: Testing OLS Assumptions (Robust. Check Hypothesis 1)

Testing for Linearity:

Figure G.1: Augmented component-plus-residual plot on the interacted Total Corporate Governance variable Eq. (8)



Note: Figure G.1 shows a plot of the augmented component-plus-residual on the interacted (with CFO and DCFO) Total Corporate Governance Score. The graphs show a linear relationship and, therefore, meeting the linearity assumption of OLS regressions is assumed.

Testing for Homoscedasticity:

Table G.1: Breusch-Pagan/Cook-Weisberg test for Heteroscedasticity Eq. (8)

| | |
|------------|----------|
| Chi-Square | 8225.46 |
| P-value | 0.000*** |

*** Significant at a 1% significance level

Note: The Breusch-Pagan/Cook-Weisberg test for heteroscedasticity tests whether a model is heteroscedastic (H_0). Since this test shows significant results this model does not meet the homoscedasticity condition. To control for this issue (combined with the autocorrelation issue) the model is clustered for firms, resulting in 1,165 clusters.

Testing for Autocorrelation:

Table G.2: Breusch-Godfrey LM test for Autocorrelation Eq. (8)

| | |
|-------------|-----------|
| Chi-Squared | 1,451.562 |
| P-value | 0.000*** |

*** Significant at a 1% significance level

Note: The Breusch-Godfrey LM test tests for autocorrelation (H_0). Since this test shows significant results this model does not meet the no autocorrelation condition. To control for this issue (combined with the heteroscedasticity issue) the model is clustered for firms, resulting in 1,165 clusters.

Testing for Multicollinearity:

Table G.3: VIF test for multicollinearity on Eq. (8)

| Variable | VIF Score |
|-------------------------|---------------|
| DCFO | 128.41* |
| CFO | 74.91* |
| CFO * DCFO | 221.09* |
| TotalCG | 4.45 |
| DCFO * TotalCG | 68.27* |
| CFO * TotalCG | 41.26* |
| CFO * DCFO * TotalCG | 153.15* |
| AbanOption | 1.86 |
| CFO * AbanOption | 1.48 |
| DCFO * AbanOption | 2.91 |
| CFO * DCFO * AbanOption | 2.69 |
| EarnMan | 2.34 |
| CFO * EarnMan | 2.56 |
| DCFO * EarnMan | 1.69 |
| CFO * DCFO * EarnMan | 2.10 |
| Big4 | 3.73 |
| CFO * Big4 | 15.74* |
| DCFO * Big4 | 12.92* |
| CFO * DCFO * Big4 | 17.64* |
| Leverage | 4.45 |
| CFO * Leverage | 5.83 |
| DCFO * Leverage | 4.12 |
| CFO * DCFO * Leverage | 6.06 |
| FirmSize | 5.74 |
| CFO * FirmSize | 42.07* |
| DCFO * FirmSize | 50.53* |
| CFO * DCFO * FirmSize | 43.38* |
| Growth | 2.94 |
| CFO * Growth | 4.18 |
| DCFO * Growth | 1.96 |
| CFO * DCFO * Growth | 4.48 |
| Mean VIF Score | 20.81* |

Table G.4: VIF test for multicollinearity on stand-alone variables Eq. (8)

| Variable | VIF Score |
|-----------------------|-------------|
| DCFO | 1.65 |
| CFO | 1.61 |
| CFO * DCFO | 1.69 |
| TotalCG | 1.02 |
| AbanOption | 1.01 |
| EarnMan | 1.10 |
| Big4 | 1.10 |
| Growth | 1.02 |
| Leverage | 1.17 |
| FirmSize | 1.25 |
| Mean VIF Score | 1.26 |

Note: *Above Benchmark (VIF Score 10) and therefore suspicious for multicollinearity. In table G.4 only the stand-alone variables are taken into account and these show no multicollinearity issues. Since the interactions of the stand-alone variables with CFO, DCFO, and CFO*DCFO are key for the Basu model they cannot be excluded. Chi et al. (2009) argue that some of the multicollinearity issues are due to the interactions included in the Basu model.

Testing for a normal distribution of the error terms:

Table G.5: Skewness/Kurtosis test for Normality Eq. (8)

| | |
|------------------------|----------|
| <i>Observations</i> | 6,611 |
| <i>Pr (Skewness)</i> | 0.000 |
| <i>Pr (Kurtosis)</i> | 0.000 |
| <i>Chi-Squared</i> | 634.33 |
| <i>P-value (Joint)</i> | 0.000*** |

*** Significant at a 1% significance level

Note: The Skewness/Kurtosis test tests whether the error terms are not normally distributed (H0). Since this test shows significant results, there can be concluded that the standard errors are not normally distributed. Garcia Lara et al. (2009b) argue that this test is extremely sensitive for relatively large samples and that significant results of this test do indicate that the error terms are not normally distributed but that the influence of this issue on the results could be limited. Garcia Lara et al. (2009b) suggest to perform a P-P plot, which graphs a standardized normal probability plot, and a Q-Q plot, which plots the quantiles of the residuals against the quantiles of the normal distribution.

Figure G.2: P-P Plot Error Terms Eq. (8)

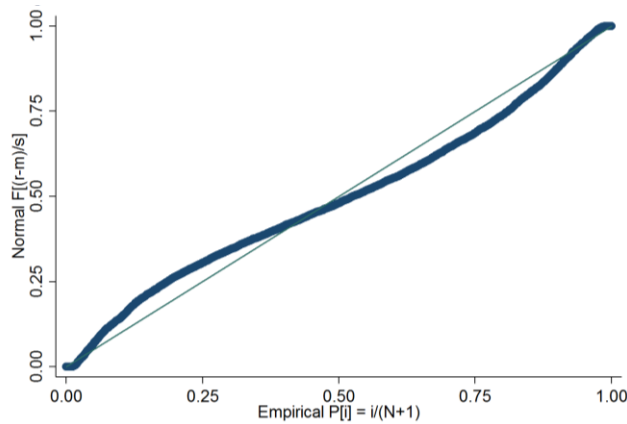
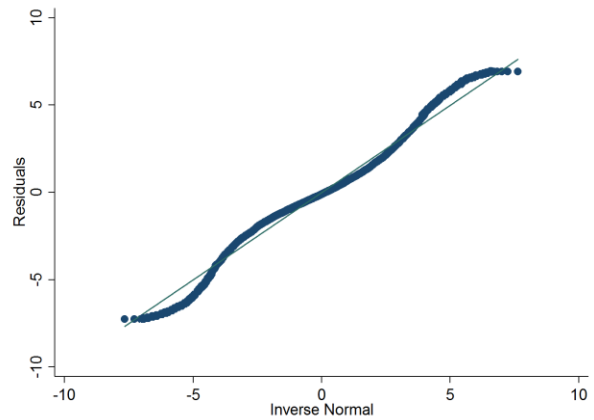


Figure G.3: Q-Q Plot Error Terms Eq. (8)



Note: Figure G.2 shows a P-P plot of the error terms, while figure G.3 shows a Q-Q plot of the error terms. Both plots seem to have a normal distribution and, therefore, it is assumed that this model meets the normal distribution of the error terms condition of OLS.

Appendix H: Results OLS Regression (Robust. Check Hypothesis 1)

Table H.1: The relation between accounting conservatism and (total) corporate governance effectiveness

$$\begin{aligned}
 Accruals_{jt} = & \beta_0 + \beta_1 DCFO_{jt} + \beta_2 CFO_{jt} + \beta_3 CFO_{jt} * DCFO_{jt} + \beta_4 TotalCG_{jt-1} \\
 & + \beta_5 DCFO_{jt} * TotalCG_{jt-1} + \beta_6 CFO_{jt} * TotalCG_{jt-1} + \beta_7 CFO_{jt} \\
 & * DCFO_{jt} * TotalCG_{jt-1} + \beta_{8-13} Control_{jt-1} + \beta_{14-19} DCFO_{jt} \\
 & * Control_{jt-1} + \beta_{20-25} CFO_{jt} * Control_{jt-1} + \beta_{26-31} CFO_{jt} * DCFO_{jt} \\
 & * Control_{jt-1} + \beta_{32-39} Industry_{jt-1} + \beta_{40-48} fyear_{jt-1} + \mu_{jt}
 \end{aligned}$$

| Full Sample | | | |
|--------------------------------------|-------------|-------------|----------|
| Dependent variable = $Accruals_{jt}$ | | | |
| | Exp Sign | Coefficient | P-value |
| DCFO | | 2.569 | 0.000*** |
| CFO | - | -0.888 | 0.213 |
| CFO*DCFO | + | 0.487 | 0.018** |
| TotalCG | | -0.144 | 0.622 |
| CFO * TotalCG | | 0.193 | 0.000*** |
| DCFO * TotalCG | | 0.225 | 0.206 |
| CFO * DCFO * TotalCG | + | 0.315 | 0.031** |
| Control | | | Included |
| DCFO * Control | | | Included |
| CFO * Control | | | Included |
| Industry | | | Included |
| Fyear | | | Included |
| CFO * DCFO * AbanOption | - | -5.814 | 0.005*** |
| CFO * DCFO * EarnMan | - | -9.015 | 0.000*** |
| CFO * DCFO * Big4 | + | 0.087 | 0.851 |
| CFO * DCFO * Leverage | + | 0.871 | 0.177 |
| CFO * DCFO * FirmSize | + | 0.304 | 0.046** |
| CFO * DCFO * Growth | - | -1.314 | 0.086* |

Significant at: *10% significance level **5% significance level ***1% significance level.

Note: This table reports the results of estimating Eq. (8) using OLS regressions over the period 2007-2015. Stand-alone control variables and the two-way interactions between controls and DCFO or CFO, and the industry and fiscal year control variables are included in the estimates but are not reported for brevity. The P-values are based on standard errors adjusted for clustering on firms. This sample is clustered for 1,165 firms and the results represent the full sample of firms. The number of firm-year observations of this OLS-regression is 6,611. The model has a R-Squared of 0.390 indicating that 39.0 percent of the variable variation is explained by this linear model.

Appendix I: Testing OLS Assumptions (Robust. Check Hypothesis 2a and 2b)

Testing for Linearity:

Figure I.1: Augmented component-plus-residual plot on the interacted Internal Corporate Governance variable Eq. (9)

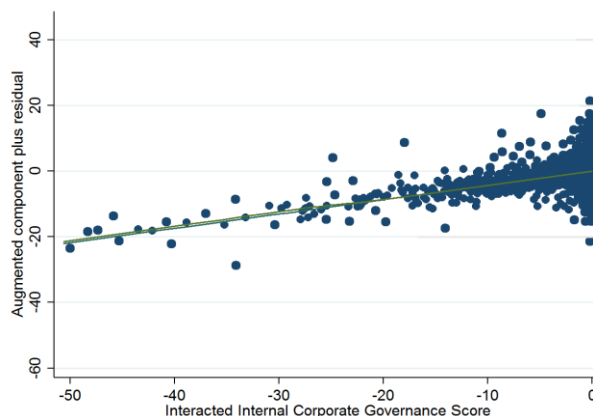
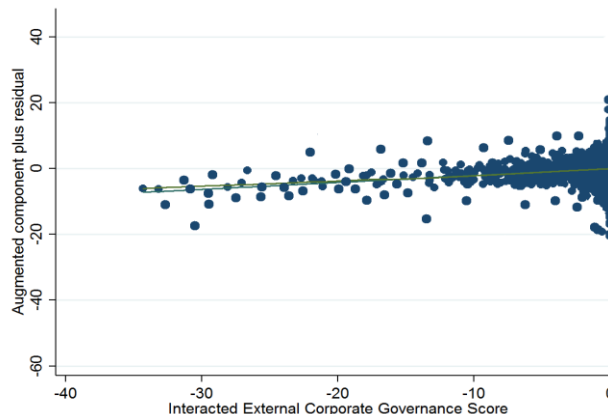


Figure I.2: Augmented component-plus-residual plot on the interacted External Corporate Governance variable Eq. (9)



Note: Figure I.1 shows a plot of the augmented component-plus-residual on the interacted (with CFO and DCFO) Internal Corporate Governance Score. Figure I.2 shows a plot of the augmented component-plus-residual on the interacted External Corporate Governance Score. Both graphs show a linear relationship. Therefore, meeting the linearity assumption of OLS regressions is assumed.

Testing for Homoscedasticity:

Table I.1: Breusch-Pagan/Cook-Weisberg test for Heteroscedasticity Eq. (9)

| | |
|-------------------|----------|
| <i>Chi-Square</i> | 8226.01 |
| <i>P-value</i> | 0.000*** |

*** Significant at a 1% significance level

Note: The Breusch-Pagan/Cook-Weisberg test for heteroscedasticity tests whether a model is heteroscedastic (H0). Since this test shows significant results this model does not meet the homoscedasticity condition. To control for this issue (combined with the autocorrelation issue) the model is clustered for firms, resulting in 1,165 clusters.

Testing for Autocorrelation:

Table I.2: Breusch-Godfrey LM test for Autocorrelation Eq. (9)

| | |
|--------------------|-----------|
| <i>Chi-Squared</i> | 1,456.775 |
| <i>P-value</i> | 0.000*** |

*** Significant at a 1% significance level

Note: The Breusch-Godfrey LM test tests for autocorrelation (H0). Since this test shows significant results this model does not meet the no autocorrelation condition. To control for this issue (combined with the heteroscedasticity issue) the model is clustered for firms, resulting in 1,165 clusters.

Testing for Multicollinearity:

Table I.3: VIF test for multicollinearity on Eq. (9)

| Variable | VIF Score |
|-------------------------|----------------|
| DCFO | 160.07 * |
| CFO | 95.69 * |
| CFO * DCFO | 323.99 * |
| ExternalCG | 4.49 |
| DCFO * ExternalCG | 17.20 * |
| CFO * ExternalCG | 24.52 * |
| CFO * DCFO * ExternalCG | 55.74 * |
| InternalCG | 4.76 |
| DCFO * InternalCG | 75.68 * |
| CFO * InternalCG | 53.20 * |
| CFO * DCFO * InternalCG | 179.33 * |
| AbanOption | 1.87 |
| CFO * AbanOption | 1.48 |
| DCFO * AbanOption | 2.91 |
| CFO * DCFO * AbanOption | 2.69 |
| Big4 | 3.79 |
| CFO * Big4 | 16.15 * |
| DCFO * Big4 | 13.00 * |
| CFO * DCFO * Big4 | 17.45 * |
| Leverage | 4.45 |
| CFO * Leverage | 5.84 |
| DCFO * Leverage | 4.22 |
| CFO * DCFO * Leverage | 6.11 |
| FirmSize | 5.77 |
| CFO * FirmSize | 42.47 * |
| DCFO * FirmSize | 51.21 * |
| CFO * DCFO * FirmSize | 45.35 * |
| Growth | 2.94 |
| CFO * Growth | 4.19 |
| DCFO * Growth | 1.98 |
| CFO * DCFO * Growth | 4.81 |
| Mean VIF Score | 25.32 * |

Table I.4: VIF test for multicollinearity on stand-alone variables Eq. (9)

| Variable | VIF Score |
|-----------------------|-------------|
| DCFO | 1.69 |
| CFO | 1.65 |
| CFO * DCFO | 1.61 |
| ExternalCG | 1.03 |
| InternalCG | 1.01 |
| AbanOption | 1.01 |
| EarnMan | 1.10 |
| Big4 | 1.10 |
| Growth | 1.02 |
| Leverage | 1.17 |
| Mean VIF Score | 1.24 |

Note: *Above Benchmark (VIF Score 10) and therefore suspicious for multicollinearity. In table I.4 only the stand-alone variables are taken into account and these show no multicollinearity issues. Since the interactions of the stand-alone variables with CFO, DCFO, and CFO*DCFO are key for the Basu model they cannot be excluded. Chi et al. (2009) argue that some of the multicollinearity issues are due to the interactions included in the Basu model.

Testing for a normal distribution of the error terms:

Table I.5: Skewness/Kurtosis test for Normality Eq. (9)

| | |
|------------------------|----------|
| <i>Observations</i> | 6,611 |
| <i>Pr (Skewness)</i> | 0.000 |
| <i>Pr (Kurtosis)</i> | 0.000 |
| <i>Chi-Squared</i> | 4,294.99 |
| <i>P-value (Joint)</i> | 0.000*** |

*** Significant at a 1% significance level

Note: The Skewness/Kurtosis test tests whether the error terms are not normally distributed (H0). Since this test shows significant results, there can be concluded that the standard errors are not normally distributed. Garcia Lara et al. (2009b) argue that this test is extremely sensitive for relatively large samples and that significant results of this test do indicate that the error terms are not normally distributed but that the influence of this issue on the results could be limited. Garcia Lara et al. (2009b) suggest to perform a P-P plot, which graphs a standardized normal probability plot, and a Q-Q plot, which plots the quantiles of the residuals against the quantiles of the normal distribution.

Figure I.3: P-P Plot Error Terms Eq. (9)

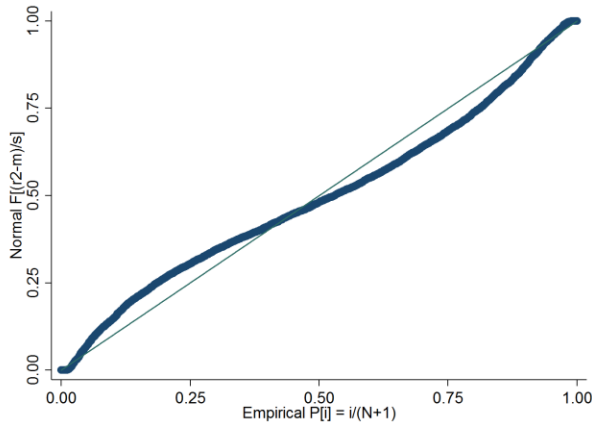
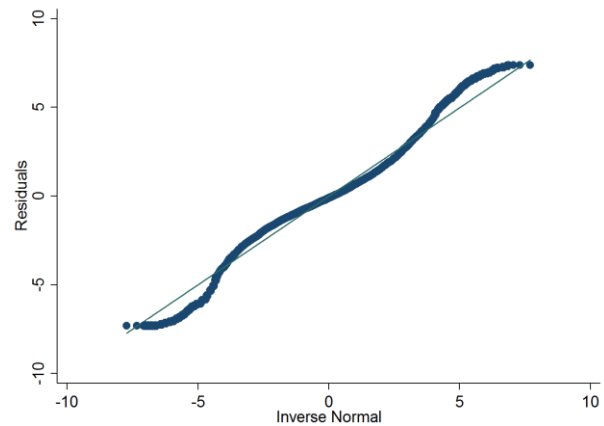


Figure I.4: Q-Q Plot Error Terms Eq. (9)



Note: Figure I.3 shows a P-P plot of the error terms, while figure I.4 shows a Q-Q plot of the error terms. Both plots seem to have a normal distribution and, therefore, it is assumed that this model meets the normal distribution of the error terms condition of OLS.

Appendix J: Results OLS Regression (Robust. Check Hypotheses 2a and 2b)

Table J.1: The relation between accounting conservatism and internal/external corporate governance effectiveness

$$\begin{aligned}
 Accruals_{jt} = & \beta_0 + \beta_1 DCFO_{jt} + \beta_2 CFO_{jt} + \beta_3 CFO_{jt} * DCFO_{jt} + \beta_4 InternalCG_{jt-1} + \beta_5 DCFO_{jt} \\
 & * InternalCG_{jt-1} + \beta_6 CFO_{jt} * InternalCG_{jt-1} + \beta_7 CFO_{jt} * DCFO_{jt} * InternalCG_{jt-1} \\
 & + \beta_8 ExternalCG_{jt-1} + \beta_9 DCFO_{jt} * ExternalCG_{jt-1} + \beta_{10} CFO_{jt} * ExternalCG_{jt-1} \\
 & + \beta_{11} CFO_{jt} * DCFO_{jt} * ExternalCG_{jt-1} + \beta_{12-17} Control_{jt-1} + \beta_{18-23} DCFO_{jt} \\
 & * Control_{jt-1} + \beta_{24-29} CFO_{jt} * Control_{jt-1} + \beta_{30-35} CFO_{jt} * DCFO_{jt} * Control_{jt-1} \\
 & + \beta_{36-43} Industry_{jt-1} + \beta_{44-52} Fyear_{jt-1} + \mu_{jt}
 \end{aligned}$$

| Full Sample | | | |
|---------------------------------------------------|----------|-------------|----------|
| Dependent variable = <i>Accruals_{jt}</i> | | | |
| | Exp Sign | Coefficient | P-value |
| DCFO | | -0.579 | 0.492 |
| CFO | - | -2.349 | 0.000*** |
| CFO * DCFO | + | 0.592 | 0.015** |
| InternalCG | | 0.008 | 0.541 |
| CFO * InternalCG | | -0.617 | 0.109 |
| DCFO * InternalCG | | -0.452 | 0.032** |
| CFO * DCFO * InternalCG | + | 0.468 | 0.041** |
| ExternalCG | | -0.078 | 0.769 |
| CFO * ExternalCG | | -0.109 | 0.022** |
| DCFO * ExternalCG | | -0.220 | 0.513 |
| CFO * DCFO * ExternalCG | + | 0.191 | 0.012** |
| Control | | Included | |
| DCFO * Control | | Included | |
| CFO * Control | | Included | |
| Industry | | Included | |
| Fyear | | Included | |
| CFO * DCFO * AbanOption | - | -5.973 | 0.023** |
| CFO * DCFO * EarnMan | - | -8.876 | 0.000*** |
| CFO * DCFO * Big4 | + | -0.065 | 0.573 |
| CFO * DCFO * Leverage | + | 1.711 | 0.528 |
| CFO * DCFO * FirmSize | + | -0.042 | 0.465 |
| CFO * DCFO * Growth | - | -1.079 | 0.059* |

Significant at: *10% significance level **5% significance level ***1% significance level.

Note: This table reports the results of estimating Eq. (9) using OLS regressions over the period 2007-2015. Stand-alone control variables and the two-way interactions between controls and DCFO or CFO, and the industry and fiscal year control variables are included in the estimates but are not reported for brevity. The P-values are based on standard errors adjusted for clustering on firms. This sample is clustered for 1,165 firms and the results represent the full sample of firms. The number of firm-year observations of this OLS-regression is 6,611. The model has a R-Squared of 0.391 indicating that 39.1 percent of the variable variation is explained by this model.