MSc Accounting, Auditing & Control

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THE ASSOCIATION BETWEEN INDUSTRY ENTRY COSTS AND CONDITIONAL CONSERVATIVE REPORTING

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Abstract: This thesis examines the potential association between the company's level of industry entry costs and the degree of conditional conservatism applied by the company. The thesis finds a significant positive association between the industry entry costs and the degree of conditional conservative reporting. These findings are consistent with the corporate governance argument on product market competition, but are inconsistent with the results of Dhaliwal et al. (2014) that find evidence for strategic application of conditional conservatism. Moreover, the political costs argument for the use of conditional conservatism is not supported by the empirical findings of this thesis. As predicted, the corporate governance argument is found to be more pronounced for market followers than for market leaders. This thesis finds no evidence that suggests that the level of information asymmetry increases the need for conditional conservatism as corporate governance mechanism when industry entry costs are high.

Keywords: Conditional Conservatism • Industry Entry Barriers • Information Asymmetry

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1. INTRODUCTION

1.1 Social Relevance

Managers have historically been tended to recognize bad news earlier than good news in order to deal with uncertainties related to the reporting of a firm's periodic financial performance (AICPA, 1970). Moreover, the timely recognition of bad news helps investors to prevent managers from making risky investments decisions that are taken to cover up bad news (Smith & Warner, 1979). Furthermore, since the valuation of assets (revenues) and liabilities (expenses) is often done in circumstances surrounding uncertainty, managers have generally been tended to understate (overstate) these assets (liabilities) (AICPA, 1970; FASB, 1980). The tendency described above is known as the principle of accounting conservatism in the accounting profession and became a generally accepted convention for auditors with regard to the reporting of financial information (FASB, 1980). The article of Watts (2003) states that the application of accounting conservatism by managers has indeed increased significantly over the years.

Nevertheless, the desirability of accounting conservatism has been –and still is- subject to a heated debate. The concept of conditional conservatism, which is defined in this thesis following Basu (1997) as "the asymmetric verification of good news versus bad news" (i.e., bad news is recognized more timely), managed to stay out of the debate for a considerable amount of time. In contrast, unconditional conservatism, which is defined following Qiang (2007) as "the downward tendency of the book value relative to the market value," has traditionally experienced a substantive amount of criticism. In its conceptual framework of 1980, the Financial Accounting Standards Board (*hereafter*, FASB) already recognized that systematic understatement of assets is not a desirable quality of financial reporting (FASB, 1980). Conditional conservatism, however, is historically included as desirable quality of financial reporting. This changed in 2010, when the International Accounting Standards Board (*hereafter,* IASB) and the FASB jointly decided to portray accounting conservatism as undesirable quality of financial reporting due to its perceived negative influence on the concept of neutrality (FASB, 2010; Mora et al., 2015). This departure from accounting conservatism is consistent with the preference of the FASB and the IASB to report fair values rather than historical costs (Chartered Accountants, 2013).

The decision of the FASB to exclude the concept of prudence from its conceptual framework resulted in a substantial amount of criticism. Similar, the IASB received fierce criticism (e.g., IFAC, 2015; UK Financial Reporting Council, 2015). In May 2015, the IASB even reintroduced the concept of prudence in its Exposure Draft *Conceptual Framework for Financial Reporting*, in which the IASB considered *cautious prudence* as desirable quality, but it still excluded *asymmetric prudence* from the

conceptual framework (IASB, 2015).[1] Thus, both the IASB and the FASB have decided to exclude the concept of conditional conservatism from the conceptual framework. However, the debate surrounding the desirability of conditional conservatism is unlikely to have ended with the decision of the FASB. And in fact, a considerable amount of arguments provides justifications for the application of conditional conservatism. For instance, conditional conservatism is found to be an efficient contracting mechanism (Watts, 2003), and enables a significant reduction in the cost of capital (Gigler et al., 2009). Moreover, conditional conservatism is an effective means to reduce a company's litigation risk, while regulators benefit by lower public scrutiny since assets are more likely to be understated than overstated (Watts, 2003). These benefits suggest that accounting conservatism arises almost naturally. Despite its natural existence, study of Bushman & Piotroski (2006) emphasizes that the degree of conditional conservatism differs significantly across countries. For this reason, this thesis focusses on U.S. firms only since these firms compete in the same institutional setting. The focus on U.S. firms is particularly beneficial since the quality of financial reporting is relatively high in the U.S. Haw et al. (2015) find evidence that suggests that the quality of the financial reporting environment has a significant effect on the degree of accounting conservatism. Moreover, the U.S. exhibit an environment in which litigation risk is relatively high, which makes the need for accounting conservatism more pronounced for U.S. firms (Bushman & Piotroski, 2006).

This thesis contributes to the debate on the desirability of conditional conservatism in the U.S. by investigating whether the adoption of conditional conservative accounting policies by U.S. firms is a response to the threat of future industry competition experienced by managers. Multiple arguments suggest an association between the level of industry entry costs and the degree of conditional conservatism. For instance, this thesis examines whether conditional conservatism is applied to mislead potential competitors when industry entry costs are relatively low. Bad news is recognized more timely than good news under conditional conservatism and is therefore expected to be used as managerial tool to discourage new competitors from entering the industry. In addition, high industry entry costs could increase the demand for conditional conservatism to function as corporate governance mechanism which suggests a positive association between the level of industry entry costs and the degree of conditional conservatism. Further research on the potential association between industry entry costs and the degree of conditional conservatism could provide further justification for FASB's recent decision to exclude the concept of accounting conservatism from the conceptual framework.

[1] The IASB defines the concept of *cautious prudence* as "the exercise of cautious judgements when making judgement under conditions of uncertainty." The concept of *asymmetric prudence* is defined as the asymmetric verification of good versus bad news (IASB, 2015).

1.2 Research Question and Subquestions

1.2.1 Research Question

The accounting literature generally identifies four explanations for the existence of accounting conservatism, i.e., the contracting explanation, the litigation explanation, the tax explanation, and the regulatory- and standard setting explanation (e.g., Watts, 2003). Other research suggests that accounting conservatism could also be the result of earnings management (e.g., Jackson & Liu, 2010). Watts (2003) argues, however, that earnings management is not able to individually explain the systematic understatement of net assets. Nevertheless, research of Dhaliwal et al. (2014) finds that there is a significant association between industry market competition and a firm's application of conditional conservatism. This thesis elaborates on these findings and investigates whether the *threat* of industry market competition (i.e., approximated by the industry's entry costs) can explain a company's adoption of conditional conservative accounting policies. The research question is formulated as follows:

Is the threat of future industry competition associated with the company's adoption of conditional conservative accounting policies?

(Research Question)

An answer to this research question adds value to the debate on the desirability of accounting conservatism. More specifically, this thesis aims to identify other explanations for the existence of conditional conservatism. Potential other explanations are likely to add valuable input for the current debate on the desirability of accounting conservatism.

1.2.2 Subquestions

This thesis discusses multiple subquestions that can be related to the research question of this thesis. Firstly, this thesis assesses the general impact of industry entry costs on the application of conditional conservative accounting policies. Hence, an answer to the following subquestion will contribute to the process of answering the research question of this thesis.

Is there a significant association between a company's application of conditional conservatism and its industry entry costs?

(Subquestion 1)

Secondly, the thesis distinguishes between market leaders and market followers to answer the research question more accurately. Different companies face different levels of competition (e.g., Li, 2010) and for this reason, these companies will be differently affected when new competitors eventually decide to enter the market. Companies that compete in the same industry are therefore expected to react

differently to the threat of future industry competition. An answer to the following subquestion contributes to the process of answering the research question:

Is the association between a company's application of conditional conservatism and its industry entry costs different for market leaders compared to market followers?

(Subquestion 2)

Thirdly, this thesis evaluates the role that the level of information asymmetry plays with regard to the association between industry entry costs and the level of conditional conservatism to answer the research question more accurately. Existing accounting literature finds that high levels of information asymmetry significantly increases managers' opportunities to make self-interested decisions (Cohen et al. 2006; Yu, 2008) and alters the need for effective corporate governance mechanisms (Healy & Palepu, 2001). This thesis therefore evaluates the role of information asymmetry in the association between industry entry costs and the level of conditional conservatism. The following subquestion is formulated in order to answer the research question more accurately.

Does the level of information asymmetry affect the potential association between industry entry costs and conditional conservatism?

(Subquestion 3)

1.3 Academic Relevance

This paper contributes to the literature on two distinguishing fields. Firstly, this thesis contributes to the literature on accounting conservatism. An extensive amount of studies investigates the explanations for the existence of accounting conservatism in financial reporting. The frequently cited paper of Watts (2003) identifies four reasons for the existence of accounting conservatism, i.e., the contracting explanation; the litigation risk explanation, tax motivations, and regulatory- and standard setting motivations. More recent papers aim to find evidence on these four identified categories. For example, consistent with the contracting explanation, Iyengar & Zampeli (2010) show that companies are more likely to engage in accounting conservative behaviour when executive pay is highly dependent on firm's financial performance. Thus, while there exists a substantial amount of literature on these four explanations (see also evidence of: Hui et al. (2012) and Aier et al. (2014)), literature that investigates other possible explanations for the existence of accounting conservatism is rather limited. Watts (2003) acknowledges that earnings management and discontinuance of operations could explain accounting conservatism. However, Watts (2003) argues that these two cannot individually or jointly explain the understatement of net assets. Building on prior work of Dhaliwal et al. (2014), this thesis takes a different approach and investigates whether there is *systematic* understatement of net assets in long periods of competitive pressures stemming from the threat of future industry

competition, potentially finding evidence for a long-term managerial tendency to recognize bad news more timely than good news.

Secondly, this thesis contributes to the literature on managerial behaviour in response to competitive pressures in the industry. The proprietary costs hypothesis has been widely documented in the accounting literature and suggests that companies are reserved to disclose private information in order to prevent the delivery of useful information to competitors (e.g., Ellis et al., 2012; Ali et al., 2014). Besides disclosure as managerial tool to withhold valuable information in the context of competition, Palepu et al. (2013) point out that managers are also able to withhold useful information by adopting specific accounting policies. Markarian & Santaló (2014) support this notion and find evidence which suggests that underperforming firms are more likely to adopt earnings-increasing accounting policies when industry competition is severe. However, conditional conservatism as accounting tool to withhold useful information has not been widely documented in accounting literature. In this respect, research to assess whether conditional conservatism is strategically applied to overcome the threat future industry competition should provide useful input for the debate on the desirability of conditional conservatism.

1.4 Methodology Thesis

This thesis examines whether there is an association between the level of industry entry costs and the degree of conditional conservatism by using the conditional conservatism measure as proposed in the article of Basu (1997). The level of industry entry costs, measured by the natural logarithm of the average industry Gross Property, Plant and Equipment (gross PPE), is included in this measure to assess the potential association between industry entry costs and the degree of conditional conservatism. Subsequently, this thesis follows Li (2010) and Dhaliwal et al. (2014) by distinguishing between market followers and market leaders to examine whether the potential association is dependent on the firm's competitive position in the industry. In addition, this thesis includes an interaction term that proxies for the level of information asymmetry. The effectiveness of conditional conservatism as managerial strategic tool or the need for conditional conservatism as corporate governance mechanism could be heavily dependent of the firm's level of information asymmetry. Hence, the level of information asymmetry could potentially strengthen the association between the level of industry entry costs and the degree of conditional conservatism.

1.5 Structure Thesis

The remainder of this thesis is organized as follows. *Chapter 2* establishes the theoretical framework for this thesis and discusses furthermore the relevant definitions of the concepts used. *Chapter 3* provides an overview of prior research that is related to this thesis. The development of the hypotheses is covered in *chapter 4*. *Chapter 5* explains the research design that is used in this thesis and *chapter 6* provides results and a discussion of these results. *Chapter 7* concludes.

2. THEORETICAL FRAMEWORK

2.1 Introduction Chapter 2

This chapter discusses the theories that underlie this thesis and further provides general definitions of the important concepts used. *Section 2.2-2.5* discusses positive accounting theory as applicable theory for this thesis, while *section 2.6-2.8* discusses the agency theory. *Section 2.9* defines the concepts used in this paper. *Section 2.10* of this thesis concludes.

2.2 Positive Accounting Theory

This research contributes to the literature on *Positive Accounting Theory* as first formalized by Watts & Zimmerman (1978, 1979). Literature on positive accounting theory aims to establish a framework to predict and explain observed accounting practices (Healy et al., 2001; Deegan, 2011; Scott, 2015). In this respect, positive accounting theory provides predictions and explanations for managerial application of accounting practices rather than it gives instructions for a particular accounting practice to be followed.

This positivist approach results that one can only rejct a formulated hypothesis rather than accept a hypothesis (Watts & Zimmerman, 1986). Watts & Zimmerman (1978, 1979) identify methodological individualism and the neoclassical hypothesis of maximization as the basis of positive accounting theory. Methodical individualism asserts that every empirical observation can be related to individual decision-making, whereas the neoclassical maximization hypothesis assumes that every decision is made to maximize the individual's own expected utility (e.g., Boland & Gordon, 1992).

Positive accounting theory links empirical observations to underlying theories that could explain managerial accounting choices (Scott, 2015). Positive accounting theory comprises three general theories to explain why managers adopt specific accounting policies:

2.2.1 Bonus Plan Hypothesis

This theory predicts managers are subject to substantial management compensation plans adopt earnings-increasing accounting methods. More specifically, managers favour accounting methods that increase earnings to increase their earnings-based compensation. Hence, in this manner, managers increase their own welfare at the expense of shareholders and other stakeholders (i.e., the accounting methods do not provide a true and fair view of the company's financial position).

2.2.2 Debt Covenant Hypothesis

Similar to the bonus plan hypothesis, the debt covenant hypothesis predicts managers to be willing to adopt earnings-increasing accounting practices. However, this time to meet the requirements incorporated in debt contracts. Failing to meet these requirements is often associated with higher interest percentages and provides adverse consequences for managerial performance.

2.2.3 Political Cost Hypothesis

The political cost hypothesis predicts companies subject to high public and political scrutiny to favour earnings-decreasing accounting methods in order to decrease the company's public visibility. This public visibility comes from firms being highly profitable which is likely to draw attention of regulators (Cahan, 1992).

2.3 Feasibility Positive Accounting Theory

Although positive accounting theory establishes a common ground for a substantial amount of accounting studies, the accounting literature points out some negative traits of positive accounting theory. First of all, positive accounting theory is not as objective and unbiased as Watts and Zimmerman (1978,1979) claim it is. Tinker et al. (1982) argue that positive studies even exploit same levels of subjectivity as normative studies.

Criticism on positive accounting theory could generally be attributed to either the assumption of methodological individualism or the neoclassical maximization hypothesis (Boland & Gordon, 1992). Criticism on the latter assumption is mainly focused on the feasibility for individuals to maximize their utility. For example, an individual is unlikely to possess all required knowledge in order to make utility-optimizing decisions. More stringent is the assumption of methodological individualism. For example, Boland & Gordon (1992) argue that individuals –in contrast to what positive accounting theory dictates- are likely to take into account the social consequences of their individualistic decisions.

Despite these criticism, positive accounting theory has been (and still is) a widely accepted theory in accounting literature (e.g., Beattie et al., 1994; Kothari, 2001; Ge et al., 2011). However, it is important to keep in mind these caveats related to positive accounting theory.

2.4 Link Thesis and Positive Accounting Theory

Positive accounting literature aims to predict and explain empirical observations with underlying hypotheses (Healy et al., 2001; Deegan, 2011; Scott, 2015). This thesis aims to find empirical support for the hypotheses based on various (competing) theories for the potential effect of industry entry costs on conditional conservatism.

Following the neoclassical maximization hypothesis, managers that engage in the individual decision making process are expected to maximize their own welfare. This implies that managers are led by their own incentives in the reporting of financial information to shareholders and other stakeholders. While the entrance of new competitors could impact firm's future financial performance and thus, could influence the performance of the manager, managers are likely to strategically apply accounting methods to maximize their own utility. More specifically, a manager's (future) utility will generally be higher when new competitors are discouraged to enter the market. This accounting

motive will be especially strong when the prospect of future industry competition is high (i.e., low industry entry costs).

A policy of discouragement of new competitor entrance could be carried out in multiple ways. Palepu et al. (2013) identify two general methods for managers to withhold valuable information from investors and other stakeholders. Note, these methods could be used by managers as means to withhold information from potential competitors that could be valuable for the potential competitors in making their entrance decision. Managers can withhold valuable information by choosing 1) specific accounting policies and 2) disclosure policies that both make it more costly to assess the true financial position of the company (Palepu et al., 2013).

The principle of accounting conservatism falls in the first category and could be used by management as a means to communicate worse financial performance than actually is the case. Hence, companies that are considering entrance to the industry will be presented less favourable industry opportunities by strategic application of conditional conservatism.

2.5 Link Thesis and Political Cost Hypothesis

With respect to the three general hypotheses in positive accounting theory (see *section 2.2.1-2.2.3*), the political cost hypothesis will be highly applicable to this thesis. Note, accounting conservatism is a principle that decreases current-period earnings and therefore is expected to be applied for companies for which the political cost hypothesis holds. Companies for which the political cost hypothesis holds are generally considered to be highly profitable firms in low competitive industries (Cahan, 1992). This thesis considers firms with high industry entry costs to be more publicly visible. These firms are therefore predicted to be more accounting conservative under the political cost hypothesis.

2.6 Agency Theory

Another theory suggests a different direction for the association between the level of industry entry costs and the degree of conditional conservatism. More specifically, the agency theory, as formulated by Jensen & Meckling (1976) and Watts & Zimmerman (1978, 1979), is also applicable to this thesis. Jensen & Meckling (1976) consider the agency relationship as a contract in which the agent makes decisions on behalf of the principal. On the basis of the agency theory is the separation between ownership and control, where the managers are controlling the firm (i.e., the agents), and the shareholders own the company (i.e., the principals). Hence, the managers make decisions on behalf of the shareholders. The agency theory predicts managers however to make self-interested decisions that are not always in line with the interests of the principal. These self-interested decisions are likely to occur since these principals cannot observe all actions of the agents (Cohen et al., 2006). This information asymmetry between the parties gives rise to a considerable amount of monitoring costs, bonding costs and residual loss. The article of Jensen & Meckling (1976) refers to these costs as agency costs.

2.7 Feasibility Agency Theory

The agency theory is well established in the accounting literature. There are, however, some critics related to the feasibility of the agency theory. For instance, Rutledge & Karim (1999) criticize the assumption that agents act only out of self-interest. The authors argue that agents make decisions considering the interest of others. To illustrate, Mintz & Roselyn (2016) discuss various ethical theories that assume that agents are not only guided by self-interest. Yet, Health (2009) responds to this critic by pointing out that the agency theory does not assume self-interested decisions.

Another difficulty related to the application of the agency theory in the accounting literature is the perceived close connection between the agency theory and shareholder primacy. Health (2009) points out that the principal-agent relationship is generally seen as an implicit contract between shareholder and managers. However, this is not always the case. More specifically, other principal-agents relationships are possible since the principal is the one whose welfare ought to be served, while the agent is the person that has the obligation to serve the principal; (Health, 2009).

At last, Health (2009) argues that the agency theory is commonly used as a means to avoid responsibility, where ethical actions are justified as an act out of loyalty to the principal. Goodpaster (1991) had already tried to respond to this critic by stating that the agency theory does not create moral permissions for unethical behaviour that previously did not exist.

2.8 Link Thesis and Agency Theory

Muiño & Nickel (2016) argue that firms face a trade-off in their decision to disclose valuable information about company performance. On one hand, firms in low entry barrier industries perceive disclosure of good performance as costly since it provides valuable information to potential new entrants. On the other hand, disclosure of lower performance signals according to Muiño & Nickel (2016) an increase in agency costs. Thus, the risk of higher agency costs induces managers to present higher performance. Hence, the agency view predicts managers to present increased performance to financial statement users, while the industry competition view predicts managers to present decreased performance when industry entry barriers are low. Moreover, high industry entry costs could increase the need for corporate governance mechanism since an industry is more likely to lack sufficient competitive pressures. Essential for both views is the existence of some information asymmetry as the agency theory presumes. The managers do not only have superior information compared to the shareholders, but also exhibit superior information in comparison with current and potential rivals. For this reason, current and potential rivals exhibit difficulties in assessing company's true current and future performance and managers can effectively deceive their financial statement users by adopting accounting policies that decrease (or increase) company performance. Hence, conditional conservatism could be an effective means to deceive financial statement users about company performance due to the existence of information asymmetry. Note however, that information asymmetry itself could generate accounting conservatism. More specifically, LaFond & Watts (2008)

find that accounting conservatism is applied to restrain managers from making self-serving decisions when information asymmetry between management and shareholders is high.

2.9 Important Definitions

2.9.1 Accounting Conservatism

The literature generally distinguishes two forms of accounting conservatism. Under conditional conservatism book values are written down under bad news periods but not written up under good news periods (Beaver and Ryan, 2005). This thesis uses the definition of conditional conservatism as defined by Basu (1997), which is the asymmetric requirement for the verification of good news and bad news i.e., good news requires a higher verification in order to be recognised in the firm's financial reporting. Conditional conservatism is news dependent (Beaver and Ryan, 2005) and applied after the difficult-to-verify news occurs (Qiang, 2007). An example of conditional conservatism is the use of impairments. In contrast, unconditional conservatism is news independent (Beaver and Ryan, 2005), and applied before the difficult-to-verify news occurs (Qiang, 2007). Unconditional conservatism is defined in this thesis following Qiang (2007) as the downward tendency of the book value relative to the market value. An example of unconditional conservatism is the accelerated depreciation of property, plant and equipment. Additionally, the immediate expensing of internally developed intangibles is another example of unconditional conservatism.

This thesis focuses on the concept of conditional conservatism. The decision to focus on conditional conservatism rather than unconditional conservatism comes with multiple benefits. Firstly, unconditional conservatism is historically considered as undesirable quality of financial reporting by the FASB (FASB, 1980). Focussing on unconditional conservatism in this respect, is not likely to add additional value to the accounting literature, because the FASB historically recognises the adverse consequences of unconditional conservatism (e.g., Jackson & Liu, 2010). Secondly, a focus on conditional conservatism is, according to Beaver and Ryan (2009), beneficial, since conditional conservatism is able to present the asymmetric verification requirement of accounting conservatism comprehensively.

2.9.2 Potential Competition

The likelihood of a new competitor entering the market is dependent on the entry barriers of the industry. Palepu et al. (2013) identify scale advantages; first mover advantages; the complexity of the distribution channel; the difficulty of setting up customer-relations, and; legal barriers as potential entry barriers of an industry. However, of course, entry barriers could be very industry-specific. Some industry entry barriers that are generalizable to most industries include economies of scale, cost advantages, the complexity of the distribution channels, and the switching costs of customers (Bain, 1956; Porter, 1979).

Based on the paper of Karakaya (2002) which states that cost advantages and capital requirements are considered as most important entry barriers *by managers*, this paper focusses on the capital requirements to enter an industry in order to assess the extent of an industry's entry costs. Note, it are *the managers* that experience a threat of potential competition when industry entry costs are low, and it are *these managers* that decide to respond to this threat by (potentially) adopting accounting conservative policies. In this respect, it is important to focus on the industry entry barriers as perceived by the managers.

Since the expected capital requirements to enter a specific industry will be relevant for every entrance decision unrelated to a particular indu stry, this focus allows to make comprehensive comparisons between industries. Moreover, the measurement of the expected capital requirement as financial barrier is relatively straight-forward in comparison with other industry entry barriers. For example, it is extremely difficult -if not impossible- to make an accurate assessment of customer switching costs for every industry, nor will it be possible to make a proper (inter-industry) assessment of the legal entry barriers.

2.10 Conclusion Chapter 2

This chapter established positive accounting theory as the basis for this thesis. Positive accounting theory is based on two fundamental concepts. These concepts include methodological individualism and the neoclassical maximization hypothesis. Following this hypotheses, managers are expected to maximize their own utility. Increased industry competition generally comes at the costs of existing competitors and therefore is able to decrease managers' (expected future) utility. In order to discourage the entrance of new competitors, managers are predicted to adopt accounting policies that decrease their company's financial performance as reported in the financial statements. Conditional conservatism is considered as a means to decrease perceived company performance for outsiders.

Section 2.6 introduced the agency theory which also relates to this thesis. Important for this thesis is the assumption of information asymmetry between managers and the other parties. Accounting conservatism as means to discourage new competitors entering the market could only be effective, when managers are expected to possess superior information. In the absence of information asymmetry, accounting conservatism will be ineffective, since parties will see through managerial strategic use of conditional conservatism. Moreover, high levels of information asymmetry increases the need for conditional conservatism as effective corporate governance mechanism.

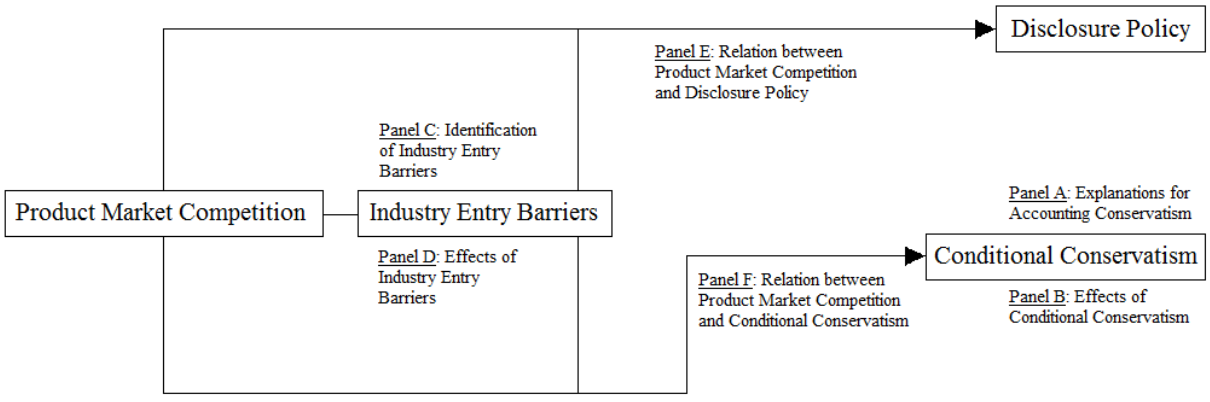
Section 2.9 of this chapter provided definitions of the concepts used in this thesis. Furthermore, it provided rationalizations for using these specific definitions in this thesis.

3 PRIOR RESEARCH

3.1 Introduction Chapter 3

This chapter provides an overview of prior research conducted that can be related to this thesis. *Section 3.2* identifies the related literature on accounting conservatism. More specifically, *section 3.2.1* (*panel A*) first identifies the different explanations for accounting conservatism, while *section 3.2.2* (*panel B*) identifies the effects of conditional conservatism on the accounting numbers, the economic decisions of the financial statement users, analysts forecasts and the information environment. After identifying the accounting literature related to accounting conservatism, the second part of this chapter focusses on the related literature on product market competition (with a primarily focus on industry entry barriers). More in particular, *section 3.3.1* (*panel C*) first identifies the different industry entry barriers identified by the literature. Subsequently, *section 3.3.2* (*panel D*) discusses literature that focusses on the effects of industry entry barriers. Following Palepu et al. (2013) who state that managers can withhold valuable information from competitors by adopting a specific disclosure policy or using specific accounting policies, this thesis first discusses literature on the relation between product market competition and disclosure (*section 3.4*; *panel E*). Subsequently, this thesis discusses the related literature on the relationship between product market competition and accounting policies adopted (*section 3.5*, *panel F*). More specifically, this section documents the related literature on the relationship between conditional conservatism and the degree of product market competition (as also analysed in this thesis). *Figure 1* provides an overview of the structure of this chapter.

FIGURE 1
Structure Literature Review



This figure represents the structure of chapter 3 (*Section 3.2-3.5*). *Panel A* refers to *section 3.2.1* of this thesis, *panel B* refers to *section 3.2.2*, *panel C* refers to *section 3.3.1*, *panel D* refers to *section 3.3.2*, *panel E* refers to *section 3.4*, *panel F* refers to *section 3.5*.

3.2 Literature on Accounting Conservatism

3.2.1 Literature on the Explanations for Accounting Conservatism

The accounting literature generally distinguishes between four alternatives that are able to explain the existence of accounting conservatism in financial reporting, i.e., the contracting explanation, the litigation risk explanation, tax motivations, and regulatory- and standard setter motivations (e.g., Watts, 2003; Qiang; 2007).

Contracting explanation:

Following the contracting explanation, accounting conservatism arises almost naturally from being an efficient contracting mechanism (Watts, 2003). In general, contracts use accounting numbers to assess managerial and company performance. Since managers deliver and are responsible for these performance measures, contracting parties demand higher verification for gains than for losses in order to prevent managerial bias and noise in the accounting numbers. Accounting conservatism is a means to prevent the overvaluation of net assets and cumulative earnings and therefore, prevents the overvaluation of managerial and company performance. Watts (2003) identifies three general circumstances that can be linked to the contracting explanation of conditional conservatism, i.e., presence of compensation contracts, debt (covenants) and corporate governance.

Firstly, with regard to compensation contracts, accounting conservatism is a means to prevent unfounded distribution of net assets to the beneficiaries of performance-based contracts. Accordingly, Iyengar & Zampeli (2010) find a significant positive association between a firm's degree of accounting conservatism and the degree to which executive pay is tied to accounting numbers, suggesting that conditional conservatism is indeed more likely to be adopted when contracts are based on accounting numbers. However, the authors interpret their results as accounting conservatism being a principle that enables a company to formulate financial compensation contracts that are more severely tied to accounting performance. Thus, Iyengar & Zampeli (2010) see accounting conservatism as a cause of these compensation contracts rather than a result of these compensation contracts.

Secondly, the presence of debt contracts is able to explain the existence of conservatism in a contracting setting. Investors that lend funds to borrowers face an asymmetric payoff with regard to the firm's net assets (Watts, 2003). On one side, these lenders will be punished when their client cannot meet the obligations by receiving an amount that is lower than the principal amount. On the other side, these lenders are not additionally compensated when the borrower's net assets increase. For this reason, providers of debt demand accounting conservatism, since accounting conservatism creates verifiable lower bound measures that enable debt investors to better assess the borrower's ability to repay the debt. In this respect, lenders can react more timely to the increase risk coming from the lender's financial distress. For instance, lenders can take timely protective action by accelerating the debt contract or by adjusting the interest rate to better reflect the underlying risk of default (Zhang,

2008). Conservatism provides furthermore increased assurance that debt covenants are met accordingly. More specifically, debt covenants protect the debtholders' interests when the lender comes in financial distress (Nikolaev, 2010). These covenants are, however, only effective when the accounting system provides timely signals of the company's economic position. Hence, the presence of debt covenants demand for accounting conservatism

Empirical evidence supports the implied positive relationship between the degree of leverage and the extent of conditional conservatism applied. Khan & Watts (2009) attempt to construct a firm-year measure of conditional conservatism. Their empirical analysis finds a significant positive association between the degree of leverage and conditional conservative reporting, which suggests that debt investors demand for conditional conservative reporting. Nikolaev (2010) finds empirical evidence that supports the notion of a positive association between debt covenants and conditional conservatism. Analysing 5,420 debt issues in the period 1980-2006, Nikolaev finds a significant positive relationship which suggests according to the authors that debt covenants create conditional conservative reporting. Moreover, Beatty et al. (2008) argue that agency costs related to debt contracts are larger for contracts that comprise more covenants, is of longer maturity, has a larger relative size to firm size, has a revolving property or is dependent on company's performance. Likewise, these debt contracts demand more conditional conservatism in order to decrease associated agency costs.

Thirdly, Watts (2003) identifies corporate governance as mechanism that demands accounting conservatism in a contracting setting. Since losses are reported more timely, conditional accounting conservatism provides more timely signals when managers are investing in negative present value projects (Watts, 2003). In this respect, shareholders and the board of directors have the ability to take appropriate actions more timely. Lara et al. (2009a) investigate the association between corporate governance and conditional conservatism for U.S. firms using both internal and external measures of corporate governance. The authors find a significant negative association between conditional conservatism and the level of antitakeover protection and board duality. This result suggests a positive association between corporate governance and conditional conservatism. Similar, Lim (2011) examines the association between various characteristics of corporate governance and the degree of accounting conservatism applied for firms in Australia. Lim (2011) only finds (rather weak) evidence that indicates a positive association between board leadership and the degree of independence of the audit committee, on one side, and the level of accounting conservatism applied, on the other side. Both results suggest that good corporate governance demands for conditional conservative accounting. However, as Lim (2011) points out, the results are heavily dependent on the institutional setting that is examined.

Litigation risk explanation:

Firms that are overstating their assets are more likely to be sued compared to firms that are understating their assets (e.g., Watts, 2003; Ball & Shivakumar, 2005; Basu, 2005). Litigation costs

arise when shareholders and stakeholders can sue a firm in order to compensate for the adverse financial consequences stemming from the firm's unrealistic representation of a firm's economic position. In this respect, companies facing high litigation risks are reluctant to overvalue their assets and disclose bad news relatively more timely in order to avoid lawsuits. Ball et al. (2003) report that the degree of conditional conservatism varies across countries due to country-specific characteristics. More specifically, the article identifies four Asian countries with highly comparable standards to U.S. accounting standards. Ball et al. (2013) argue that by selecting these countries, potential different levels of conditional conservatism across countries can be linked to differences in the institutional setting. The findings of Ball et al. (2003) suggest that differences in litigation environment are likely to account for differences in the application of conditional conservatism. Consistent with this finding, Bushman & Piotroski (2006) report similar results and find evidence that suggests that firms in countries with strong juridical structures, security laws and investor protection systems are more conditional conservative than firms in countries in weaker institutional settings. Both studies emphasize the importance of the litigation environment for a firm's policy to report losses more timely than gains. Qiang (2007) and Lara et al. (2009b) show that the litigation risk explanation for accounting conservatism explains both conditional and unconditional conservatism.

Tax motivations:

The tendency of managers to decrease tax obligations affects the degree of accounting conservatism applied. More specifically, tax-minimizing behaviour induces managers to reduce firm's book income (Watts, 2003). For example, Watts and Zimmerman (1979) state that the requirement to expense depreciation costs is the direct result of the favourable opportunity for management to deduct these expenses from taxable income. In addition, Shackelford and Shevlin (2001) point out that managers are eager to prevent large book-tax differences, and, for this reason, reductions in taxes are accompanied by decreases in book-income. Note, tax-minimizing behaviour affects *ex-ante* accounting conservatism and the accounting literature therefore generally considers tax motivations as being only the cause of unconditional conservatism (e.g., Basu, 2005, Qiang, 2007).

However, accounting conservatism itself could be an effective means to reduce the present value of tax obligations (Watts, 2003). Aggressive accounting conservative reporting results in lower current-period earnings and therefore, provides opportunities to managers to delay taxation. Following this reasoning, this thesis argues that conditional conservatism could be explained by tax motivations *ex-post*. Research of Lara et al. (2009b) supports this notion. Lara et al. (2009b) predict tax pressure to be an important determinant for the application of conditional conservatism and find evidence that suggests that managers tend to shift their expenses to earlier period to delay the payment of tax

obligations.[2] Hence, more timely recognition of losses, i.e., conditional conservatism, makes it possible to delay the payment of taxes.

Regulatory and Standard-Setter motivations:

Conservative accounting lowers the political costs for standard setters and regulators, because standard setters and regulators are less likely to be criticized when companies are understating rather than overstating their assets (Watts, 2003). For this reason, regulators pay generally more attention to the overstatement of assets rather than the undervaluation of assets and accounting conservatism could even be considered as favourable for regulators and standard setters. However, as stated in *chapter 1* of this thesis, both the IASB and the FASB made efforts to ban accounting conservatism from the financial reporting, because of its negative influence on the quality of neutrality Yet, consistent with the regulatory- and standard setter explanation for accounting conservatism, Qiang (2007) points out that standard setters still implement accounting conservatism in their standards to both decrease their political costs and to meet the demands of its constituents. Consistently, Bushman & Piotroski (2006) present evidence that suggests that firms in countries with strong public enforcement are more conditional conservative than firms in countries with weaker levels of public enforcement, suggesting that regulators still allow some degree of accounting conservatism. The regulatory- and standard setter argument is found to only explain the existence of unconditional conservatism (Qiang, 2007).

3.2.2 Literature on the Effects of Conditional Conservatism

The accounting literature has investigated the effects of the application of conditional conservatism extensively. For example, some studies investigate the association between conditional conservatism and the cost of equity (e.g., Chan et al., 2009; Lara et al., 2011), while others examine the effect of conditional conservatism on the structure of management compensation plans (Iyengar & Zampeli, 2010). In line with the general direction of this thesis, this thesis primarily discusses the effects of conditional conservatism on accounting numbers, the economic decisions of the financial statement users, analysts forecasts and the information environment of a firm, since these qualities are likely to play an important role for new competitors considering entrance to a specific market.

Ruch & Taylor (2015) provide an extensive literature review with a primarily focus on the effect of accounting conservatism on the value relevance for the financial statement users. Distinguishing between three types of users, i.e., equity investors, debt investors and corporate governance users, the authors conclude that conditional conservatism can have a significant effect on the decision usefulness of the accounting numbers. More specifically, Ruch & Taylor (2015) refer to some studies that investigate the value relevance of conditional conservatism in terms of the ability of earnings to

[2] Lara et al. (2009b) report a significant positive association between tax pressure and conditional conservatism. However, although statistically significant, the economic significance of the coefficient is marginal, suggesting that tax pressure is not a major determinant for the application of conditional conservatism.

predict future stock returns. For instance, using the recent financial crisis as natural quasi-experiment, Francis et al. (2013) find that abnormal stock returns are positively associated with the degree of conditional conservatism applied. This finding suggests that the stock market reacts more strongly for conditional accounting practices, i.e., conditional accounting practices has more value relevance for investors during the financial crisis. A recent study of Kim & Zhang (2016) documents that conditional conservatism is negatively associated with future stock price crashes, also suggesting that conditional conservatism is more value relevant for financial statement users. However, research finds that analysts are more likely to issue biased analysts' forecasts for conditional conservative accounting numbers. For example, Helbok & Walker (2004) find evidence that suggests that conditional conservatism reduces analysts' forecast accuracy, because analysts do not recognize that good and bad news are differently reflected in time. The authors argue that analysts make forecasts based on the news available and do not sufficiently anticipate news that is deferred due to the application of conditional conservatism. Similar, Bandyopadhyay et al. (2011) investigate the association between condtional conservatism and the predictability of earnings. The study shows that conditional conservatism increases the relevance of earnings, i.e., increases earnings' ability to predict future cash flows, while the application of conditional conservatism reduces the reliability of earnings, i.e., decreases earnings' ability to predict future earnings. Related to the reduced predictability of future earnings under conditional conservatism, Chen et al. (2014) examine the total effect of accounting conservatism on earnings persistence. In general, earnings are found to be less persistent during bad news periods than during good news periods (Basu, 1997). Chen et al. (2014) show that accounting conservatism reduces the total persistence of earnings and this effect is even larger for conditional conservatism when compared to unconditional conservatism.

Above studies suggest that conditional conservatism is generally negatively associated with different proxies of earnings quality. Other critics related to accounting conservatism focus on the effects of conditional conservatism on information asymmetry. In general, more timely reporting of bad news decreases information asymmetry, while deferred recognition of good news increases information asymmetry (Ruch & Taylor, 2015). LaFond & Watts (2008) examine the overall effect of conditional conservatism on information asymmetry and they report that conditional conservatism is associated with higher levels of information asymmetry. However, the authors argue that his relationship does not imply that conditional conservatism generates information asymmetry. In contrast, LaFond & Watts (2008) interpret their results as conditional conservatism being the result of information asymmetry. Lara et al. (2014) extend their research and conclude that the information environment generally increases after application of conditional conservative accounting policies.

3.3 Industry Competition and Entry Barriers

The potential of future profitability is likely to attract new competitors to the market. The likelihood of new competitors entering the market depends on the ease new competitors can enter the market. Hence, a potential competitor can be deterred from entering the market when this competitor faces substantial barriers of entry.

3.3.1 Literature on Industry Entry Barriers.

In his influential article, Porter reports six major sources of industry entry barriers (Porter, 1979). Firstly, industries in which economies of scale play a significant role force new competitors either to enter the market at large scale or to accept a cost disadvantage. Secondly, the extent of product differentiation required to create customer loyalty could become a significant entry barrier. Thirdly, the capital requirements to enter the market are important. For example, industries that require large investments in Property, Plant & Equipment (PPE) and Research & Development (R&D) are generally characterized as high entry barrier industries due to its significant capital requirements to enter the market and to compete effectively with existing competitors. Fourthly, firms could have significant cost advantages that are independent of size. For instance, firms could have significant learning economies that enable a significant reduction in production costs. Fifthly, the possibility of having access to, or setting up, a distribution channels could be key in making a market entrance decision. At last, the governmental policy could create significant barriers of entry (e.g., patents, copyrights, licences).

More recent literature identifies similar barriers of industry entry. For instance, Palepu et al. (2013) identify scale as a key industry entry barrier. In addition, Palepu et al. (2013) point out that early entrants could have a significant first mover advantages by setting the industry standards and entering into exclusive arrangements with suppliers. The possibility of learning economies in the industry, the complexity of setting up a distribution channel and customer relationships, and specific legal barriers are also considered as important barriers of entry by Palepu et al. (2013).

While above studies refer to some common entry barriers that are applicable to almost every industry, there is some literature that focusses on industry specific entry barriers. For example, Morton (2000) examines the extent to which brand advertising in the pharmaceutical industry creates an entry barrier for new competitors. Cullinan et al. (2012) investigate industry specific entry barriers related the audit market and finds that the auditing market has high entry barriers due to the difficulty of setting up customer relationships and the difficulty of keeping up with regulation and legislation. However, the authors conclude that reputation could not be considered as significant entry barrier, since companies that switch to a non-big 4 do not experience a significant negative market reaction. Moreover, Palepu et al. (2013) refer to the specific requirement of having licences as an entry barrier for the taxi industry.

3.3.2 Literature on the Effects of Industry Entry Barriers

The effects of product market competition has been widely examined in the accounting literature. Cheng et al. (2013) investigate the impact of product market competition on various different proxies of earnings quality. The authors report a significant positive association between product market competition and the persistence and predictability of earnings. These findings suggest that companies in competitive environments generally report earnings of higher quality. However, study of Markarian & Santaló (2014) shows that managers are more tended to engage in earnings management when product market competition is high. This result suggests that managers in competitive industries are more likely to adopt earnings-increasing accounting policies to increase their performance. In this respect, managers in low competitive industries (i.e., high industry entry barriers) are found to exhibit a lower propensity to adopt earnings-increasing accounting policies (Markarian & Santaló, 2014). Other studies that focus on increased scrutiny as a result of high entry barriers document similar results. Indeed, some studies find that managers adopt earnings-decreasing accounting policies when public scrutiny is high (i.e., high industry entry barriers). For instance, Cahan (1992) finds that firms subject to antitrust investigations as a result of low competitive pressures are more likely to adopt earnings-decreasing accounting policies to decrease their public and political scrutiny. A more recent study of Hsu et al. (2013) investigate the effects of public scrutiny on firm's accounting policies with regard to the petroleum oil industry. More specifically, the authors examine the effects of the explosion of an offshore drilling rig of petroleum company BP on 20 April 2010; an event that increased public awareness of the environmental risks related to the oil petroleum industry. Hsu et al. (2013) find evidence that suggests that firms competing in this industry adopted earnings-decreasing accounting policies in order to decrease their public visibility.

Other literature focuses on the managerial incentives that are provided by the level of industry competition. For example, research states that high levels of industry competition reduces managerial slack and creates incentives to maximize firm profit to prevent business failure (Schmidt, 1997). More specifically, Schmidt (1997) argues that the likelihood of business failure increases with the degree of competitive pressure. This creates incentives for managers to work harder when faced with a high potential of competition and therefore reduces managerial slack. Consistently, Giroud & Mueller (2011) find evidence that indicates that corporate governance is more beneficial, i.e., provide higher asset returns, for non-competitive industries than for competitive industries. Further analysis make the authors to conclude that this difference is the result of competitive pressures serving as effective corporate governance mechanism. Karuna (2007) refers to industry competition as a complement rather than a supplement of corporate governance. The empirical analysis of Karuna (2007) documents a significant negative association between the entry costs of an industry and the degree of equity incentives provided to managers, which suggests that firms emphasize corporate governance policies when the entry costs of an industry are low.

Other studies that investigate the effects of entry barriers on a different field find that companies in competitive industries are more likely to pay out dividend than companies in less competitive industries (He, 2012); and firms in competitive industries generally pay higher audit fees (Wang & Chui, 2015).

3.4 Product Market Competition and Disclosure

Investors and stakeholders demand additional disclosure in order to increase transparency and to increase the ability to make well-founded economic decisions (Healy & Palepu, 2001). However, the proprietary costs hypothesis argues that companies are generally reluctant to be fully transparent and consider the costs of disclosure as costly, since disclosure is likely to provide valuable information to (potential) competitors (e.g., Cho & Hao, 2011; Ellis et al., 2012). An extensive amount of research has investigated the empirical feasibility of this argument. For instance, Cho & Hao (2011) examine this argument using both measures of current competition and potential competition. Consistent with the proprietary costs hypothesis, the authors find evidence that suggests that companies facing low competition from both current rivals and potential rivals are more likely to disclose information of higher quality. Moreover, these firms are found to issue their 10-K filing more timely. Ellis et al. (2012) examine the factors that determine a firm's disclosure policy with regard to the provision of information about customers. Their analysis provides conclusive evidence that suggests that managers do take into account the related costs and benefits of disclosing additional information about their customers in making disclosure decisions. More specifically, Ellis et al. (2012) argue, on one hand, that managers consider additional disclosure as valuable input for investors. The authors find consistently that managers are more likely to disclose additional information about their customers in the years before a seasoned equity offering. On the other hand, the article reports evidence that suggests that managers consider disclosing additional information about customers as costly when proprietary costs are high, i.e., relatively high R&D and advertising expenditures. Li (2010) refers to the same trade-off that managers face in disclosing additional information. In line with the proprietary costs hypothesis, Li (2010) presents evidence that suggests that the potential of competition is negatively associated with disclosure quality. More specifically, Li (2010) finds that firms that issue more accurate forecasts (i.e., higher disclosure quality) are often competing in industries exhibiting high entry barriers. This result suggests that managers reduce the information content of voluntary disclosure, possibly to withhold valuable information from potential competitors. However, the findings of Li (2010) are mixed. The article does find that companies that compete in industries with relatively low entry barriers increase their disclosure quantity, i.e., these companies make more additional forecasts. The discussion provided by Karuna (2010) emphasizes that these findings of Li (2010) should be interpreted with care. Karuna (2010) refers to the operationalization of the different constructs in the article that are lacking sufficient validity and argues furthermore that the analysis

does not take interaction effects between current competition and potential competition sufficiently into account.

In addition, Karuna (2010) argues that the accounting literature is generally mixed because of the use of different proxies to measure industry competition. Historically, the accounting literature measures the degree of product market competition at the industry level. As a response, Li et al. (2013) construct a firm-level measure of competition based on the amount of references to competition in a company's 10-K filling. Recent study of Muiño & Nickel (2016) investigate the relationship between product market competition and the degree of corporate disclosure using both firm- and industry-level measures of product market competition. The authors find that high entry barrier industries exhibit an increasing function between industry profitability and corporate disclosure, while low entry barrier industries exhibit a u-shaped function between industry profitability and corporate disclosure. These findings suggest that proprietary costs are important for both high- and low entry barrier industries, while firms in low entry barrier industry also consider the disclosure of non-profitability as costly, since agency costs associated with this disclosure are higher. Dedman & Lennox (2013) states that the accounting literature is mixed with regard to the proprietary costs hypothesis, because the constructs of product market competition do not take into account the managerial perceptions with regard to the degree of industry competition experienced by the company. Using a survey to assess managerial perceptions of the degree of product market competition, the article demonstrates that managers of manufacturing firms are less likely to disclose information related to the sales and costs of sales when these managers feel to experience severe competition from existing rivals. Moreover, managers that perceive to compete in low entry barrier industries are reluctant to disclose the information, because the managers consider disclosure as valuable for potential rivals.

3.5 Product Market Competition and Conditional Conservatism

The relationship between product market competition and conditional conservatism has not been widely examined in the accounting literature. More in particular, research investigating the association between industry entry costs and conditional conservatism is very limited. Cheng et al. (2013) make a first attempt by examining the effect of industry concentration on different attributes of earnings quality. Defining conditional conservatism as an attribute of earnings quality, the article does not find a significant association between the degree of industry concentration and the level of conditional conservatism. Dhaliwal et al. (2014) is the first comprehensive study that investigates the potential relationship between product market competition and conditional conservatism. Using a composite measure for both current industry competition and potential industry competition, the authors find a positive association between product market competition and conditional conservatism. Moreover, Dhaliwal et al. (2014) present evidence that suggests that companies become more conditional conservative when faced with increased industry competition as a result of industry deregulation.

Furthermore, increasing public and political visibility stemming from antitrust investigations promotes conditional conservatism. These findings suggest that managers strategically adopt conditional conservative accounting policies in order to withhold valuable information in competitive industries. Haw et al. (2015) extend the study and evaluate the association between product market competition and conditional conservatism in an international setting. Using observations from 38 different countries, Haw et al. (2015) conclude that the significant positive association is more strong for countries with strong legal institutions. Furthermore, the association becomes more pronounced when the financial reporting setting of the country is of higher quality and the country requires frequent financial reporting. Their findings suggest that product market competition is not the only consideration for managers that guides their preference to report conditional conservative accounting numbers.

3.6 Conclusion Chapter 3

This chapter provided a discussion of the relevant literature for this thesis. *Table 1* presents an overview of the articles discussed.

TABLE 1

Literature overview

Panel A: Literature on the Explanations for Accounting Conservatism

Author(s)	Year	Purpose	Sample	Methodology	Results
Ball, R.; Robin, A.; Wu, J.S	**2003**	This article investigates the interaction between standards and managerial incentives in order to assess whether standards alone account for financial reporting quality.	The sample includes 2,726 annual earnings announcements for the period 1984-1996 in four countries: Hong Kong, Malaysia, Singapore and Thailand.	OLS-regression for every country based on Basu's (1997) measure of accounting conservatism. Differences in the degree of accounting conservatism should be attributable to country specific characteristics.	Although standards are almost similar across countries, country specific institutions, incentives etc. determine the level of conditional conservatism applied. For instance, conditional conservatism varies with litigation.
Beatty, A.; Weber, J.; Yu, J.J.	**2008**	This research is the first study that incorporates conservative contract modifications in the assessment of lenders' demand for accounting conservatism to evaluate the contracting explanation of accounting conservatism.	Initial sample comprising 3,641 private debt agreements that include debt covenants issued in the period 1994-2004.	OLS regression with an dependent indicator variable which is one when the covenant is modified and multiple variables approximating accounting conservatism as dependent variables.	When other explanations for conservatism are low, modifications related to debt contracts are more likely when agency costs are high. Contract modifications cannot solely fulfil the demands for accounting conservatism.
Bushman, R.M.; Piotroski, J.D.	**2006**	This article examines the influence of a country's institutional structure on managerial financial reporting incentives. The institutional setting (e.g., security laws, political and juridical structure) is expected to influence the reported accounting numbers.	Firms with required data from the Global Vantage database from 38 different countries. Sample period covers the years 1992 till 2001.	Different proxies that approximate the level of a country's institutional structure are incorporated in Basu's (1997) concept of conditional conservatism.	Firms in institutional settings that exhibit high quality juridical structures and investor protections are more conditional conservative. Moreover, firms in countries with strong public enforcement show higher levels of conditional conservatism than firms in weaker public enforcement countries.
Iyengar, R.J.; Zampeli, E.M.	**2010**	This research aims to find evidence for the contracting explanation of accounting conservatism. More specifically, the contracting explanation related to management compensation plans.	U. S. firms over the period 1994-2003, retrieved from the ExecuComp and COMPUSTAT database.	Pooled OLS regression with the difference in CEO compensation as dependent variable, and performance as independent variables. Accounting conservatism is included as interaction term.	Executive pay is more severely tied to accounting performance for firms that are more accounting conservative.

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TABLE 1 (Continued)

Khan, M.; Watts, R.L.	**2009**	The literature generally measures accounting conservatism over a period of time. Khan & Watts (2009) design a firm-year measure of accounting conservatism.	Model is tested using 115,516 observations for the period 1962-2005.	Firstly, the asymmetric earnings timeliness coefficient of Basu is estimated based on firm-specific characteristics, i.e., size, market-to-book ratio and the degree of leverage. Subsequently, the obtained coefficients are used as composition of the firm-year measure C_score.	Market-to-book value, size and the degree of leverage are significantly related to the degree of conditional conservatism applied.
Lara, J.M.; Osma, B.G.; Penalva, F.	**2009a**	Garcia Lara et al. (2009a) is the first study that incorporates both internal and external characteristics of corporate governance to assess whether there is an association between corporate governance and the degree of conditional conservatism.	Ending sample of 9,152 firm-year observations from U.S. firms for the period 1992-2003. Financial institutions are excluded.	Conditional conservatism as dependent variable is measured using one market-based measure and two accrual-based measures of accounting conservatism. Corporate governance as independent variable is measured by the level of antitakeover protection and the degree of board duality.	Conditional conservatism is negatively associated with anti-takeover protection and board duality, which suggests a positive association between good corporate governance and conditional conservatism.
Lara, J.M.; Osma, B.G.; Penalva, F.	**2009 b**	This article examines which factors determine a firm's application of conditional conservatism.	93,838 firm-year observations of 10,873 U.S. firms for the sample period 1964-2005, retrieved from the Compustat and CRSP database.	All four determinants of accounting conservatism as identified in the literature are included in an OLS-regression to examine whether these determinants are able to explain conditional conservatism.	The contracting explanation for accounting conservatism only holds for conditional conservatism. Litigation risk both explains conditional and unconditional conservatism, tax motivations and regulations also explains conditional conservatism., since managers tend to shift expenses from periods with high taxation pressure to low tax pressure periods.

Continued on next page

TABLE 1 (Continued)

Lim, R.	**2011**	This article aims to find empirical evidence that is consistent with the presumption that firms with good corporate governance are more conditional conservative (e.g., Watts, 2003).	1,008 Australian firms in 1998 and 1,042 Australian firms in 2002. With 1998 being a year before increased legislation and 2002 as being a year after increased corporate governance legislation.	Lim (2011) includes various corporate governance characteristics in Basu's model of accounting conservatism.	The article finds a positive association between corporate governance characteristics (e.g.,, board duality, independent directors) and the degree of conditional conservatism applied. However, evidence is rather weak in comparison with prior studies in other institutional settings.
Qiang	**2007**	The accounting literature is limited with regard to which explanations account for which types of accounting conservatism, i.e., conditional or unconditional conservatism. Qiang (2007) aims to find which explanations apply to which types of conservatism.	All industry and research firms in the sample period 1988-1999; final sample comprises 633 firms.	Various measures are identified that proxy for the different explanations for accounting conservatism. These variables are included in OLS-regressions with conditional (unconditional) conservatism as dependent variable.	Conditional conservatism can be explained by the contracting explanation and the litigation risk explanation. Unconditional conservatism can be explained by the litigation risk explanation, tax motivations and regulation motivation.
Nikolaev, V.V.	**2010**	Debt covenants are only expected to be effective when accounting numbers are conservative. Nikolaev (2010) aims to find empirical support for this statement.	5,420 debt issues of 2,466 over the period 1980-2006. Financial institutions excluded.	The article uses the operationalization of conditional conservatism as formulated in Basu (1997). Multiple types of debt contracts are included as independent variable in cross-sectional OLS-regression.	Debt contracts that rely on debt covenants demand more conditional conservatism.
Watts, R. L.	**2003**	The aim of this article is to provide an overview of the different explanations of accounting conservatism that are given in the literature.	Theoretical paper; discussion of relevant papers until 2003.	Discussion of relevant papers until the year 2003.	The literature generally distinguishes between four explanations for accounting conservatism. These four explanations include: 1) the contracting explanation 2) the litigation risk explanation 3) tax motivations and 4) regulatory and standard-setting explanations.

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TABLE 1 (Continued)

Zhang, J.	**2008**	The article predicts and tests the ex-ante benefits of accounting conservatism (i.e., interest rates are expected to be lower) for borrowers, Furthermore, the article tests the ex-post benefits of accounting conservatism (i.e., more timely signalling of financial distress).	Sample includes 327 firms over a sample period covering the years 1999-2000.	First, Zhang (2008) estimates a probit model to assess the association of conditional conservatism with the likelihood of debt covenant violation. Second, the article estimates a OLS-regression to find a potential association between conditional conservatism and interest rates of debt contracts.	Zhang (2008) finds evidence that support both predicted benefits of accounting conservatism to lenders and borrowers. More specifically, the likelihood of debt covenant violation increases with conditional conservatism and interest rates decrease with the degree of conditional conservatism.

Panel B: Literature on the Effects on Conditional Conservatism

Author(s)	Year	Purpose	Sample	Methodology	Results
Bandyopadhyay, S., Chen, C., Huang, A., & Jha, R.	**2011**	This article investigates the association between conditional conservatism and the quality of predictability.	Firms over the period 1973-2005, retrieved from the Compustat Industrial database and the CRSP database.	OLS regression based on auto-regression in order to determine predictability.	Conditional conservatism increases earnings' ability to predict future cash flows (i.e., relevance), while conditional conservatism reduces the earnings' ability to predict future earnings (i.e., reliability).
Chen, L. H., Folsom, D., Paek, W., & Sami, H.	**2014**	Basu (1997) finds that earnings show less persistence during bad news periods than good news periods. Chen et al. (2014) examines the *overall* effect of accounting conservatism on earnings persistence.	30,530 firm-year observations from 5,959 U.S. companies during a sample period of 1988-2010. Financial institutions excluded.	Two measures of conditional conservatism and two measures of unconditional conservatism are constructed and included in the auto-regression of earnings	Accounting conservatism reduces the persistence of earnings. This effect is higher for conditional conservatism than for unconditional conservatism. The pricing multiple is smaller under conditional conservatism.
Francis, B., Hasan, I., & Wu, Q.	**2013**	This article studies the benefits of conditional conservatism for shareholders in a specific experiment setting, i.e., during the financial crisis.	6,326 public firms in the period between October 2007 and March 2009, retrieved from Compustat and CRSP.	Firm performance is regressed on different measures of conditional conservatism.	Accounting conservatism reduces information risk and mitigates information asymmetry problems. Shareholders therefore benefit from accounting conservatism.

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TABLE 1 (Continued)

Helbok, G.; Walker, M.	**2004**	This article aims to find whether analysts anticipate condtional conservatism in making their analysts forecasts	4,454 firm-year observations between January 1990 and July, 1998, retrieved from I/B/E/S.	OLS regression with accuracy of analysts forecasts as dependent variable and conditional conservatism as independent variable.	Earnings surprises become left skewed for conditional conservative companies. These earnings surprises generally reverse in the next years. Analysts do not fully incorporate conditional conservatism in their forecasts.
Kim, J.; Zhang, L.	**2016**	Accounting conservatism is a concept of prudence within the financial reporting. This research investigates whether this prudence results in a lower likelihood of future stock price crashes.	U.S. firms from the intersection of the CRSP and COMPUSTAT database for the period 1962-2007.	OLS (rolling panel) regression with three measures of conditonal conservatism as dependent variable and firm-specific crash risk as independent variable..	Conditional conservatism is negatively associated with the likelihood of a firm's future stock price crashes. This effect is more pronounced for companies with higher information asymmetry.
LaFond, R., & Watts, R. L.	**2008**	This article examines whether information asymmetry causes companies to be conditional conservative.	20,389 firm-year observations for the years 1983-2001, retrieved from Compustat.	OLS regression in which a measure of information asymmetry is included in Basu's (1997) measure of conditional conservatism.	The level of information asymmetry is positively associated with conditional conservatism. Higher levels of information asymmetry cause higher levels of conditional conservatism.
Lara, J. M., Penalva, F., & Osma, B. G.	**2014**	This article investigates the effect of accounting conservatism on the information environment of the company.	63,597 firm-year observations from U.S. firms between 1977-2007, retrieved from CRSP and I/B/E/S.	OLS regression with different measures of conditional conservatism as independent variable and information asymmetry (i.e., bid-ask spread) as dependent variable.	An increase in conditional conservatism reduces information asymmetry in the next year.
Ruch, G. W., & Taylor, G.	**2015**	Review on the literature that documents the effects of conditional conservatism on the annual reports and the financial statement users (i.e., equity investors, debt investors, and corporate governance users).	Theoretical article; discussion of relevant papers until the year 2014.	Discussion of relevant papers until the year 2014.	Conditional conservatism is generally negatively associated with earnings quality. Conditional conservatism reduces information asymmetry for equity investors. Debt investors benefit by reduced costs of debt.

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TABLE 1 (Continued)

Panel C: Literature on Industry Entry Barriers

Author(s)	Year	Purpose	Sample	Methodology	Results
Cullinan, C. P.; Du, H.; Zheng, X. Zheng, X.	**2012**	This article aims to identify the specific entry barriers related to the audit market.	Final sample includes 293 auditor changes over the period 2003-2008.	Multivariate analysis with cumulative abnormal returns as dependent variable and auditor changes to non-big 4 companies as independent variable.	Companies that switch to non-big 4 services do not experience a significant negative market reaction.
Morton, F. M.	**2000**	This article examines whether brand advertising is an entry barrier to the pharmaceutical industry.	All U.S. drug patents in the period 1986-1991.	OLS regression with a measure of potential competition as dependent variable and advertising costs as independent variable.	Drugs with higher revenue potential attract more competition. Brand advertising costs do not function as entry barrier in the pharmaceutical market.
Palepu, K. G., Healy, P. M., & Peek, E.	**2013**	This book identifies the general entry barriers of an industry.	Theoretical article.	Theoretical article.	Industry entry barriers include scale requirements, learnings economies, legal barriers, and customer relationships.
Porter, M. E.	**1979**	This article aims to identify the sources of product market competition.	Theoretical article.	Theoretical article.	The five forces of competition comprises current competition, potential competition, bargaining power of buyers, bargaining power of suppliers, and product substitution costs.

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TABLE 1 (Continued)

Panel D: Literature on the Effects of Industry Entry Barriers

Author(s)	Year	Purpose	Sample	Methodology	Results
Cahan, S. F.	**1992**	This article investigates the effect of increased public visibility on the accounting policies that a company adopts.	48 firms under antitrust investigations conducted by the DOJ or FTC between 1970 and 1983; required data is retrieved from Compustat.	Regression based on Jones model, using panel data.	Managers of firms under monopoly-related antitrust investigations are more likely to adopt earnings-decreasing accounting policies.
Cheng, P., Man, P., & Yi, C. H.	**2013**	This article examines the impact of product market competition on the quality of earnings	9,989 firm-year observations from 976 manufacturing firms during the period1996-2005, retrieved from Compustat, CRSP and I/B/E/S database.	Cross-sectional OLS regression with different proxies of earnings quality as dependent variables and product market competition as independent variable.	The degree of product market competition is positively associated with different proxies of earnings quality (e.g., persistence, predictability, accounting conservatism). Firms in concentrated, homogeneous industries present earnings of higher quality than firms in concentrated, heterogeneous industries.
He, W.	**2012**	This article aims to find empirical support on the relationship between product market competition and the company's dividend payout policy.	35,462 firm-year observations of 2,008 Japanese firms during the period 1977-2004, retrieved the PACAP database.	Pooled time-series and cross-sectional regression with competition as independent variable and the dividend payout as dependent variable.	Firms experiencing more severe competitive pressure are more likely to pay out dividend than firms in less competitive industries.
Hsu, Y.-S., Liu, C. Z., Yang, Y.-J., & Chou, Y.-Y.	**2013**	This article investigates the market reaction to increased (environmental) public visibility.	123 firm-year observations from 69 firms (SIC code: 1311 or 2911) over the period June 2009 to 30 April 2010, retrieved from EDGAR and Compustat.	OLS regression calculating cumulative abnormal return after the incident.	The BP explosion caused a significant negative market reaction for BP and BP's industry peers.
Karuna, C.	**2007**	This article examines whether three different proxies of product market competition influences the level of incentives provided by the company.	7,556 firm-year observations from 1,579 industrial firms during the years 1992-2003, data retrieved from Compustat and CRSP.	Pooled cross-sectional, time-series OLS regression.	Companies rely more on equity incentives when the industry is more competitive. More specifically, product substitutability and the size of the market is positively associated with incentives and entry costs is negatively associated with incentives.

Continued on next page

TABLE 1 (Continued)

Markarian, G., & Santaló, J.	**2014**	This study examines whether product market competition has an effect on managerial reporting decisions. More specifically, does product market competition increases earnings management?	69,445 firm-year observations of firms with segment data available during 1989-2011, retrieved from the Compustat database.	Cross-sectional study with the level of product market competition as independent variable and different proxies of earnings management as dependent variable.	There is a significant negative association between the level of product market competition and earnings quality. This result indicates according to the authors that managers are more likely to engage in earnings manipulation when managers experience competitive pressures. When investors are able to observe real firm output, managers are forced to report consistent earnings.
Schmidt, M. K.	**1997**	This article aims to establish a theory that is able to explain the association between product market competition and managerial behaviour.	Theoretical article.	Theoretical article.	Product market competition increases managerial slack. However, the reduction of profits due to increased product market competition could reduce managerial motivation to make more efforts.
Wang, Y., & Chui, A. C.	**2015**	This article examines the empirical association between product market competition and audit fees.	4,615 firm-year observations of 796 manufacturing firms during the period 2000-2009, retrieved from the Audit Analytics database.	Cross-sectional OLS regression with audit fees as dependent variable and product market competition as independent variable.	Firms in competitive industries pay higher audit fees, because they exhibit higher business risk.

Panel E: Production Market Competition and Disclosure

Author(s)	Year	Purpose	Sample	Methodology	Results
Cho, S.Y.; Hao, H.T.	**2011**	The financial crisis created a demand for more transparent disclosure. This article examines whether the competitive environment influences managerial disclosure policies	U.S. Firms comprising 75,213 firm-year observations over a sample period of the years 1990-2009 from the Standard and Poor's Research Insight and AIMR database.	Four different proxies for industry market competition are incorporated in an OLS-regression in which the quality of disclosure and the timing of the disclosure are included as dependent variable.	Companies experiencing low competition from existing rivals and potential competitors are more willing to provide information of high quality and provide this information more timely.

Continued on next page

TABLE 1 (Continued)

Dedman, E.; Lennox, C.	**2009**	This article examines by combining survey information with archival data whether perceived competition affects managerial decisions to disclose sales and costs of sales information.	3,197 private U.K. manufacturing firms that either abbreviated or fully disclosed information about the costs of sales in the year 2004, retrieved form the FAME Database.	Logit model with a dependent variable that equals one when the firm files an abbreviated account, i.e., does not disclose.	Managerial perception of the degree of competition is negatively associated with the company's propensity to disclose information about sales and the costs of sales.
Ellis, J. A.; Fee, C.E.; Thomas, S.E.	**2012**	This article examines the factors that determine a firm's disclosure of information about customers.	184,854 firm-year observations of U.S. and Canadian Firms retrieved from Compustat. The sample period includes the period 1976-2006. Financial and utilities industries are excluded.	Logit regression with an indicator variable that equals one if the company does not disclose information about major customers and zero when otherwise. Determinants considered include advertising and r&d ratios, profit measures and whether a big four company audits the financial statements.	Firms with relatively high advertising and R&D investments are less likely to disclose information about major customers. In contrast, non-major customers are more likely to be disclosed for firms with significant proprietary costs than for firms with lower proprietary costs. Companies do disclose more information about non-major customers in the years before a seasoned equity offering.
Karuna, C.	**2010**	This article provides a discussion of the study of Li (2010) to evaluate the feasibility of the article and provide suggestions for further research.	Discussion article.	Discussion article.	The article of Li (2010) provides valuable input for the discussion on the factors that determine the issuance of management forecasts. Enhanced operationalization of the constructs could have improved the validity of the empirical analysis.
Li, F.; Lundholm, R.; Minnis, M.	**2013**	This article aims to construct a measure of competitive pressure experienced by the firm based on the amount of disclosures in the company's 10-K filing.	Intersection of the EDGAR and Compustat annual database provides 33,492 firm-year observations over a sample period of 1995-2009. Financial institutions excluded.	Li et al. (2013) count the number of references to competition in a company's 10-K filing. The authors measure the association between this count and the level of Net operating assets (NOA) and Return on net operating assets (RNOA) using OLS-regression.	NOA declines faster and RNOA is more mean reverting for companies that make more references to the competitive environment in their 10-K filing.

Continued on next page

TABLE 1 (Continued)

Li, X.	**2010**	This article aims to find empirical evidence on the effect of (potential) competition on the quality and quantity of financial reporting.	The sample comprises observations of 21.033, 6.252 and 5.961 U.S. firms over the years 1998-2006, for the profit sample, investment sample and profit & investment sample, respectively. Data is retrieved from Compustat North America and the First Call Database.	OLS-regression with different proxies of competition as independent variables and disclosure quantity and quality as dependent variables.	The threat of new competitors entering the market is positively associated with disclosure quantity and negatively associated with disclosure quality. Competition from current rivals is positively associated with disclosure quality. The reported associations are more pronounced for industry followers (compared to industry leaders).
Muiño, F., & Nickel, M.	**2016**	This article examines the association between product market competition and corporate disclosure taking into account both industry- and firm-level measures of competition.	5,179 year observations of U.S. firms for the period 2002-2007 retrieved from the intersection of the S&P Compustat database, Osiris database and the Census of Manufactures database.	OLS regression with the level of corporate disclosure as dependent variable and both firm-level and industry-level measures of competition.	Low entry barrier industries exhibit a U-shaped relationship between the level of industry profitability and corporate disclosure. High entry barrier industries exhibit an increasing function between industry profitability and corporate disclosure.

Panel F: Product Market Competition and Conditional Conservatism

Author(s)	Year	Purpose	Sample	Methodology	Results
Cheng, P., Man, P., & Yi, C. H.	**2013**	This article examines the impact of product market competition on the quality of earnings	9,989 firm-year observations from 976 manufacturing firms during the period1996-2005, retrieved from the Compustat database, CRSP and the I/B/E/S database.	Cross-sectional OLS regression with different proxies of earnings quality as dependent variables and product market competition as independent variable.	The degree of product market competition is positively associated with different proxies of earnings quality (e.g., persistence, predictability, accounting conservatism). Firms in concentrated, homogeneous industries present earnings of higher quality than firms in concentrated, heterogeneous industries.

Continued on next page

TABLE 1 (Continued)

Dhaliwal, D.; Huang, S.; Khurana, I.K.; Pereira, R.	**2014**	This research investigates whether product market competition influences the degree of conditional conservative reporting.	Firms with NYSE-, AMEX-, or NASDAQ-listed securities during a sample period of 1975-2005.	Cross-sectional regression with Basu's (1997) measure of conditional conservatism as dependent variable and different proxies of product market competition.	Conditional conservatism is positively associated with the level of competition from 1) existing competitors and 2) potential competition. Furthermore, firms that experienced deregulation of their industry (which results in higher competition) became more conditional conservative.
Haw, I.-M., Ho, S. S., Li, A. Y., & Zhang, F.	**2015**	This study examines the association between product market competition and conditional conservatism on the country-level. More specifically, the effect of a country's legal institution on the association between product market competition and conditional conservatism is examined.	84,835 firm-year observations from 38 countries from the period 1999 to 2007, retrieved from the Global Vantage database.	Cross-sectional regression.that includes different measures of conditional conservatism as dependent variable and measures of product market competition as independent variables in	Haw et al. (2015) find a significant positive association between the level of product market competition and accounting conservatism. However, this relationship holds only for firms in countries with strong legal institutions. Moreover, the association is stronger for firms in countries with financial reporting environments of high quality. The findings suggest that accounting conservatism is jointly driven by the degree of industry competition and the country's legal environment.

This table provides an overview of the related literature as discussed in *chapter 3* of this thesis. *Column 1* presents the author(s) of the article. *Column 2* provides the year in which the article was published. *Column 3* presents the purpose of the article. *Column 4* provides information about the sample, while *column 5* discusses the methodology that is used in the article. *Column 6* presents the results of the article.
The literature overview is divided in panels. *Panel A* refers to *section 3.2.1* of this thesis, *panel B* refers to *section 3.2.2*, *panel C* refers to *section 3.3.1*, *panel D* refers to *section 3.3.2*, *panel E* refers to *section 3.4*, and *panel F* refers to *section 3.5*.

4. HYPOTHESIS DEVELOPMENT

4.1 Introduction Chapter 4

This chapter establishes the different predictions that are tested in this thesis. *Section 4.2* introduces the hypotheses. Using a Libby Box, *section 4.3* presents a graphical representation of the association examined. *Section 4.4* assesses the validity of the empirical analysis, i.e., construct validity, internal validity and external validity.

4.2 Hypothesis Development

4.2.1 Hypothesis 1

The accounting literature provides different arguments that implies an association between the level of industry entry barriers and conditional conservatism (e.g., Dhaliwal et al., 2014). Historically, accounting conservatism has found its way in the financial reporting as a means to prevent noise and managerial bias in the accounting numbers (Watts, 2003), since accounting conservatism is able to reduce information asymmetry and associated agency costs significantly (e.g., LaFond & Watts, 2008; Lara et al., 2014). In this respect, conditional conservatism functions as effective corporate governance mechanism. However, research suggests that the degree of industry competition could also function as effective corporate governance mechanism. More specifically, Schmidt (1997) argues that a high competitive environment as a result of, for example, low industry entry barriers can reduce managerial slack and induces managers to maximize profit to prevent business failure. Consistently, Giroud & Mueller (2011) report that corporate governance is more beneficial for non-competitive industries than for competitive industries. These findings suggest that industry competition itself could function as effective governance mechanism. This substitution quality of (potential) industry competition as corporate governance mechanism reduces the need for conditional conservatism to function as corporate governance mechanism. Hence, this corporate governance argument predicts a positive association between the degree of industry entry barriers and conditional conservatism. Furthermore, Muiño & Nickel (2016) find that companies in low entry barrier industries are tended to disclose higher performance since agency costs are more pronounced for these companies. Hence, this finding implies a positive association between the level of industry entry costs and the degree of conditional conservatism. However, some studies refer to industry competition as being a complement to corporate governance mechanisms. For instance, Karuna (2007) documents a significant negative association between the entry costs of an industry and the degree of equity incentives provided to managers, which suggests that firms emphasize corporate governance policies when the entry costs of an industry are low. Furthermore, Smidt (1997) points out that managers could induce managerial slack due to the low profits coming from severe competitive pressure. Hence, this corporate

governance view predicts a negative association between the degree of industry entry barriers and conditional conservatism.

A strategic perspective on the application of conditional conservative accounting policies predicts a negative association between the level of industry entry barriers and conditional conservatism. New competitors that enter an industry take market share at the expense of the current industry participants and current industry participants are therefore eager to prevent new competitors from entering the market. In this respect, companies are expected to withhold potential valuable information from potential entrants. Accordingly, accounting literature suggests that companies are reluctant to provide voluntary disclosures, since these disclosures could contain valuable information for potential entrants (e.g., Li, 2010; Cho & Hao, 2011; Ellis et al., 2012). Moreover, a company could adopt earnings-decreasing accounting policies to reflect less favourable future profitability perspectives to potential competitors. Recognizing losses more timely than gains, i.e., conditional conservatism, decreases current performance and reflects less favourable future perspectives. Note that research suggests that managers are in fact able to obscure future favourable perspectives. For instance, Helbok & Walker (2004) find evidence that suggests that conditional conservatism reduces analysts' forecast accuracy and Bandyopadhyay et al. (2011) report that the predictability of earnings (i.e., the 'reliability of earnings') decreases with the degree of conditional conservatism. Thus, conditional conservatism is expected to be an effective means to reduce current and expected future performance as observed and predicted by companies that are considering entrance. Since the threat of new competitors entering the market is higher for low entry barrier industries, the need to reduce performance by means of adopting conditional conservative accounting policies is expected to be higher for these industries. Hence, the argument that focusses on the strategic application of conditional conservatism predicts a negative association between the level of industry entry barriers and conditional conservatism.

In contrast, the political cost hypothesis as formalized by Watts and Zimmerman (1978,1979) predicts a positive association between the level of industry entry barriers and the degree of conditional conservatism. The political cost argument states that firms subject to high public and political scrutiny adopt earnings-decreasing accounting policies to decrease their public visibility. For instance, Cahan (1992) finds that managers of companies under antitrust investigations are more likely to adopt earnings-decreasing accounting policies. Moreover, Hsu et al. (2013) finds that companies under increased public scrutiny stemming from environmental risks adopt earnings-decreasing accounting policies to decrease their public visibility. Cahan (1992) argues that firms that face low competitive pressure from current rivals and potential rivals are more likely to be under public and political scrutiny. Hence, firms competing in high industry entry barriers are expected to adopt earnings decreasing accounting methods to lower their public visibility. Since, firms can effectively reduce their current period earnings by recognizing losses more timely than gains, the political cost

argument predicts a positive association between the level of industry entry barriers and conditional conservatism.

Above discussion provides different predictions on a potential association between the level of industry entry barriers and the degree of conditional conservatism. For this reason, hypothesis 1 does not predict a specific direction for this association:

HYPOTHESIS 1 (ALTERNATIVE): There is a significant association between the level of industry entry costs and the application of conditional conservatism.

4.2.2 Hypothesis 2

Different companies face different levels of product market competition in the same industry. For this reason, the potential association could change when taking into account these differences in industry competition. Li (2010) distinguishes between companies that are market leaders and companies that are market followers and finds that managerial disclosure considerations in a competitive setting are even more pronounced for market followers compared to market leaders. Similar, Dhaliwal et al. (2014) document that the positive association between the company's competitive environment and the application of conditional conservatism is even more pronounced for market followers in comparison with market leaders. The authors argue that market leaders set the standards in the industry and are therefore less effected by competitive pressures.

From a strategic point of view, this thesis predicts that the level of industry entry barriers and the degree of conditional conservatism is more pronounced for market followers in comparison with market leaders, since market leaders will be less affected by the entrance of new competitors. Hence, strategic application of conditional conservatism is more needed for market followers in order to prevent new rivals from entering the market. This prediction is in line with the study of Li (2010) that finds that the disclosure considerations in settings with high competitive pressure are more pronounced for market followers than for market leaders.

In contrast, studies of Cahan (1992) and Hsu et al. (2013) find that managers tend to adopt earnings-decreasing accounting policies to decrease the public visibility of their company. Since market leaders generally exhibit higher public visibility when industry entry costs are high, this thesis expects that the association between industry entry costs and the degree of conditional conservatism is more pronounced for market leaders than for market followers. Hence, this political cost argument is predicted to only hold for market leaders.

From a corporate governance argument view, this thesis predicts that the association between industry entry costs and the degree of conditional conservatism is more pronounced for market followers than for market leaders. Following Li (2010), market followers are more affected by the threat of potential competition which decreases the need for conditional conservatism as effective

governance mechanism when industry entry costs are low. Hence, high industry entry costs are particularly important for market followers and could induce managerial slack and reduces monitoring opportunities (Schmidt, 1997), ultimately increasing the need for conditional conservatism as governance mechanism.

Above discussion leads to the following alternative hypothesis that is tested in this thesis:

HYPOTHESIS 2 (ALTERNATIVE): The association between the level of industry entry costs and the application of conditional conservatism is significantly different for market followers in comparison with market leaders.

4.2.3 Hypothesis 3

The effectiveness of conditional conservatism as means to decrease perceived performance is dependent on the degree to which financial statement users see through the strategic application of conditional conservatism. Hence, the level of information asymmetry could be an important determinant for the effectiveness of the strategic application of conditional conservatism. Bagnoli & Watts (2010) show that managers are indeed more effective in influencing industry incentives with bias reports when the level of information asymmetry is high. Moreover, study of Yu (2008) shows that companies engage in less earnings management when analyst coverage is high. These studies suggests that the level of information asymmetry determines the extent to which conditional conservatism is strategically applied in response to a threat of potential competition.

Similar arguments could be provided from a political costs view for the application of conditional conservatism in response to industry entry barriers. The effectiveness of conditional conservatism to reduce public visibility when industry entry costs are high is dependent on the extent to which regulators can see through the strategic application of conditional conservatism.

From a corporate governance perspective, this thesis also predicts that the level of information asymmetry influences the application of conditional conservatism in response to industry entry barriers. In general, high industry entry barriers could induce managerial lack and decreases monitoring possibilities (Schmidt, 1997) possibly increasing the need for conditional conservatism as corporate governance mechanism. Cohen et al. (2006) point out that self-interested decisions are likely to occur in circumstances of high information asymmetry. Similar, Yu (2008) finds that managers engage in more earnings management when analyst coverage is low. Hence, financial analysts could function as important corporate governance mechanism within a company. This thesis therefore predicts that the need for conditional conservatism as corporate governance mechanism in response to high industry entry costs is more pronounced when the level of information asymmetry is high.

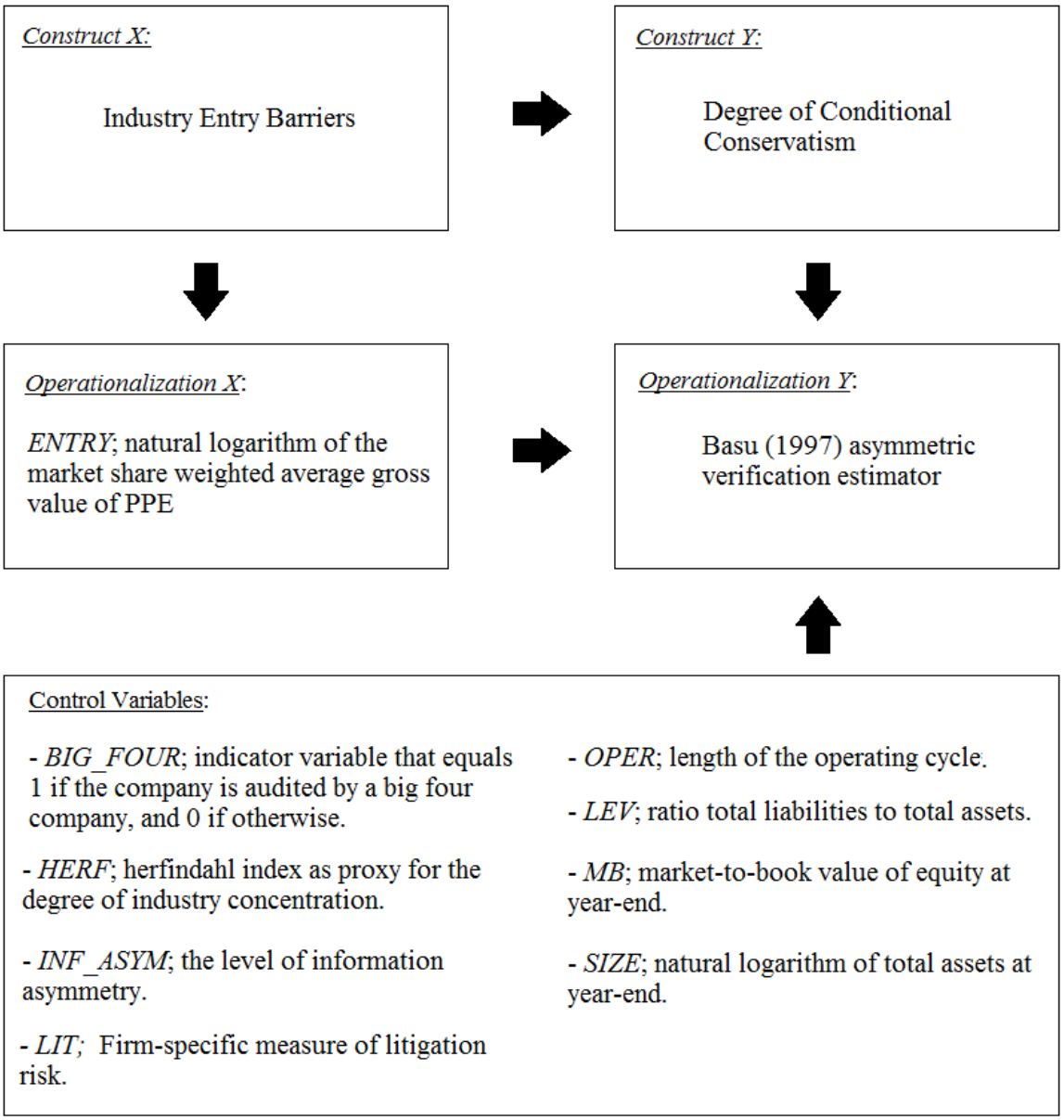
Since all perspectives predict similar directions, this thesis formulates the following hypothesis:

HYPOTHESIS 3 (ALTERNATIVE): The level of information asymmetry significantly strengthens the association between the level of industry entry costs and the degree of conditional conservatism.

4.3 Libby Box

Figure 2 presents a Libby box that graphically shows the association that is examined in this thesis. More specifically, the association between the level of industry entry barriers (*construct X*) and the degree of conditional conservatism (*construct Y*) is examined. The boxes in the second row present the operationalizations of these constructs. The remaining box includes the control variables that are used in the empirical analysis.

FIGURE 2
Libby Box



This figure presents the Libby box that shows the association examined in this thesis. The research design of the empirical analysis that is used to examine this association is discussed in *Chapter 5* of this thesis.

4.4 Validity Assessment

4.4.1 Construct Validity

Construct validity refers to the extent to which the operationalization of a construct captures the underlying construct accurately (Smith, 2011). This thesis operationalizes industry entry barriers as the industry's expenditures related to Property, Plant, and Equipment (PPE). More specifically, this thesis follows Karuna (2007) and uses the natural logarithm of the market share weighted average gross value of PPE to approximate for the level of industry entry barriers. This operationalization is plausible because Karakaya (2002) finds that managers perceive this specific industry entry barrier as most important entry barrier. Since these managers are ultimately responsible for adopting conditional conservative accounting policies, it sounds feasible to focus on this specific industry entry barrier.

However, as previously discussed in *section 3.3.1* of this thesis, capital requirements related to PPE are by far not the only industry entry barriers (Porter, 1979; Palepu et al., 2013). Moreover, some industries face some industry specific entry barriers (e.g., Morton, 2010; Cullinan et al., 2012; Palepu et al. 2013). For this reason, the operationalization of industry entry barriers is not completely accurate. Nevertheless, the operationalization is feasible, since this industry entry barrier is important for every industry.

In addition, Karuna (2010) points out that high levels of PPE does not always have to mean that the industry exhibit high barriers of entrance. Companies could increase their PPE in order to compete on a cost leadership strategy, while companies that follow a differentiation strategy do not have to face the same capital requirements related to PPE in order to enter the market..

The degree of conditional conservatism is operationalized using the measure as formalized in Basu (1997). This measure has extensively been used in the accounting literature and is generally seen as a feasible measure to reflect the asymmetric verification requirement of bad news versus good news. In contrast to most studies in which earnings is regressed as independent variable (e.g., earnings-response coefficients), Basu (1997) includes accounting income as dependent variable. The independent variable, stock return, captures news about the value of the company. Basu (1997) documents that conditional conservatism is present when accounting income reacts stronger to decreases in the value of the company (i.e., bad news) as to increases in company's value (i.e., good news). This reverse regression model is feasible when current share returns reflect information other than earnings that becomes available during the period and this information could be reflected in the earnings of that period (Ryan, 2006). The operationalization of Basu (1997) is the most common measure of conditional conservatism in the accounting literature, and an extensive amount of studies has pointed out some difficulties related to this operationalization (e.g., Ryan, 2006; Dietrich et al., 2007; Givoly et al., 2007; Ball et al., 2013). This thesis provides a further discussion on these articles in *section 5.4.2* of this thesis.

4.4.2 Internal Validity

Internal validity refers to the credibility of the study in capturing a causal association between the independent and dependent variable after eliminating all alternative hypotheses (Modell, 2005; Smith, 2011). Research on conditional conservatism is generally considered to exhibit relatively low internal validity. This thesis put much effort to eliminate other potential hypotheses by including specific control variables that account for other explanations for the existence of conditional conservatism as identified in *section 3.2.1* of this thesis. Furthermore, the empirical analysis takes into account the other factors that are found to influence the application of conditional conservatism as identified in *chapter 3* of this thesis.

The article of Dhaliwal et al. (2014) refer to a specific internal validity issue. The authors argue that the operationalization of conditional conservatism gives rise to a specific errors-in-variables problem (see also, Ball et al. 2013). A high earnings potential that is possibly coming from high industry entry barriers, may not be incorporated in the earnings, while this potential could already be reflected in the stock prices of the company. This asymmetric reflection of information in time could therefore result in a statistical positive association between the level of industry entry barriers and the application of conditional conservatism. This thesis addresses this errors-in-variables problem by following the suggestion of Ball et al. (2013) to incorporate firm-fixed effects. Firm fixed effects effectively address the bias stemming from the correlation between the expectations of earnings and the information contained in share returns. Hence, including firm-fixed effects improves the internal validity of the analysis. A further discussion on this matter is provided in *chapter 5* of this thesis.

4.4.3 External Validity

External validity refers to the extent to which the results can be applied to other settings (Smith, 2011). More in particular, external validity refers to the extent to which the results of the sample are generalizable to different constructs, populations, and times (Binberg et al., 1990). The results exhibit generally high external validity since the sample includes almost all U.S. firms with all data available (the sample selection process excludes some industries and firms from the sample). However, the results are not likely to be applicable to other institutional settings. Bushman & Piotoski (2006) find that firms in institutional settings that exhibit high quality juridical structures and investor protections are more conditional conservative. Moreover, Haw et al. (2015) report that the association between product market competition and conditional conservatism is dependent of the country's legal and financial reporting environment. These results question the applicability of the findings of this thesis to other institutional settings. Moreover, companies are required to have shown both positive and negative results during the sample period in order to have the ability to measure the degree of conditional conservatism Therefore the extent to which the findings are applicable to firms that show only positive (negative) earnings during the sample period is ambiguous.

4.5 Conclusion Chapter 4

This chapter established the different hypotheses that are tested in this thesis. Firstly, this paper will test the association between the level of industry entry barriers and conditional conservatism. Secondly, this thesis will distinguish between market leaders and market followers to assess potential differences in the tested association. Thirdly, this paper will examine whether the level of information asymmetry affects the association between the level of industry entry costs and conditional conservatism. The association examined is graphical presented in a Libby box. At last, this chapter provided an assessment of different validity measures related to the empirical analysis.

5. RESEARCH DESIGN

5.1 Introduction Chapter 5

This chapter discusses the research design of the empirical analysis that is conducted. *Section 5.2* discusses the sample period and sample selection procedure of this thesis. Subsequently, *section 5.3* provides a discussion of the variables used. The regression models are introduced in *section 5.4* of this thesis. This section also covers a discussion on the feasibility of the regression model. *Section 5.5* discusses the winsorizing procedure that is adopted and *section 5.6* covers the econometric issues related to the empirical analysis in this thesis. *Section 5.7* concludes.

5.2 Sample

5.2.1 Sample Period

The introduction of the Sarbanes Oxley (SOX) Act in the U.S. in 2002 resulted in a demand for more transparency in the financial reporting of companies in order to decrease information asymmetry between managers and the financial statement users (Alam & Petruska, 2012). In this respect, increased transparency is likely to affect the potential of conditional conservatism to be applied as a means to strategically adopt conditional conservative accounting policies to reduce perceived company performance. Moreover, increased transparency could reduce the need for conditional conservatism as corporate governance mechanism and decreases agency costs.

For this reason, this thesis investigates the potential association between industry entry barriers and conditional conservatism in a post-SOX context. In addition, Lobo & Zhou (2006) document an increase in conditional conservatism for U.S. firms after the passage of the SOX Act, which suggests that managers are increasingly willing to report losses more timely compared to gains in a post-SOX setting. Due to the significant difference in the level of conditional conservatism in pre- and post-SOX settings, this thesis examines only the latter period. More specifically, the sample starts from the year 2003. The ending year of the sample is 2014, since not all required data is available for later years. This thesis obtains also data from the prior years 2000-2002, since multiple variables in the regression require lagged variables,

5.2.2 Sample Selection

The initial sample results from the intersection of the Compustat and the CRSP database. The Compustat database provides information about the company's balance sheet items and the income statement items, while the CRSP database provides required data about share prices and stock returns. The intersection procedure results in 56,003 firm-year observations of 6,848 individual U.S. firms for the years 2003-2014. Subsequently, this thesis intersects this main file with data from the Audit Analytics database. The Audit Analytics database is required to determine whether a company is audited by a big four company in the given period. This intersection procedure yields a total of 5,555 individual U.S. firms with 49,235 firm-year observations over the period 2003-2014. Next, the resulting sample is intersected with data from the I/B/E/S database. The I/B/E/S provides information

about analysts' forecasts and is used to compute the level of analyst coverage. The intersections results in a starting sample comprising 29,788 firm-year observations of 4,236 individual U.S. companies, adjusted for duplicate observations.

From this sample, this thesis excludes firms with a book value of total assets smaller than $100,000. The rationale behind this decision is that these firms could significantly bias the measurement of some variables, e.g., the measurement of sales growth, stock return and earnings per share. In addition, these firms are less likely to be effective in deterring market entrance since new entrants are more likely to make an entrance decision based on significant market participants. Financial institutions (SIC: 6000-6999) are excluded from the sample since these institutions are bound to different rules and regulations (Nikolaev, 2010; Chen et al., 2014). This thesis excludes additionally the firms that compete in the utility (e.g., transportation services, electricity companies etc.) industry (SIC: 4000-4999) since this industry is highly regulated (Dhaliwal et al., 2014). Moreover, this thesis excludes firms that are not classifiable to a specific industry (SIC: 9900-9999), since this thesis is unable to determine the industry in which the firm is competing. The inclusion of companies with fiscal-year endings other than in December will bias the measurement of the abnormal stock return (variable AR) since the measurement period of this variable begins in April of year *t* and ends in March of year *t-1*. This thesis therefore excludes firms with fiscal year-endings other than December. Above decisions result in a sample of 12,103 firm-year observations of 1,794 individual U.S. firms.

This thesis drops firm-year observations from the sample that are missing values on the required variables. A total of 1,492 firm-year observations (251 firms) is excluded from the sample because these observations miss values on the main variables (i.e., Y_t, AR_t, D_t and $ENTRY_{t-1}$). Moreover, 2,949 firm-year observations (384 firms) are excluded, because the observations missed values on the required control variables (i.e., Big_Four_{t-1}, $HERF_{t-1}$, INF_ASYMt_{-1}, $LITt_{-1}$, $LEVt_{-1}$, BM_{t-1}, $Size_{t-1}$). At last, since the asymmetric recognition of good news ($AR_t > 0$) versus bad news ($AR_t < 0$) can only be measured when a firm provides both negative and positive returns over the sample period, this thesis requires that a firm experienced at least one positive (negative) abnormal stock return during the sample period. The ending sample comprises 7,117 firm-year observations from 896 individual U.S. firms, for the period 2003-2014. *TABLE 2* provides a summary of the sample selection procedure.

5.2.3 Sample Division

Hypothesis 2 distinguishes between market leaders and market followers. Following Li (2010) and Dhaliwal et al. (2014), this thesis defines market leaders as the firms that have an industry market share which is in the top quantile of the industry at year *t*, and where an industry is defined according to its 3-digit SIC code. Market followers are defined as the firms that have a market share at the lowest three quantiles of the industry at year *t*, and where an industry is defined according to its 3-digit SIC

TABLE 2
Sample Selection Procedure

	Firms	**Firm-Year Observations**
Intersection Procedure:		
Intersection Compustat and CRSP databases, over the period 2003-2014.	*6,848*	*56,003*
• *Intersection Audit Analytics database*	*(1,293)*	*(6,768)*
• *Intersection I/B/E/S database*	*(1,319)*	*(18,362)*
Selection Procedure:		
Initial sample over the period 2003-2014, after intersection procedure and dropping duplicate firm-year observations.	**4,236**	**29,788**
• *Less:* Firm observations with total assets smaller than $100,000.	(519)	(2,788)
• *Less:* Financial institutions (SIC 6000-6999)	(891)	(6,309)
• *Less:* Utility industry (SIC: 4000-4999)	(395)	(3,051)
• *Less:* Non classifiable firms (SIC: 9900-9999)	(13)	(78)
• *Less:* Firms with fiscal-year ends other than December	(624)	(5,459)
Sample over the period 2003-2014	1,794	12,103
• *Less:* Missing values on main variables	(251)	(1,492)
• *Less:* Missing values on control variables	(384)	(2,949)
• *Less:* Firms with firm-year observations that exhibit only positive (negative) abnormal stock returns over the period 2003-2014	(263)	(545)
Ending sample over the period 2003-2014	**896**	**7,117**

This table provides an overview of the sample selection procedure. Numbers in brackets are subtracted from the numbers to obtain the ending sample that is used in the empirical analysis of this thesis.

code. The decision to use a 3-digit SIC code classification is the same as further explained in *section 5.3.1* of this thesis.

5.3 Variables

5.3.1 Industry Entry Costs (*ENTRY*)

The level of industry entry costs (*ENTRY*) is measured following Karuna (2007) that approximates for the level of industry entry costs by measuring the minimal investments required to enter the industry. More specifically, this thesis follows Karuna (2007) by taking the natural logarithm of the market share weighted average gross value of Property, Plant and Equipment, in which the market share is computed using the ratio of company sales to total sales of the industry. A further discussion on the validity of this measure as operationalization of industry entry barriers (i.e., construct validity) is provided in section *4.4.1* of this thesis.

This thesis determines the level of *ENTRY* using the Compustat database. First, all firms are sorted by their three digit SIC code (Standard Industry Classification). There is decided to filter on three digits since less digits could provide ambiguity about whether these firms truly compete with each other. Reliance on a four digit SIC code could be more accurate, however, the assessment of industry entry costs will be based on a (too) little amount of companies, potentially leading to inaccurate estimations of the industry entry costs. After sorting companies by their three digit SIC code, this thesis determines the industry market share of each company by dividing company sales (Compustat Item 12) by the total sales of the industry (aggregation of Compustat Item 12 for each industry) to which the firm is attributed. A company's market share is multiplied by the company's value of gross PPE (Compustat Item 7) and these amounts are aggregated for every industry (i.e., three digit SIC industry). At last, this thesis takes the natural logarithm of the values to mitigate heteroscedasticity concerns. Note that the construction of the variable *ENTRY* is done before excluding any firms from the sample (i.e., before merging and dropping firm-year observations due to missing values on other variables). This procedure lead to a more valid estimation of the industry entry costs, since these firms –although not valid for the empirical analysis- still compete in the industry.

5.3.2 Control Variables

The control variables in this thesis comprises some general firm-characteristics that are found to be significantly associated with the level of conditional conservatism applied by the company.

LEV represents the ratio of total liabilities to total assets. Studies of Khan & Watts (2008); Zhang (2009); and Nikolaev (2010) document a significant positive association between the degree of leverage and the level of conditional conservatism, suggesting that debt contractors demand conditional conservatism. This thesis determines the degree of leverage by dividing the amount of total liabilities (Compustat Item 181) by the amount of total assets (Compustat Item 6).

SIZE is the natural logarithm of total assets at year-end (Compustat Item 6), which is included since Khan & Watts (2008) find that large firms are less conditional conservative.

BM is the market-to-book ratio of a company's equity at year-end. The accounting literature related to conditional conservatism generally includes the market-to-book value of equity in the regression, since its approximates for the level of unconditional conservatism (e.g., Lim, 2011; Francis et al., 2013; Lara et al., 2014). Beaver & Ryan (2005) point out that the degree of unconditional conservatism influences the possibilities for a company to be conditional conservative. For instance, a depreciable asset that is capitalized at conservative historical costs reduces the possibilities to adopt conditional conservative depreciation methods because the depreciable value is lower. The market-to-book value of a company is determined by dividing the product of the firm's share price and the amount of shares outstanding (Compustat Item 24 * Compustat Item 25) by the book value of equity (Compustat Item 216).

BIG_FOUR is an indicator variable that equals 1 if the firm is audited by a big four firm, and equals 0 when otherwise. Lee et al. (2006) find that firms become more conditional conservative when these companies are audited by a big four company. Big four firms generally exhibit an increased focus towards reputation and are subject to greater public scrutiny (Kim et al., 2003). Moreover, litigation risks for big four companies are generally more pronounced. Research by Kim et al. (2003) find that big four companies allow more earnings-decreasing accounting policies, which suggests that big four companies allow more conditional conservatism.Information about the company's auditor is retrieved from the AuditAnalytics database (AuditAnalytics item 3).

LIT is a measure that captures the degree of litigation risk of the company. Companies that exhibit higher litigation risk are more conditional conservative, since more timely recognition of losses reduces the risk of being sued (Watts, 2003; Ball & Shivakumar, 2005; Basu, 2005). This thesis operationalizes the level of litigation risk following Kim & Skinner (2005). Kim & Skinner (2005) compute a firm-specific measure of litigation risk by combining firm-characteristics with industry membership indicator variables to obtain an overall measure of the level of the company's litigation risk. Kim and Skinner (2005)'s calculation of litigation risk (including data items used) is further specified in *Appendix A* of this thesis.

$OPER_t$ approximates for the firm's length of the operating cycle, which is included since firms with short operating cycles exhibit less possibilities to be conditional conservative in the conservatism measure of Basu (1997). This thesis takes the current period operating cycle length since this thesis expects that the measure of the operating cycle is closely related to the variables AR_t and D_t in the regression model. This thesis follows the operationalization as used in Bernstein (1990) (see also Dechow ,1994).

$$OPER_t = \left(\frac{(ACC\_REC_t + ACC\_REC_{t-1})/2}{Sales_t/360}\right) + \left(\frac{(INV_t + INV_{t-1})/2}{Cogs_t/360}\right) \qquad \textit{(Equation 1)}$$

In which ACC_REC_t (Compustat Item 2) is the amount of accounts receivable as reported in year *t*, and INV_t (Compustat Item 3) is the value of the inventory as reported in year *t*. The variables $Sales_t$ (Compustat Item 12) and $Cogs_t$ (Compustat Item 41) represent the level of sales and the cost of goods sold, respectively, as reported in year *t*. Hence, the first term estimates the number of daily sales in the average account receivables; and the second term measures the daily cost of goods sold in the average inventory. Subsequently, this thesis takes the natural logarithm of the value as a common means to mitigate the effects heteroscedasticity.

This thesis includes the variable *HERF* that accounts for the level of current industry competition, as a response to the criticism posited by Karuna (2010). Karuna (2010) points out that the prospect of high industry competition could serve as industry entry barrier and argues therefore that a measure of current industry competition should be included to avoid a correlated omitted variable problem. The Herfindahl-Hirschman Index (*HERF*) is calculated by taking the squared market shares of each company across each 3-digit SIC industry in which the market share is computed using the ratio of company sales (Compustat Item 12) to total industry sales (aggregation of Compustat Item 12 for each industry). Relatively high values of *HERF* indicate low industry concentration, i.e., low industry competition from current rivals. Similar to the variable *ENTRY*, this thesis determines the level of *HERF* before merging databases and dropping firm-year observations in order to increase the validity of the variable.

At last, this thesis includes *INF_ASYM* in the regression model in order to capture the level of information asymmetry that is related to the company. The level of information asymmetry is included in the regression model, since LaFond & Watts (2008) report that the level of information asymmetry affects the level of conditional conservatism applied by the company. Moreover, managers exhibit superior information which make it more difficult for financial statement users to assess the company true performance. This thesis constructs a simple measure of information asymmetry following Armstrong et al. (2011) by computing the number of sell-side analysts that issue one-year-horizon earnings forecasts of that firm. The rationale behind this operationalization of information asymmetry can be twofold. On one hand, analysts are *ex-ante* more likely to follow companies that exhibit low levels of information asymmetry (e.g., Bushman & Piotroski, 2005; Yu, 2008). On the other hand, analyst coverage is found to enhance the information environment and therefore results *ex-post* in lower information asymmetry between managers and financial statement users (e.g., Armstrong et al., 2011). This thesis determines the level of information asymmetry based on information from the I/B/E/S database. More specifically, I/B/E/S item 16 (see Summary History of the I/B/E/S database) with the requirement that the forecast period equals one year, provides the number of analysts that issued an one-year forecast of earnings per share of that specific company. In order to facilitate the interpretation of the variable *INF_ASYM*, this thesis multiplies the number of analysts with the factor -1. As a consequence, high analyst coverage equals lower values of *INF_ASYM*.

5.4 Regression Model

5.4.1 Basu (1997) 's Model of Conditional Conservatism

This thesis uses the regression model as formulated by Basu (1997) to examine the potential association between the level of industry entry costs and the degree of conditional conservatism. This regression model is as follows:

$$Y_t = \beta_0 + \beta_1 D_t + \beta_2 AR_t + \beta_3 D_t * AR_t + \varepsilon$$

(Equation 2)

In which:

Y_t	The earnings per share (before extraordinary items) as reported in year *t*, scaled by the price of one share at year *t-1*.
AR_t	The abnormal stock return of firm *i* (R_t minus R_m).
R_t	The compounded stock return of firm *i* in the period beginning in April of year *t* and ending in March of year *t+1*. Data is retrieved from the CRSP Monthly Return File (variable name RET).
R_m	The compounded market return for firm *i* in the period beginning in April of year *t* and ending in March of year *t+1*, in which the equal-weighted index (including distributions) from the CRSP Monthly Return File is used as market index (variable name EWRETD).
D_t	Indicator variable which is equal to 1 when $AR_t < 0$ (i.e., bad news) and equals 0 when otherwise (i.e., good news).

The regression model of Basu (1997) includes accounting income as dependent variable and abnormal stock return as independent variable. Hence, this reversed regression model measures whether changes in the value of the company is captured by earnings numbers. Conditional conservatism is present when accounting income reacts stronger to decreases in the value of the company (i.e., bad news) as to increases in company's value (i.e., good news).

Coefficient β_2 estimates the extent to which good news is reflected in the earnings of the company. Coefficient β_3 measures the incremental reaction to bad news, whereas a significant positive coefficient on β_3 indicates that bad news is reflected earlier in earnings than good news. Hence, β_3 captures the asymmetric verification quality of conditional conservatism. Note, the regression model makes the implicit assumption that current share returns reflect information other than earnings that becomes available during the period, while this information could be reflected in the earnings of that period (Ryan, 2006).

This thesis extends the model of Basu (1997) as presented in E*quation 2* by including the variable of interest and control variables that are found to affect the degree of conditional conservatism. The

following cross-sectional Ordinary-Least-Squares regression model is estimated for the first and second hypothesis:

$$Y_t = \beta_0 + \beta_1 ENTRY_{t-1} + \beta_2 BIG\_FOUR_{t-1} + \beta_3 HERF_{t-1} + \beta_4 INF\_ASYM_{t-1} + \beta_5 LIT_{t-1} + \beta_6 OPER_t + \beta_7 LEV_{t-1} + \beta_8 BM_{t-1} + \beta_9 SIZE_{t-1} + \beta_{10} D_t + \beta_{11} D_t * ENTRY_{t-1} + \beta_{12} D_t * BIG\_FOUR_{t-1} + \beta_{13} D_t * HERF_{t-1} + \beta_{14} D_t * INF\_ASYM_{t-1} + \beta_{15} D_t * LIT_{t-1} + \beta_{16} D_t * OPER_t + \beta_{17} D_t * LEV_{t-1} + \beta_{18} D_t * BM_{t-1} + \beta_{19} D_t * SIZE_{t-1} + \beta_{20} AR_t + \beta_{21} AR_t * ENTRY_{t-1} + \beta_{22} AR_t * BIG\_FOUR_{t-1} + \beta_{23} AR_t * HERF_{t-1} + \beta_{24} AR_t * INF\_ASYM_{t-1} + \beta_{25} AR_t * LIT_{t-1} + \beta_{26} AR_t * OPER_t + \beta_{27} AR_t * LEV_{t-1} + \beta_{28} AR_t * BM_{t-1} + \beta_{29} AR_t * SIZE_{t-1} + \beta_{30} D_t * AR_t + \beta_{31} D_t * AR_t * ENTRY_{t-1} + \beta_{32} D_t * AR_t * BIG\_FOUR_{t-1} + \beta_{33} D_t * AR_t * HERF_{t-1} + \beta_{34} D_t * AR_t * INF\_ASYM_{t-1} + \beta_{35} D_t * AR_t * LIT_{t-1} + \beta_{36} D_t * AR_t * OPER_t + \beta_{37} D_t * AR_t * LEV_{t-1} + \beta_{38} D_t * AR_t * BM_{t-1} + \beta_{39} D_t * AR_t * SIZE_{t-1} + \varepsilon$$

(*Equation 3*)

The coefficient of interest is β_{31} since this coefficient captures whether entry costs affects the incremental earnings reaction to bad news. Coefficients β_{32} till β_{40} reflect the effects of the different control variables on the incremental earnings response to bad news.

Hypothesis 3 requires an interaction term with industry entry costs ($ENTRY_{t-1}$) and the level of information asymmetry (INF_ASYM_{t-1}). The following regression model is estimated:

$$Y_t = \beta_0 + \beta_1 ENTRY_{t-1} + \beta_2 ENTRY_{t-1} * INF\_ASYM_{t-1} + \beta_3 BIG\_FOUR_{t-1} + \beta_4 HERF_{t-1} + \beta_5 INF\_ASYM_{t-1} + \beta_6 LIT_{t-1} + \beta_7 OPER_t + \beta_8 LEV_{t-1} + \beta_9 BM_{t-1} + \beta_{10} SIZE_{t-1} + \beta_{11} D_t + \beta_{12} D_t * ENTRY_{t-1} + \beta_{13} D_t * ENTRY_{t-1} * INF\_ASYM_{t-1} + \beta_{14} D_t * BIG\_FOUR_{t-1} + \beta_{15} D_t * HERF_{t-1} + \beta_{16} D_t * INF\_ASYM_{t-1} + \beta_{17} D_t * LIT_{t-1} + \beta_{18} OPER_t + \beta_{19} D_t * LEV_{t-1} + \beta_{20} D_t * BM_{t-1} + \beta_{21} D_t * SIZE_{t-1} + \beta_{22} AR_t + \beta_{23} AR_t * ENTRY_{t-1} + \beta_{24} AR_t * ENTRY_{t-1} * INF\_ASYM_{t-1} + \beta_{25} AR_t * BIG\_FOUR_{t-1} + \beta_{26} AR_t * HERF_{t-1} + \beta_{27} AR_t * INF\_ASYM_{t-1} + \beta_{28} AR_t * LIT_{t-1} + \beta_{29} AR_t * OPER_t + \beta_{30} AR_t * LEV_{t-1} + \beta_{31} AR_t * BM_{t-1} + \beta_{32} AR_t * SIZE_{t-1} + \beta_{33} D_t * AR_t + \beta_{34} D_t * AR_t * ENTRY_{t-1} + \beta_{35} D_t * AR_t * ENTRY_{t-1} * INF\_ASYM_{t-1} + \beta_{36} D_t * AR_t * BIG\_FOUR_{t-1} + \beta_{37} D_t * AR_t * HERF_{t-1} + \beta_{38} D_t * AR_t * INF\_ASYM_{t-1} + \beta_{39} D_t * AR_t * LIT_{t-1} + \beta_{40} D_t * AR_t * OPER_t + \beta_{41} D_t * AR_t * LEV_{t-1} + \beta_{42} D_t * AR_t * BM_{t-1} + \beta_{43} D_t * AR_t * SIZE_{t-1} + \varepsilon$$

(*Equation 4*)

Coefficient β_{34} captures the effects of industry entry costs on the application of conditional conservatism. The coefficient β_{35} measures whether the level of information asymmetry strengthens the association between industry entry costs and conditional conservatism.

5.4.2 Feasibility Regression Model

A limited amount of studies has aimed to enhance the regression model of Basu (1997). For instance, Ball et al. (2005) discuss the possibility to include percentile regressions instead of linear regression to improve the regression model; whereas Collins et al. (2014) extend the regression model by solely focusing on accruals. However, as Basu (2005) points out, none of these improvements are likely to enhance the empirical analysis significantly and these improvements can generally be considered as rather ad-hoc. For this reason, the thesis uses the original model of Basu (1997). Yet, with this decision, it is important to take into account the inherent limitations of the Basu (1997) regression model as identified in the accounting literature. For instance, Dietrich et al. (2007) argue that stock returns are dependent on the firm's disclosure policy and are unlikely to capture only non-earnings information. In addition, Beaver & Ryan (2005) document that the model for conditional conservatism is heavily dependent on the company's application of unconditional conservatism. Moreover, Givoly et al. (2007) argue that it is often difficult to measure conditional conservatism empirically since multiple effects are aggregated in returns and earnings. Ryan (2006) reports that this limitation is especially severe due to the aggregated nature of accounting numbers. At last, research suggests that the Basu (1997) measure of conditional conservatism exhibits little consistency over time (Ryan, 2006).

5.4.3 Enhancements Regression Model

This thesis incorporates multiple measures to address the issues mentioned above. Firstly, this thesis responds to the criticism of Beaver & Ryan (2005) which states that the level of conditional conservatism is heavily dependent on the level of unconditional conservatism. More specifically, this thesis includes a variable that captures (a certain degree of) unconditional conservatism (i.e., book-to-market value of equity) to address the concerns raised by Ryan (2006). In addition, since Beaver & Ryan (2005) document that the measure of conditional conservatism could be inconsistent over time, this thesis limits the period examined to the years 2003-2014. Patatoukas & Thomas (2013) report a bias in the measure of firm-level conditional conservatism stemming from the effects of scale. More specifically, the authors report a significant negative association between deflated mean earnings and the variance in stock returns which gives rise to a pervasive bias in the measure of conditional conservatism. Patatoukas & Thomas (2013) report that this bias explains the inconsistency of conditional conservatism over time (as also reported in Ryan, 2006) and between firms. Ball et al. (2013) respond to these findings and present evidence that demonstrates that the inclusion of firm-fixed effects addresses the bias. Firm-fixed effects effectively address the bias stemming from the correlation between the expectations of earnings and the information contained in share returns (Ball

et al., 2013). This thesis follows the suggestion of Ball et al. (2013) to include firm-fixed effects in the regression model. *Section 5.6.*1 of this thesis finds evidence that supports this decision.

5.5 Variable Preparation

This thesis winsorizes all continuous variables at the 1st and 99th percentile to mitigate the bias in the empirical analysis stemming from outliers. *Appendix B* provides further analysis of the effects of the winsorizing procedure on the distribution of the variables.

5.6 Econometric Issues

5.6.1 Model Fit

Before testing any assumptions of OLS-regression, this thesis evaluates the model fit of the regression model. The omission of a variable could result in biased coefficients for the other variables in the regression model unless the omitted variable is not correlated with the other variables (Brooks, 2008). For this reason, it is important to examine whether the regression model exhibits a correlated omitted variable problem. The possible presence of a correlated omitted variable problem is tested using the Link Test. The results of this test are presented in *Appendix C Table 8 Panel A* and suggests that the regression does seem to exclude some correlated variables. This thesis additionally performs the Ramsey Regression Equation Specification Error Test (see Ramsey, 1969) to gather additional evidence on the presence of a correlated omitted variable bias. The results of this test are presented in *Appendix C Table 8 Panel B* and support the presumption of a correlated omitted variable bias.

Ball et al. (2013) also refer to a correlated-omitted variable problem in the measurement of conditional conservatism. More specifically, Ball et al. (2013) attribute the correlated-omitted variable bias as being the consequence of the failure of Basu's (1997) conservatism model to control for expected earnings. Ball et al. (2013) argue that the inclusion of fixed effects could effectively mitigate the correlated omitted variable problem. This thesis therefore decides to include fixed effects in the regression model. However, before including these fixed effects, the appropriateness of inclusion for this specific case is examined. In order to determine whether a fixed effects model is appropriate, this thesis conducts the Hausman test (Hausman, 2008). The Hausman test requires to run both a regression model without fixed effects (i.e., a random effects regression model) and a regression model with fixed effects included (i.e., a fixed effects model). Potential differences between the coefficients of the models result in a p-value on which one can potentially reject the null hypothesis which states that the random effects model is appropriate (in favour of the alternative hypothesis which states that the fixed effects model is appropriate). The conduct of the Hausman test results in a p-value of <0.000, indicating that fixed effects should be included to make the regression model more valid.

Subsequently, this thesis investigates whether the correlated omitted variable bias is mitigated by the inclusion of fixed effects, as proposed by Ball et al. (2013). The results, as presented by *Appendix C Table 9*, suggest that the correlated omitted variable bias is not completely solved by the

inclusion of fixed effects. The use of instrumental variables could solve the problem of endogeneity (Moore et al., 2011). However, it is extremely difficult –if not impossible- to find instrumental variables for these specific variables. For this reason, this thesis argues that the correlated omitted variable bias is inherent for the regression model, since it is difficult –or even impossible- to account in cross-sectional analysis for all variables that affect the level of conditional conservatism. The coefficients will be still interpretable, yet with caution.

Although the inclusion of fixed effects does not mitigate the correlated omitted variable problem, this thesis still decides to include firm-fixed effects, since the Hausman test presents evidence that indicates that fixed effects model is preferred above a random effects model (*Appendix C Table 10*).

5.6.2 Assumptions OLS-regression

The empirical analysis that is conducted in this paper uses Ordinary Least Squares (OLS) regression. OLS-regression has some specific assumptions that underlie the basics of the regression. Firstly, OLS-regression requires that the distribution of the residuals has a mean of zero. Secondly, the variance of the residuals should be constant over the values of the independent variable, i.e., homoscedasticity. Thirdly, OLS-regression requires independence of the residuals, i.e., no autocorrelation between the residuals. Fourthly, the relationship between the x-variates and the outcome variable should be linear. Brooks (2008) refers to a fifth requirement to make conclusions about the population parameters based on the parameters estimated from the sample. This assumption states that the distribution of the residuals is normally distributed. The validity of the assumptions are tested on *Equation 3* (including firm-fixed effects) for the three different samples. In addition, this thesis tests the validity of the assumptions for *Equation* 4 (including firm-fixed effects) for the three different samples. The results for the tests on *Equation 4* are untabulated in order to avoid redundancy. Note that these conclusions are roughly similar to *Equation 3* since the included interaction term in Equation 4 is highly insignificant (i.e., regression residuals are approximately similar).

Assumption 1: Normality of Residuals and Mean of Zero;

This thesis first tests the assumption that the distribution of the residuals has a mean of zero and is normally distributed. *Appendix D Table 11 panel A* provides evidence that suggests that the mean of the residuals is not significantly different from zero. This thesis uses the Shapiro-Wilk test (Shapiro & Wilk, 1965) in order to test whether the distribution of the residual is normally distributed. The results of the Shapiro-Wilk test (see *Appendix D Table 11 panel B*) suggests that the residuals of the regression are not normally distributed.

Transformation of the variables into, for instance, natural logarithms or square roots could in many cases solve the problem of non-normality of the residuals (Moore et al., 2011). Untabulated evidence shows, however, that log transformation of (the most highly skewed) variables $HERF_{t-1}$, INF_ASYM_{t-1}, Y_t does not solve the problem of non-normality of the residuals (see *Appendix B* for the

distribution of these variables). This thesis argues that the non-normal distribution of the residuals does not bias the empirical analysis significantly. Diehr & Lumley (2002) demonstrate that it is possible to make valid inferences from any distribution when the sample comprises a large number of observations (even when the distribution of the residuals is highly non-normally distributed). Since the data set for the empirical analysis in this thesis comprises 7,117 firm-year observations, this thesis states that no further work is needed to meet the assumption of normally distributed residuals.

Assumption 2: Homoscedasticity;

Subsequently, this thesis tests the assumption that the variance of the residuals is constant over the different values of the independent variables, i.e., the presence of homoscedastic standard errors. This thesis tests the assumption of homoscedastic residuals by performing the Breusch-Pagan test of homoscedasticity (Breusch & Pagan, 1979) as augmented by Cook & Weisberg (1983). *Appendix D Table 14* presents the results of the Breusch-Pagan test. The p-value of <0.000 provides ground to reject the null hypothesis of homoscedastic standard errors. Hence, the regression model exhibits some serious heteroscedasticity issues. Heteroscedasticity of the standard errors does bias the estimation of the coefficient's standard errors significantly and is therefore of major concern (Brooks, 2008).

This thesis uses Huber-White's standard errors (Huber, 1967; White, 1980) to address the issue of heteroscedasticity. In general, Huber-White's standard errors cause standard errors to be higher, implying that Huber-White's standard errors are more conservative with regard to rejection of the null hypothesis of no statistical significance (Brooks, 2008)

Assumption 3: No Autocorrelation of Residuals;

OLS-regression requires that the residuals are not correlated with lagged residuals (Brooks, 2008). This thesis first aims to present visible evidence of the possible presence of autocorrelation of the residuals by creating a scatterplot with residuals against lagged residuals (see *Appendix D Figure 3*). An equally dispersed lagged residual plot among the four quadrants provides an indication that the residuals are not autocorrelated (Moore et al., 2011). However, the dispersion of the lagged residual plot across the quadrants in *Appendix D Figure 3* does not provide clear evidence for the presence of residual autocorrelation. Therefore, this thesis performs the Wooldridge test for residual autocorrelation (Wooldridge, 2002). This test is particularly appropriate since this test is able to deal with (unbalanced) panel data sets. Moreover, the simulations performed by Drukker (2003) demonstrate that the Wooldridge Test exhibits relatively high power for large samples. The results of the Wooldridge Test are presented in *Appendix D Table 17*. The p-value of <0.000 suggests that one can reject the null hypothesis of no residual autocorrelation. Hence, the empirical model exhibits a certain level of residual autocorrelation.

This thesis clusters the standard errors by each company to control for autocorrelation of the residuals. The clustering of standard errors takes into account that observations of the company can be

correlated in some unobserved way. Note, some phenomena do not have influence on the observations individually, but can affect the observations within a cluster jointly. [3]

Assumption 4: Linearity between the independent and dependent variables;

The fourth assumption of OLS-regression assumes linearity between the independent variables and dependent variable. Linearity can be best evaluated using scatterplots between the (continuous) independent variables and the residuals (Brooks, 2008). *Appendix D Figure 4* presents scatterplots that can be used to evaluate linearity of the regression model. Scatterplots with distributions that fit linear lines best, indicate that the regression model and data set meets the assumption of linearity between the independent and dependent variables (Moore et al., 2011). The scatterplots presented in *Appendix D Figure 4* show no indications for nonlinearity of the regression model, i.e., linear lines fit the distribution of the scatterplots of all continuous variables. Additionally, this thesis examines the scatterplots of the various interaction terms against the residuals, the (untabulated) results also show no indication for nonlinearity. Thus, the OLS-assumption of linearity between the independent variables and the dependent variables is met.

Multicollinearity;

OLS-regression implicitly assumes that the independent variables are not correlated with each other (Brooks, 2008). Highly correlated independent variables, i.e., the presence of multicollinearity, can have significant adverse consequences for the validity of the regression results. For instance, it is difficult to determine whether it is variable x_1 or variable x_2 that influences variable y, when there is high collinearity among the variables x_1 and x_2 (Moore et al., 2011).

Collinearity among independent variables can be determined by evaluating the value of the Variance Inflation Factor (*hereafter*, VIF). VIF values higher than 10 are generally considered as an indication for high collinearity among the independent variables (Moore et al., 2011). *Appendix D Table 20 Panel A* presents the values of VIF for the regression variables. The results suggest that there is no indication for the presence of collinearity among the independent variables, since no variables are above 10. However, the interaction terms with the control variables exhibit a considerable amount of collinearity among the regression terms. *Appendix D Table 20 Panel B* presents the VIF values for all these regression terms and shows a considerable amount of regression terms with VIF values above 10. An effective method to address the issue of multicollinearity stemming from the inclusion of interaction terms, is the conduct of mean centering all continuous variables. This thesis demonstrates that mean centering all continuous variables is indeed able to solve the problem of multicollinearity among the independent regression terms, without influencing the statistical inferences (see *Appendix*

[3] The article of Stock & Watson (2008) suggests that the use of solely Huber-White's standard errors generates inconsistent estimates for fixed effects models. However, this inconsistency is found to disappear when taking into account clustered standard errors (Stock & Watson, 2008). Hence, the estimation for the fixed model in this thesis is assumed to be consistent.

D Table 20 Panel B). Thus, this thesis finds that the multicollinearity issue is inherent to the regression model of Basu (1997). As Moore et al. (2011) points out, collinearity in this case can be safely ignored. The statistical inferences and sign of the coefficients remain completely the same for not mean centered variables and mean centered variables, this thesis therefore does not mean center the variables in order to facilitate their interpretation.

5.7 Conclusion Chapter 5

This chapter discussed the research design of the empirical analysis. The sample selection procedure resulted in a final sample of 7,117 firm-year observations of 896 individual U.S firms. Subsequently, this data is included in the regression model as introduced in *section 5.4* of this thesis. The variables are winsorized at the 1st and 99th percentile to mitigate the adverse effects of outliers. This thesis further provided ground to include firm-fixed effects in the regression model and presented also the assumption testing of OLS-regression in *section 5.6*. This thesis found no evidence that suggests that the assumptions of linearity, multicollinearity, and a mean of zero for the residuals are not met. In contrast, this thesis found evidence for the presence of homoscedasticity and autocorrelation of the residuals. Furthermore, the residuals are not normally distributed. This thesis decided to include Huber-White's standard errors and to cluster the standard errors by company to control for homoscedasticity and autocorrelation, respectively.

6. EMPIRICAL RESULTS

6.1 Introduction Chapter 6

This chapter discusses the empirical results of the empirical analysis. *Section 6.2* first provides details of the firms and variables derived from the sample. *Section 6.3* discusses the Pearson correlations between the coefficients. After the discussion of the sample, this thesis discusses the results of the regression model in *section 6.4. Section 6.5* concludes.

6.2 Descriptive Statistics

Panel A of Table 3 presents the descriptive statistics of the variables after the winsorizing procedure. All variables exhibit a total number of 7,117 observations. AR_t has a mean of 0.0666315 which implies that the sample comprises companies with an average abnormal stock return of 6.66 percent a year. The mean of indicator variable D_t (i.e., a value of 0. 4879865) suggests that approximate half of the total firm observations had a negative abnormal stock return. The variable of interest $ENTRY_{t-1}$ has a mean of 8.791422 suggesting that the average industry gross PPE, i.e., industry entry costs, equals \$6,577,578.85 (\$1,000*$e^{8.791422}$). The minimum value of $HERF_{t-1}$ is 0.0444353 which indicates a highly dispersed industry according to the Herfindahl-Hirschman Index. In contrast, the maximum value of $HERF_{t-1}$ (i.e., a value of approximately 1) suggests that the sample includes monopolistic companies. An average of 9.13 analysts follows an individual company, however, the standard error is relatively high. The distribution of the variable LIT_{t-1} is according to *Table 3* highly right (or positively) skewed, but contains due to the winsorizing procedure no large outliers. The firm observations in the sample have an average book value of assets equal to \$1,936,146.62 (\$1,000*$e^{7.568455}$) and values of 0.502 and 0.512 for the book-to-market value of equity and leverage ratio, respectively. These values are roughly comparable to other studies on the determinants of conditional conservatism for U.S. firms (e.g., Zhang, 2008; Khan & Watts, 2009). Descriptive statistics on the subsamples, i.e., the market follower sample and market leader sample are provided in *Appendix E Table 23* of this thesis.

Panel B of Table 3 shows the industry composition of the full sample. Most firms that are included in the sample can be categorized as a manufacturing firm (i.e., 56.47%) or service firm (i.e., 22.54%). Other industries included in the sample are the agriculture, forest and fishery industry (0.22%), the mining industry (9.82%), construction industry (2.01%), the wholesale industry (4.24%) and the retail trade industry (4.69%).

6.3 Correlation Matrix

Table 4 presents the Pearson correlations between the regression variables. The results suggests that companies competing in high entry costs industries are more likely to be audited by a big four company (p= 0.0558). Moreover, firms that compete in industries with high industry entry costs tend to exhibit less information asymmetries (p= -0.1981), suggesting that these firms provide more

TABLE 3

Descriptive Statistics

Panel A: Descriptive Statistics Full Sample

Variable Name	Number of Observations	Mean Value	Standard Deviation	Minimum Value	Maximum Value
Y_t	7,117	0.0284866	0.1088477	-0.5551724	0.2363928
AR_t	7,117	0.0666315	0.4510744	-0.7770811	2.148564
D_t	7,117	0.4879865	0.4998908	0	1
$ENTRY_{t-1}$	7,117	8.791422	1.572613	5.114533	12.26266
$HERF_{t-1}$	7,117	0.2139175	0.1919708	0.0444353	0.9999635
INF_ASYM_{t-1}	7,117	-9.128425	6.855866	-31	-1
LIT_{t-1}	7,117	0.9419491	2.497272	-2.857253	10.73885
$OPER_t$	7,117	4.612875	0.7750291	-1.48232	10.97647
LEV_{t-1}	7,117	0.5120784	0.2236137	0.0919521	1.239878
BM_{t-1}	7,117	0.5019304	0.3674344	-0.2104968	1.95977
$SIZE_{t-1}$	7,117	7.568455	1.649353	4.888242	11.99709

Panel B: Industry Composition Full Sample

Industry	SIC code	Number of Firms
Agriculture, Forestry and Fishing Industry	0100-0999	2
Mining Industry	1000-1499	88
Construction Industry	1500-1799	18
Manufacturing Industry	2000-3999	506
Utility Industry	4000-4999	0*
Wholesale Trade Industry	5000-5199	38
Retail Trade Industry	5200-5999	42
Financial, Insurance and Real Estate Industry	6000-6999	0*
Service Industry	7000-8999	202
Public Administration Industry	9100-9729	0
Not Classifiable to a Specific Industry	9900-9999	0*
	Total Firms	896

Panel A of this table presents the descriptive statistics for all variables included in the regression model. All continuous variables are winsorized at the 1st and 99th percentile.

Panel B of this table presents the industry composition of the sample. Firms are attributed to an industry based on their Standard Industry Class (SIC) code. (*) means that it was the sample selection process that resulted in the full exclusion of the industry (see *Table 2* for the sample selection process).

TABLE 4

Pearson Correlation Matrix

	Y_t	D_t	AR_t	$ENTRY_{t-1}$	Big_Four_{t-1}	$HERF_{t-1}$	INF_ASYM_{t-1}	LIT_{t-1}	$OPER_t$	LEV_{t-1}	BM_{t-1}	$SIZE_{t-1}$
Y_t	-											
D_t	-0.1423***	-										
AR_t	0.0828***	-0.6779***	-									
$ENTRY_{t-1}$	0.0026	0.0151	-0.0135	-								
BIG_FOUR_{t-1}	0.0414***	0.0106	-0.0123	0.0558***	-							
$HERF_{t-1}$	0.0407***	-0.0215*	0.0355***	-0.3555***	-0.0130	-						
INF_ASYM_{t-1}	-0.0384***	-0.0276**	0.0664***	-0.1981***	-0.1655***	0.1454***	-					
LIT_{t-1}	-0.0815***	0.0488***	0.0066	0.1531***	0.0531***	-0.0826***	-0.2174***	-				
$OPER_t$	-0.0405***	0.0223*	-0.0311***	0.0004	-0.0561***	-0.0144	0.0172	-0.0689***	-			
LEV_{t-1}	0.0094	-0.0626***	0.0944***	0.0241**	0.1350***	0.1298***	0.0008	0.1181***	-0.1466***	-		
BM_{t-1}	-0.2621***	.0558***	0.0347***	-0.0104	-0.0576***	0.0141	0.1823***	0.0145	0.0459***	-0.2305***	-	
$SIZE_{t-1}$	0.1477***	-0.0150	-0.0711***	0.2930***	0.2652***	-0.0068	-0.5209***	0.1281***	0.0532***	0.3033***	-0.0953***	-

This table presents the correlations between the variables that are included in the regression models. Presented correlations are Pearson correlations. (*), (**),(***) represents significance at the 10, 5 and 1 percent level, respectively.

information about their economic performance since these companies are protected from potential competition by high industry entry costs. Consistent with the article of Muiño & Nickel (2016) firms competing in low entry barrier industries tend to exhibit higher agency costs. Moreover, firms in high entry barrier industries tend to have a greater risks of litigation (ρ= 0.1531). This positive correlation could be explained by the fact that firms that compete in high entry barrier industries are more publicly visible and therefore face higher risk of litigation (see Cahan, 1992, *chapter 2 and 3*). Furthermore, firms competing in high entry barrier industries are found to exhibit a higher degree of leverage (ρ= 0.0241). In addition, firms in high entry barrier industries tend to be greater of size (ρ= 0.2930), which could be interpreted as that only large firms could have afforded the entry costs required to compete in the industry. However, this thesis acknowledges that this positive correlation could also be merely a statistical correlation. More specifically, the level of entry costs is approximated by the average value of gross PPE. Hence, large firms will likely have greater values of gross PPE which results in higher values of the variable $ENTRY_{t-1}$.

6.4 Regression Results

Table 5 presents the results of the regression model. The significant positive coefficient on $D_t * AR_t$ suggests that companies are on average conditional conservative (see *Table 5 panel A*). This tendency for conditional conservative reporting remains when distinguishing between market followers (significant positive coefficient of 0.1459) and market leaders (significant positive coefficient of 0.0778).

The exclusion of important control variables can, however, lead to spurious regression results, and for this reason it is more meaningful to interpret the results of the regression model that includes control variables that are found to affect the level of conditional conservatism. *Panel B of table 5* provides these results. In contrast to study of Lee et al. (2006), the audit by a big four company is not found to significantly affect the firm's level of conditional conservative reporting for all three samples. This thesis argues that this could be the result of the fact that the big four accounting firms responded to FASB's increasing demand for neutral financial reporting, resulting in less conditional conservative financial reporting. The insignificant coefficient on the interaction term $D_t * AR_t * LIT_{t-1}$ suggest that the level of litigation risk does not have a significant effect on the level of conditional conservatism. However, the results show that litigation risk increases the use of conditional conservative reporting for market leaders (i.e., β_{35} is positive and significant at the 10 percent level for the market leaders sample). This result is consistent with the article of Cahan (1992) that states that big firms are more publicly visible and face therefore higher threats of litigation. Consequently, conditional conservative reporting as response to litigation risk is more pronounced for market leaders.

In addition, the degree of information asymmetry is found to affect the level of conditional conservatism. More specifically, higher levels of information is negatively associated with conditional conservatism. While literature suggests that higher information asymmetry demands for more

conditional conservatism (see *chapter 3*), this thesis finds that information asymmetry results in less conditional conservatism. However, in line with LaFond & Watts (2008), this thesis interprets this finding as reduced information asymmetry being the result of more conditional conservative reporting.[4] Moreover, the positive coefficient on $D_t * AR_t * HERF_{t-1}$ suggests that industries with low

TABLE 5
Regression Model

Dependent Variable Y_t			
	Full Sample	Sample Market Followers	Sample Market Leaders
Number of Observations	*7,117*	*3,759*	*3,358*
Firm-Fixed Effects	Yes	Yes	Yes

Panel A: *Equation 2:*

$Y_t = \beta_0 + \beta_1 D_t + \beta_2 AR_t + \beta_3 D_t * AR_t + \varepsilon$

Variable Name	Coefficient	T-Statistic	Coefficient	T-Statistic	Coefficient	T-Statistic
D_t	**-0.0070***	-1.95	-0.0039	-0.72	**-0.0116***	-2.46
AR_t	**-0.0184****	-2.45	**-0.0226****	-2.27	-0.0160	-1.35
$D_t * AR_t$	**0.1132*****	7.12	**0.1496*****	6.59	**0.0653*****	3.13
Constant	**0.0468*****	17.44	**0.0431*****	10.78	**0.0515*****	14.44

Panel B: *Equation 3:*

$Y_t = \beta_0 + \beta_1 ENTRY_{t-1} + \beta_2 BIG\_FOUR_{t-1} + \beta_3 HERF_{t-1} + \beta_4 INF\_ASYM_{t-1} + \beta_5 LIT_{t-1} + \beta_6 OPER_t + \beta_7 LEV_{t-1} + \beta_8 BM_{t-1} + \beta_9 SIZE_{t-1} + \beta_{10} D_t + \beta_{11} D_t * ENTRY_{t-1} + \beta_{12} D_t * BIG\_FOUR_{t-1} + \beta_{13} D_t * HERF_{t-1} + \beta_{14} D_t * INF\_ASYM_{t-1} + \beta_{15} D_t * LIT_{t-1} + \beta_{16} D_t * OPER_t + \beta_{17} D_t * LEV_{t-1} + \beta_{18} D_t * BM_{t-1} + \beta_{19} D_t * SIZE_{t-1} + \beta_{20} AR_t + \beta_{21} AR_t * ENTRY_{t-1} + \beta_{22} AR_t * BIG\_FOUR_{t-1} + \beta_{23} AR_t * HERF_{t-1} + \beta_{24} AR_t * INF\_ASYM_{t-1} + \beta_{25} AR_t * LIT_{t-1} + \beta_{26} AR_t * OPER_t + \beta_{27} AR_t * LEV_{t-1} + \beta_{28} AR_t * BM_{t-1} + \beta_{29} AR_t * SIZE_{t-1} + \beta_{30} D_t * AR_t + \beta_{31} D_t * AR_t * ENTRY_{t-1} + \beta_{32} D_t * AR_t * BIG\_FOUR_{t-1} + \beta_{33} D_t * AR_t * HERF_{t-1} + \beta_{34} D_t * AR_t * INF\_ASYM_{t-1} + \beta_{35} D_t * AR_t * LIT_{t-1} + \beta_{36} D_t * AR_t * OPER_t + \beta_{37} D_t * AR_t * LEV_{t-1} + \beta_{38} D_t * AR_t * BM_{t-1} + \beta_{39} D_t * AR_t * SIZE_{t-1} + \varepsilon$

Variable Name	Coefficient	T-Statistic	Coefficient	T-Statistic	Coefficient	T-Statistic
$ENTRY_{t-1}$	-0.0010	-0.15	0.0080	0.84	-0.0106	-1.23
BIG_FOUR_{t-1}	-0.0175	-1.27	-0.0097	-0.64	0.0633***	-3.32
$HERF_{t-1}$	0.0120	0.38	-0.0166	-0.37	0.0428	0.94
INF_ASYM_{t-1}	0.0005	1.06	0.0010	1.04	0.0005	0.90
LIT_{t-1}	0.0023	1.84	0.0013	0.70	0.0039**	2.29
$OPER_t$	-0.0052	-0.69	-0.0142	-1.18	0.0018	0.23
LEV_{t-1}	**0.0594*****	3.20	**0.0797*****	2.67	0.0549**	2.51
BM_{t-1}	**-0.0796*****	-5.86	**-0.0704*****	-3.82	0.0845***	-4.33

Continued on next page

[4] This reversed causality view is especially reasonable since the Basu (1997)'s measure of conditional conservatism is not a firm-year measure.

TABLE 5 (Continued)

Variable Name	Coefficient	T-Statistic	Coefficient	T-Statistic	Coefficient	T-Statistic
$SIZE_t$	-0.0064	-1.46	**-0.0205****	-2.51	0.0026	0.47
D_t	**-0.0776****	-2.33	-0.0793	-1.40	-0.0745	-1.34
$D_t * ENTRY_{t-1}$	0.0017	1.54	0.0031	0.86	-0.0019	-0.54
$D_t * BIG\_FOUR_{t-1}$	**0.0386*****	0.69	**0.0434*****	2.57	0.0234	0.61
$D_t * HERF_{t-1}$	**0.0290***	2.60	**0.0410***	1.78	-0.0027	-0.09
$D_t * INF\_ASYM_{t-1}$	-0.0004	1.76	-0.0002	-0.19	-0.0005	-0.73
$D_t * LIT_{t-1}$	0.0024	-0.66	0.0034	1.28	0.0007	0.25
$D_t * OPER_{t-1}$	0.0079	1.22	0.0025	0.26	**0.0152*****	2.88
$D_t * LEV_{t-1}$	0.0166	0.80	-0.0077	-0.26	0.0243	0.87
$D_t * BM_{t-1}$	-0.0156	-0.94	-0.0160	-0.70	-0.0269	-1.16
$D_t * SIZE_{t-1}$	-0.0037	-1.51	0.0001	0.02	-0.0024	-0.70
AR_t	**0.0329***	0.55	0.0459	0.50	0.0583	0.57
$AR_t * ENTRY_{t-1}$	**-0.0032***	-0.64	-.0028	-0.44	-0.0070	-0.82
$AR_t * BIG\_FOUR_{t-1}$	0.0237	1.12	0.0322	1.49	-0.0137	-0.37
$AR_t * HERF_{t-1}$	0.0179	0.56	0.0411	0.98	-0.0361	-0.73
$AR_t \_INF\_ASYM_{t-1}$	0.0011	0.93	0.0028	1.27	-0.0009	-0.70
$AR_t * LIT_{t-1}$	**0.0009***	0.32	0.0037	0.81	-0.0020	-0.63
$AR_t * OPER_t$	**-0.0025**	-0.35	-0.0106	-0.93	0.0115	1.06
$AR_t * LEV_{t-1}$	**-0.0733****	-2.51	**-0.1223*****	-3.08	-0.0335	-0.82
$AR_t * BM_{t-1}$	**-0.0525*****	-3.35	**-0.0601*****	-3.03	-0.0390	-1.48
$AR_t * SIZE_{t-1}$	0.0082	1.64	**0.0161****	1.83	0.0005	0.07
$D_t * AR_t$	**-0.4890*****	-3.83	**-0.4741****	-2.50	**-0.4717****	-2.42
$D_t * AR_t * ENTRY_{t-1}$	**0.0230****	2.17	**0.0298****	2.04	0.0077	0.52
$D_t * AR_t * BIG\_FOUR_{t-1}$	0.0797	1.32	0.0762	1.07	0.1150	0.88
$D_t * AR_t * HERF_{t-1}$	**0.1138***	1.58	0.1231	1.22	0.05851	0.52
$D_t * AR_t * INF\_ASYM_{t-1}$	**-0.0042****	-2.02	**-0.0073***	-1.74	-0.0008	-0.34
$D_t * AR_t * LIT_{t-1}$	0.0083	1.48	0.0044	0.48	**0.0108***	1.65
$D_t * AR_r * OPER_t$	**0.0497*****	2.92	0.0302	1.10	**0.0553*****	2.59
$D_t * AR_t * LEV_{t-1}$	**0.4240*****	5.91	**0.4784*****	4.75	**0.2626*****	2.86
$D_t * AR_t * BM_{t-1}$	**0.2485*****	5.02	**0.2461*****	3.38	**0.2150*****	3.05
$D_t * AR_t * SIZE_{t-1}$	**-0.0487*****	-5.19	**-0.0522*****	-3.10	**-0.0258***	-1.93
Constant	**0.1474****	2.46	**0.1853****	2.03	**0.1756****	2.26

This table presents the results of the regression model (*Equation 3*) for the full sample and the two subsamples. Standard errors are clustered by company and computed based on Huber (1967) and White (1980) to correct for autocorrelation and heteroscedasticity, respectively.
(*), (**),(***) represents significance at the 10, 5 and 1 percent level, respectively.

competitive pressure are more conditional conservative, potentially to prevent to attract attention of regulators (Cahan, 1992; Hsu et al., 2013). Furthermore, as previously discussed in *chapter 3* and *chapter 4* of this thesis, the prospect of high competitive pressure in the industry when entering the market can serve as significant industry entry barrier. This thesis therefore argues that there is some evidence that firms strategically adopt conditional conservatism to decrease the attractiveness of the market when current competitive pressure is low. Furthermore, this thesis finds evidence that suggests that the degree of leverage affects the level of conditional conservative reporting significantly for all three samples. This result is in line with the contracting explanation for conditional conservatism (see *section 3.2.1*) and consistent with studies of, for instance, Khan & Watts (2009) and Nikolaev (2010). In addition, as predicted by Beaver & Ryan (2005), the significant positive coefficient on $D_t * AR_t * BM_{t-1}$ for all three samples, suggests that the level of unconditional conservatism affects the possibilities to adopt conditional conservative accounting policies. Moreover, this thesis finds that the size of the firm decreases the level of conditional conservatism for all three samples, as consistent with prior findings (e.g., Khan & Watts, 2009; Lara et al., 2014).

This thesis finds evidence that suggests a positive association between industry entry costs and the degree of conditional conservatism. More specifically, the interaction term $D_t * AR_t * ENTRY_{t-1}$ is positive and significant at the 5 percent level. This thesis therefore rejects the null hypothesis of no association between industry entry costs and the degree of conditional conservatism. The significant positive coefficient on β_{31} (see *Equation 3*) is in line with the corporate governance view on conditional conservatism. More specifically, high industry entry costs decrease the threat of competition, creating an increasing need for conditional conservatism as governance mechanism to prevent managerial slack and increase monitoring possibilities. Moreover, agency concerns are more pronounced for firms in low entry barrier industries, inducing managers to present better performance and thus avoid conditional conservative reporting. The significant coefficient on β_{31} for market followers in contrast to the insignificant coefficient on β_{31} for the market leaders sample suggests that this corporate governance view only holds for market followers. Hence, this thesis rejects the null hypothesis of no association between industry entry costs and the degree of conditional conservatism for market followers, but cannot reject the null hypothesis of no association between industry entry costs and the degree of conditional conservatism for market leaders. The significant positive coefficient on β_{31} implies that this thesis does not find evidence for strategic application of conditional conservatism to discourage entrance of new competitors when industry entry barriers are relatively low (as opposed to Dhaliwal et al., 2014). Similar to findings of Dhaliwal et al. (2014), the political cost argument for conditional conservatism is also not supported since the association is not found to hold for market leaders.

Table 6 shows the regression results of *Equation 4*. The sign and values of the coefficients on the different control variables in the regression model are comparable to the results of *Table 5*. With respect to the included interaction term, this thesis finds no evidence that the level of information

TABLE 6

Regression Model

Dependent Variable

Y_t

Equation 4:

$$Y_t = \beta_0 + \beta_1 ENTRY_{t-1} + \beta_2 ENTRY_{t-1} * INF\_ASYM_{t-1} + \beta_3 BIG\_FOUR_{t-1} + \beta_4 HERF_{t-1} + \beta_5 INF\_ASYM_{t-1} + \beta_6 LIT_{t-1} + \beta_7 OPER_t + \beta_8 LEV_{t-1} + \beta_9 BM_{t-1} + \beta_{10} SIZE_{t-1} + \beta_{11} D_t + \beta_{12} D_t * ENTRY_{t-1} + \beta_{13} D_t * ENTRY_{t-1} * INF\_ASYM_{t-1} + \beta_{14} D_t * BIG\_FOUR_{t-1} + \beta_{15} D_t * HERF_{t-1} + \beta_{16} D_t * INF\_ASYM_{t-1} + \beta_{17} D_t * LIT_{t-1} + \beta_{18} OPER_t + \beta_{19} D_t * LEV_{t-1} + \beta_{20} D_t * BM_{t-1} + \beta_{21} D_t * SIZE_{t-1} + \beta_{22} AR_t + \beta_{23} AR_t * ENTRY_{t-1} + \beta_{24} AR_t * ENTRY_{t-1} * INF\_ASYM_{t-1} + \beta_{25} AR_t * BIG\_FOUR_{t-1} + \beta_{26} AR_t * HERF_{t-1} + \beta_{27} AR_t * INF\_ASYM_{t-1} + \beta_{28} AR_t * LIT_{t-1} + \beta_{29} AR_t * OPER_t + \beta_{30} AR_t * LEV_{t-1} + \beta_{31} AR_t * BM_{t-1} + \beta_{32} AR_t * SIZE_{t-1} + \beta_{33} D_t * AR_t + \beta_{34} D_t * AR_t * ENTRY_{t-1} + \beta_{35} D_t * AR_t * ENTRY_{t-1} * INF\_ASYM_{t-1} + \beta_{36} D_t * AR_t * BIG\_FOUR_{t-1} + \beta_{37} D_t * AR_t * HERF_{t-1} + \beta_{38} D_t * AR_t * INF\_ASYM_{t-1} + \beta_{39} D_t * AR_t * LIT_{t-1} + \beta_{40} D_t * AR_t * OPER_t + \beta_{41} D_t * AR_t * LEV_{t-1} + \beta_{42} D_t * AR_t * BM_{t-1} + \beta_{43} D_t * AR_t * SIZE_{t-1} + \varepsilon$$

	Full Sample	Sample Market Followers	Sample Market Leaders
Number of Observations	*7,117*	*3,759*	*3,358*
Firm-Fixed Effects	Yes	Yes	Yes

Variable Name	Coefficient	T-Statistic	Coefficient	T-Statistic	Coefficient	T-Statistic
ENTRY	-0.0014	0.21	0.0092	0.91	-0.0112	-1.22
$ENTRY_{t-1} * INF\_ASYM_{t-1}$	-0.0001	-0.22	0.0003	0.59	-0.0000	-0.03
BIG_FOUR_{t-1}	-0.0180	-1.30	-0.0102	-0.66	**-0.0640*** **	-3.42
$HERF_{t-1}$	0.0109	0.35	-0.018	-0.41	0.0435	0.95
INF_ASYM_{t-1}	0.0011	0.42	-0.0016	-0.37	0.0006	0.18
LIT_{t-1}	**0.0023** **	1.82	0.0013	0.67	**0.0040** **	2.33
$OPER_t$	-0.0052	-0.69	-0.0141	-1.19	0.0018	0.23
LEV_{t-1}	**0.0594*** **	3.20	0.0792***	2.63	**0.0546** **	2.49
BM_{t-1}	**-0.0800*** **	-5.89	-0.0707***	-3.83	**-0.0847*** **	-4.33
$SIZE_t$	-0.0064	-1.46	-0.0202**	-2.46	0.0028	0.50
D_t	**-0.1046** **	-2.52	**-0.1105** **	-1.72	-0.0697	-0.98
$D_t * ENTRY$	0.0046	1.29	0.0068	1.36	-0.0024	-0.42
$AR_t * ENTRY_{t-1} * INF\_ASYM_{t-1}$	0.0003	1.06	0.0006	0.96	0.0000	-0.08
$D_t * BIG\_FOUR_{t-1}$	**0.0379** **	2.53	**0.0425** **	2.49	0.0245	0.64
$D_t * HERF_{t-1}$	**0.0308** **	1.88	0.0403	1.75	-0.0038	-0.13
$D_t * INF\_ASYM_{t-1}$	-0.0034	-1.22	-0.0054	-1.08	-0.0001	-0.04
$D_t * LIT_{t-1}$	0.0024	1.24	0.0036	1.40	0.0007	0.25

Continued on next page

TABLE 6 (Continued)

Variable Name	Coefficient	T-Statistic	Coefficient	T-Statistic	Coefficient	T-Statistic
$D_t * OPER_{t-1}$	0.0077	1.51	0.0015	0.16	**0.0152****	2.81
$D_t * LEV_{t-1}$	0.0170	0.82	-0.0060	-0.20	0.0248	0.90
$D_t * BM_{t-1}$	-0.0148	-0.90	-0.0145	-0.64	-0.0267	-1.14
$D_t * SIZE_{t-1}$	-0.0036	-1.46	0.0004	0.07	-0.0025	-0.71
AR_t	0.0334	0.50	0.0484	0.49	0.0491	0.39
$AR_t * ENTRY_{t-1}$	-0.0032	-0.54	-0.0030	-0.39	-0.0060	-0.53
$AR_t * ENTRY_{t-1} * INF\_ASYM_{t-1}$	0.0000	-0.03	0.0000	0.00	0.0001	0.12
$AR_t * BIG\_FOUR_{t-1}$	0.0240	1.12	0.0324	1.48	0.0377	-0.33
$AR_t * HERF_{t-1}$	0.0179	0.56	0.0418	0.99	0.0508	-0.70
$AR_t \_INF\_ASYM_{t-1}$	0.0012	0.21	0.0026	0.27	0.0078	-0.23
$AR_t * LIT_{t-1}$	0.0009	0.33	0.0038	0.83	0.0032	-0.63
$AR_t * OPER_t$	-0.0024	-0.34	-0.0109	-0.95	0.0109	1.05
$AR_t * LEV_{t-1}$	**-0.0736****	-2.51	**-0.1231*****	-3.09	0.0408	-0.81
$AR_t * BM_{t-1}$	**-0.0524*****	-3.31	**-0.0599*****	-2.99	0.0269	-1.44
$AR_t * SIZE_{t-1}$	0.0081	1.61	**0.0159****	1.79	0.0073	0.06
$AR_t * D_t$	**-0.5875*****	-3.86	**-0.6257*****	-2.94	0.2364	-1.53
$D_t * AR_t * ENTRY_{t-1}$	**0.0342****	2.41	**0.0475*****	2.58	0.0216	-0.22
$D_t * AR_t * ENTRY_{t-1} * INF\_ASYM_{t-1}$	0.0013	0.98	0.0028	1.16	0.0015	-0.70
$D_t * AR_t * BIG\_FOUR_{t-1}$	0.0761	1.25	0.0707	0.98	0.1297	0.92
$D_t * AR_t * HERF_{t-1}$	**0.1206***	1.65	0.1169	1.16	0.1164	0.36
$D_t * AR_t * INF\_ASYM_{t-1}$	**-0.0163****	-1.32	-0.0325	-1.49	0.0144	0.65
$D_t * AR_t * LIT_{t-1}$	0.0084	1.51	0.0054	0.62	**0.0065***	1.67
$D_t * AR_r * OPER_t$	**0.0485*****	2.85	0.0266	0.97	**0.0214*****	2.58
$D_t * AR_t * LEV_{t-1}$	**0.4255*****	5.91	**0.4885*****	4.83	**0.0909*****	2.90
$D_t * AR_t * BM_{t-1}$	**0.2501*****	5.05	**0.2522*****	3.46	**0.0714*****	2.98
$D_t * AR_t * SIZE_{t-1}$	**-0.0482*****	-5.05	**-0.0509*****	-3.01	**0.0133****	-1.90
Constant	**0.1524****	2.45	**0.1748***	1.83	**0.0834****	2.17

This table presents the results of the regression model (*Equation 4*) for the full sample and the two subsamples. Standard errors are clustered by company and computed based on Huber (1967) and White (1980) to correct for autocorrelation and heteroscedasticity, respectively.
(*), (**),(***) represents significance at the 10, 5 and 1 percent level, respectively.

asymmetry strengthens the association between industry entry costs and the level of conditional conservatism for all three samples (P-values on β_{35} of *Equation 4* equal 0.325, 0.246 and 0.487 for the full sample, the market followers sample and the market leaders sample, respectively). Hence, this thesis cannot reject the null hypothesis of no effect of information asymmetry on the association between industry entry costs and the degree of conditional conservatism for all three samples.

6.5 Alternative Measure of the variable $ENTRY_{t-1}$

As additional robustness test to assess the validity of this study, this thesis uses another variable that proxies for industry entry costs ($ENTRY_{t-1}$). More specifically, this thesis follows Karuna (2007) and defines the variable $ENTRY\_ALTERNATIVE_{t-1}$ as the average industry R&D expenses at the 3-digit SIC-level to approximate for the level of industry entry costs. Large industry R&D expenses could function as significant industry entry barrier, since companies are forced to make significant R&D investments in order to maintain their competitive position.

This thesis performs the regression models as formulated in *Equation 3* and *Equation 4*, but replaces the variable $ENTRY_{t-1}$ by $ENTRY\_ALTERNATIVE_{t-1}$. The estimates are (again) based on Huber-White's standard errors (Huber, 1967; White, 1980) and standard errors are clustered by company to correct for heteroscedasticity and autocorrelation of the residuals, respectively. The results of the regression model (*Equation 3*) suggests that average industry R&D expenses does not affect the degree of conditional conservatism for the full sample (p-value= 0.119). However, similar to the main analysis, the degree of industry entry costs increases the degree of conditional conservatism for market followers (p-value=0.003, n=3,779). In contrast to the main analysis, this thesis finds also an association between industry entry costs and the degree of conditional conservatism for market leaders (p-value=0.019, n=3,358), suggesting that the corporate governance function of conditional conservatism is also important for market leaders. With regard to the third hypothesis, this thesis finds, consistent with the main analysis, that the degree of information asymmetry does not strengthen the association between the firm's industry entry costs and the degree of conditional conservatism.

7. CONCLUSION

7.1 Introduction Chapter 7

This chapter makes some concluding remarks that relate to this thesis. *Section 7.2* provides a summary of the main findings of this thesis that answers the related subquestions. *Section 7.3* provides an answer to the research question. *Section 7.4* covers the limitations of this thesis and *section 7.5* makes some suggestions for future research.

7.2 Main Findings and Answers Subquestions

With regard to the first subquestion of this thesis, this thesis finds evidence that suggest a significant positive association between the level of industry entry costs and the degree of conditional conservatism. This finding is consistent with the corporate governance view on conditional conservatism. More specifically, high industry entry costs induces managerial slack and reduces monitoring opportunities (Schmidt, 1997), which increases the need for conditional conservatism as corporate governance mechanism. Moreover, in line with the article Muiño & Nickel (2016), this thesis finds that managers are reluctant to adopt conditional conservative accounting policies in low entry barrier industries since agency costs are generally high for these industries, inducing managers to disclose higher performance.

In the process of answering the second subquestion of this thesis, this thesis shows that the significant positive association between the level of industry entry costs and the degree of conditional conservatism differs for market followers and market leaders. As predicted, this thesis finds that the above corporate governance argument is more pronounced for market followers, since these companies are more affected by the threat of future industry competition.

In contrast to what predicted, this thesis finds no evidence for a role of information asymmetry in the association between the level of industry entry costs and conditional conservatism (*subquestion 3*).

7.3 Answer Research question

To provide an answer to the research question of this thesis, this thesis finds that the threat of future industry competition is positively associated with the company's adoption of conditional conservative accounting policies. However, this association only holds for market followers. The findings are consistent with the corporate governance argument on product market competition, but are inconsistent with the results of Dhaliwal et al. (2014) that find evidence for strategic application of conditional conservatism. Moreover, the political costs argument for the use of conditional conservatism is not supported by the empirical findings of this thesis.

7.4 Limitations

There are some important limitations related to this thesis that should be taken into account when interpreting the findings of this thesis. Firstly, the narrow operationalization of the concept of industry

entry costs has great influence on the findings of this thesis. As discussed in *section 3.3.1* and *section 4.4.1* of this thesis, there are likely to be other industry entry barriers that could be important factors to consider for a company before entering an industry.

In addition, this thesis makes some subjective decisions with regard to the definition of industry. More specifically, this thesis assumes that all firms in a 3-digit SIC-level industry are important for a firm that is considering entrance in that particular industry. This assumption is arguable for different reasons. Firstly, new entrants could adopt a cost leadership strategy, which makes the companies more irrelevant that are following a differentiation strategy in that industry. Secondly, some industries are highly characterized by their local market character, which suggest that the firms that are competing in other geographical regions are irrelevant for the market entrance decision. Thirdly, companies could compete in different markets, while their SIC code only indicates one industry in which the firm compete.

At last, this thesis emphasizes that the empirical analysis in this thesis is subject to a correlated-omitted-variable bias (even after the inclusion of firm-fixed effects). Although this correlated-omitted-variable problem is very common in cross-sectional analysis, sine one is unlikely to be able to account for all independent variables, one should interpret the findings with great care. A correlated-omitted variable problem could significantly change the associations found when included in the regression model.

7.5 Suggestions for Future Research

The findings of this thesis provide some interesting directions for future research. Future research could enhance the assessment of industry entry barriers by focussing on industry specific licences, distribution channels and economies of scale. Moreover, while this thesis controls for the degree of current competition in the empirical analysis, this thesis does not account for the interaction of industry entry costs and the level of current competition. For instance, industries characterized by high entry costs does not immediately imply that the level of current competition is low. Analysis that includes this interaction could provide useful insights in the association between industry entry barriers and the degree of conditional conservatism. Moreover, this thesis solely focusses on conditional conservatism as accounting policy to withhold (or present) valuable information. However, the firm's disclosure policy plays also an important role in the managerial tools to present information to financial statement users. This thesis argues that future research that combines the use of conditional conservatism and the firm's disclosure policy as strategic tool for managers to withhold (or present) valuable information fills an important gap in the accounting literature.

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Yu, F. (2008). Analyst coverage and earnings management. *Journal of Financial Economics, 88*(2), 245-271.

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APPENDIX A: MEASUREMENT OF FIRM-LEVEL LITIGATION RISK

Firm-level litigation risk (*LIT*) is operationalized following Kim & Skinner (2012). Kim & Skinner (2012) combine characteristics related to industry-membership with firm-specific factors that are jointly found to influence the firm's degree of litigation risk. Litigation risk is measured using the following model:

$$LIT_t = -7.883 + 0.566\,(FBS_t) + 0.518\,(SIZE_{t-1}) + 0.982\,(SALES\_GROWTH_{t-1})$$
$$+ 0.379\,(RETURN_{t-1}) - 0.108\,(RETURN\_SKEWNESS_{t-1})$$
$$+ 25.635\,(RETURN\_STD\_DEV_{t-1}) + 0.00007\,(TURNOVER_{t-1})$$

(*Equation 5*)

In which:

FBS_t	Indicator variable that equals 1 if the company competes in year *t* in the biotech industry (SIC: 2833-2836, 8731-8734), computer industry (SIC: 3570-3577, 7370-7374), electronics industry (SIC: 3600-3674) or retail industry (SIC: 5200-5961), and equals 0 when otherwise, at year *t*.
$SIZE_{t-1}$	Natural logarithm of total assets as reported in year *t-1*.
$SALES\_GROWTH_{t-1}$	Change in sales ($Sales_{t-1} - Sales_{t-2}$) scaled by total assets at year *t-2*.
$RETURN_{t-1}$	Accumulated market-adjusted monthly stock return at year *t-1*.
$RETURN\_SKEWNESS_{t-1}$	Skewness of the 12-month stock return at year *t-1*.
$RETURN\_STD\_DEV_{t-1}$	Standard deviation of the 12-month stock return at year *t-1*.
$TURNOVER_{t-1}$	Trading volume accumulated over a 12-month period at year *t-1* scaled by the amount of shares outstanding in year *t-2*.

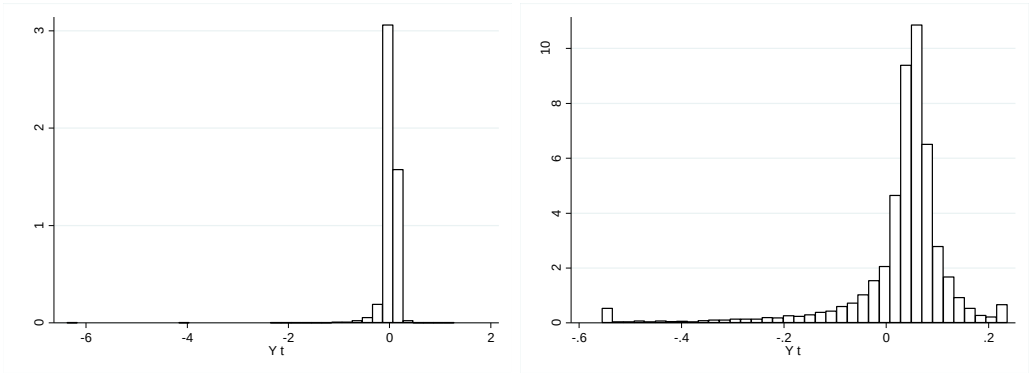
APPENDIX B: WINSORIZING PROCEDURE

Outliers in the continuous variables could bias the empirical analysis. This thesis therefore adopts a winsorizing procedure (at the 1 and 99 percentile level) for all continuous variables to mitigate the adverse effects of outliers. *Table 7* shows the effects of the winsorizing procedure.

TABLE 7
Distribution Variables

7.1 Variable Y_t

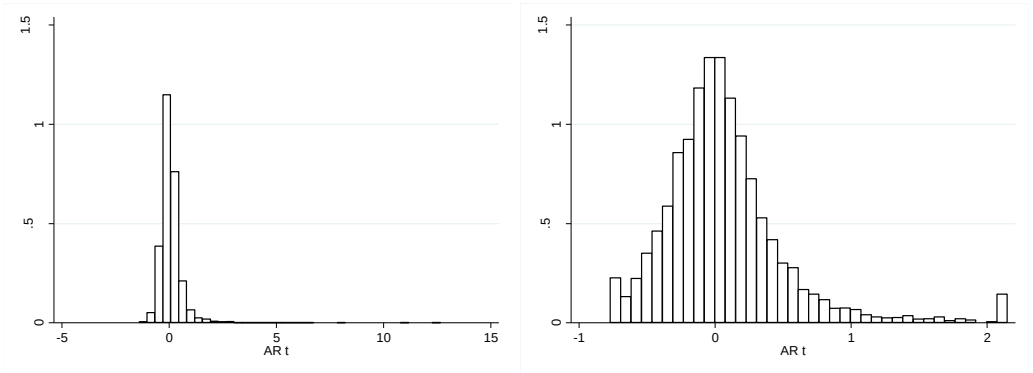
Figure 7.1: Distribution of the variable Y_t before winsorizing (left) and after winsorizing (right).



Before winsorizing:		*After winsorizing (1 and 99 percentile level):*	
Observations:	7,117	Observations:	7,117
Mean:	0.0244107	Mean:	0.0284866
Std. Deviation:	0.1729881	Std. Deviation:	0.1088477
Minimum Value:	-6.375	Minimum Value:	-0.5551724
Maximum Value:	1.273529	Maximum Value:	0.2363928
Skewness:	-12.30337	Skewness:	-2.886898

7.2 Variable AR_t

Figure 7.2: Distribution of the variable AR_t before winsorizing (left) and after winsorizing (right).



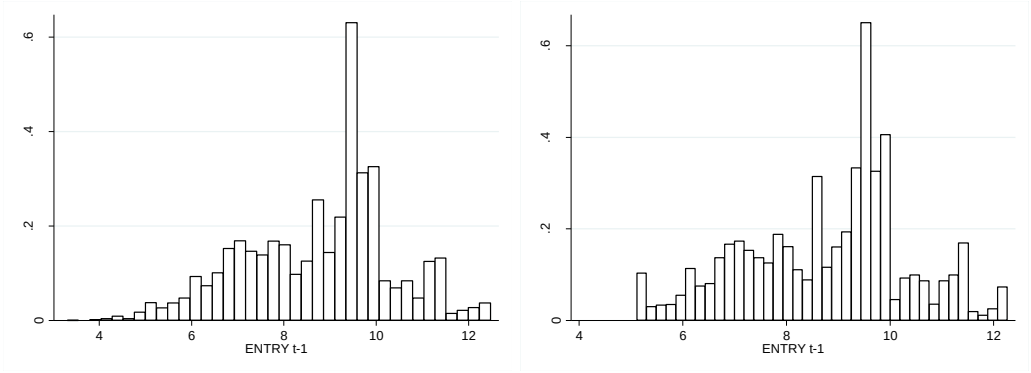
Before winsorizing:		*After winsorizing (1 and 99 percentile level):*	
Observations:	7,117	Observations:	7,117
Mean:	0.0836061	Mean:	.0666315
Std. Deviation:	0.6136886	Std. Deviation:	.4510744
Minimum Value:	-1.401035	Minimum Value:	-.7710323
Maximum Value:	12.64753	Maximum Value:	1.684667
Skewness:	7.1218	Skewness:	2.061364

Continued on next page

TABLE 7 (Continued)

7.3 Variable $ENTRY_{t-1}$

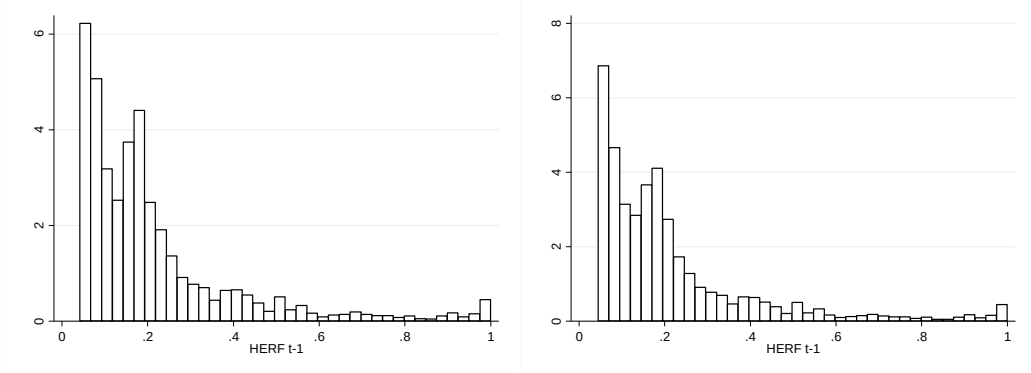
Figure 7.3: Distribution of the variable $ENTRY_{t-1}$ before winsorizing (left) and after winsorizing (right).



Before winsorizing:		*After winsorizing (1 and 99 percentile level):*	
Observations:	7,117	Observations:	7,117
Mean:	8.78778	Mean:	8.433047
Std. Deviation:	1.586299	Std. Deviation:	1.686285
Minimum Value:	3.315821	Minimum Value:	4.716085
Maximum Value:	12.47691	Maximum Value:	12.26266
Skewness:	-.2951229	Skewness:	-0.1135994

7.4 Variable $HERF_{t-1}$

Figure 7.4: Distribution of the variable $HERF_{t-1}$ before winsorizing (left) and after winsorizing (right).

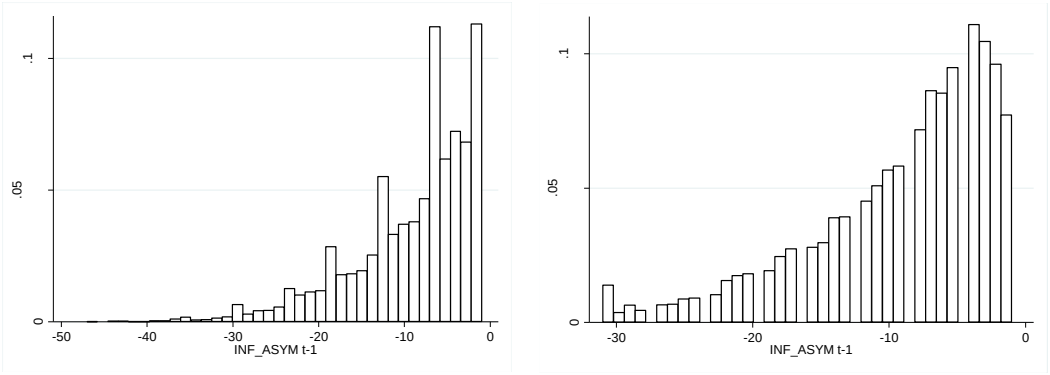


Before winsorizing:		*After winsorizing (1 and 99 percentile level):*	
Observations:	7,117	Observations:	7,117
Mean:	0.2139042	Mean:	0.3008926
Std. Deviation:	0.1919844	Std. Deviation:	0.2210493
Minimum Value:	0.0418466	Minimum Value:	0.0652402
Maximum Value:	1	Maximum Value:	1
Skewness:	2.149297	Skewness:	1.55932

Continued on next page

7.5 Variable INF_ASYM_{t-1}

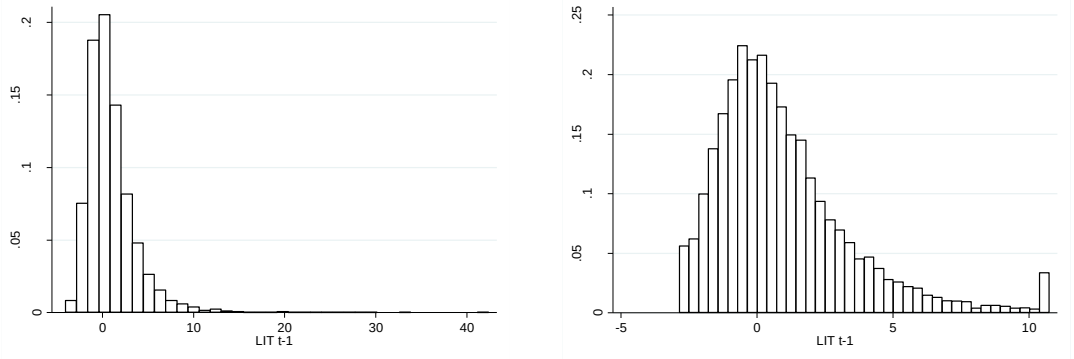
Figure 7.5: Distribution of the variable INF_ASYM_{t-1} before winsorizing (left) and after winsorizing (right).



Before winsorizing:		*After winsorizing (1 and 99 percentile level):*	
Observations:	7,117	Observations:	7,117
Mean:	-9.169875	Mean:	-9.128425
Std. Deviation:	7.008182	Std. Deviation:	6.855866
Minimum Value:	-47	Minimum Value:	-31
Maximum Value:	-1	Maximum Value:	-1
Skewness:	-1.262977	Skewness:	-1.113511

7.6 Variable LIT_{t-1}

Figure 7.6: Distribution of the variable LIT_{t-1} before winsorizing (left) and after winsorizing (right).

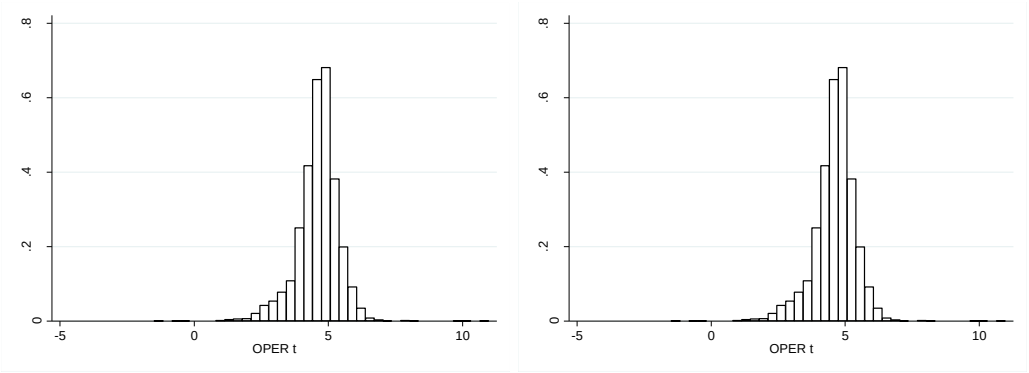


Before winsorizing:		*After winsorizing (1 and 99 percentile level):*	
Observations:	7,117	Observations:	7,117
Mean:	0.9955791	Mean:	0.9419491
Std. Deviation:	2.845764	Std. Deviation:	2.497272
Minimum Value:	-4.045168	Minimum Value:	-2.857253
Maximum Value:	42.38305	Maximum Value:	10.73885
Skewness:	3.078883	Skewness:	1.445102

Continued on next page

7.7 Variable $OPER_t$

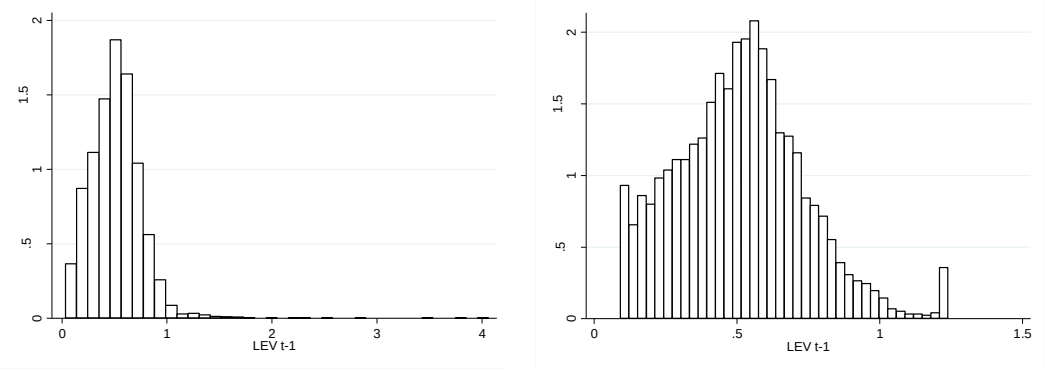
Figure 7.7: Distribution of the variable $OPER_t$ before winsorizing (left) and after winsorizing (right).



Before winsorizing:		*After winsorizing (1 and 99 percentile level):*	
Observations:	7,117	Observations:	7,117
Mean:	4.657375	Mean:	4.612875
Std. Deviation:	0.7923292	Std. Deviation:	0.7750291
Minimum Value:	-3.445442	Minimum Value:	-1.48232
Maximum Value:	19.495234	Maximum Value:	10.97647
Skewness:	-1.8239335	Skewness:	-0.7132911

7.8 Variable LEV_{t-1}

Figure 7.8: Distribution of the variable LEV_{t-1} before winsorizing (left) and after winsorizing (right).



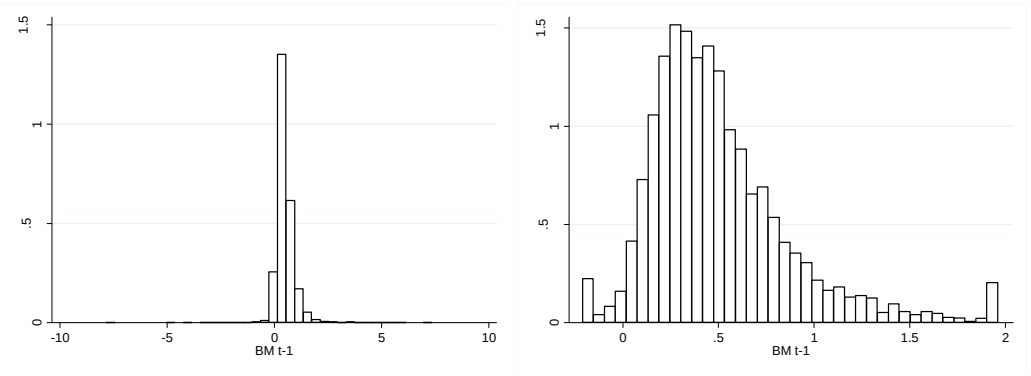
Before winsorizing:		*After winsorizing (1 and 99 percentile level):*	
Observations:	7,117	Observations:	7,117
Mean:	0.5155164	Mean:	0.5120784
Std. Deviation:	0.2446323	Std. Deviation:	0.2236137
Minimum Value:	0.034061	Minimum Value:	0.0919521
Maximum Value:	4.06477	Maximum Value:	1.239878
Skewness:	1.900608	Skewness:	0.4189629

Continued on next page

TABLE 7 (Continued)

7.9 Variable BM_{t-1}

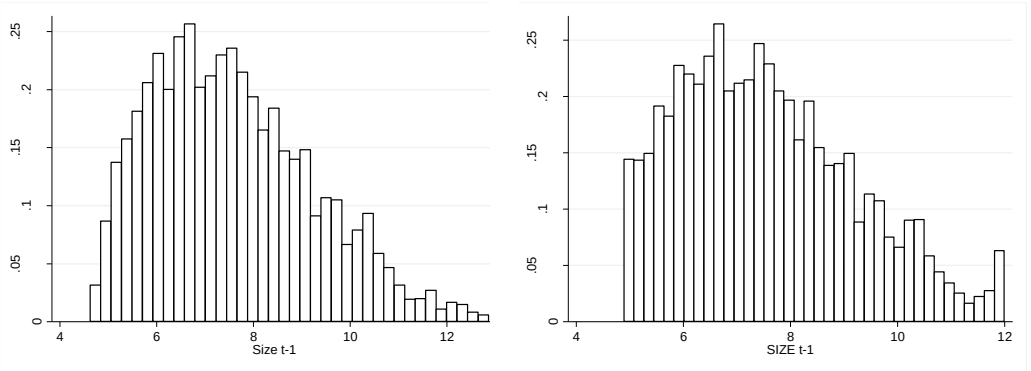
Figure 7.9: Distribution of the variable BM_{t-1} before winsorizing (left) and after winsorizing (right).



Before winsorizing:		*After winsorizing (1 and 99 percentile level):*	
Observations:	7,117	Observations:	7,117
Mean:	.5017361	Mean:	0.5019304
Std. Deviation:	0.4666381	Std. Deviation:	0.3674344
Minimum Value:	-7.838509	Minimum Value:	-0.2104968
Maximum Value:	7.337303	Maximum Value:	1.95977
Skewness:	0.9257281	Skewness:	1.375722

7.10 Variable $Size_{t-1}$

Figure 7.10: Distribution of the variable $Size_{t-1}$ before winsorizing (left) and after winsorizing (right).



Before winsorizing:		*After winsorizing (1 and 99 percentile level):*	
Observations:	7,117	Observations:	7,117
Mean:	7.570826	Mean:	7.568455
Std. Deviation:	1.660561	Std. Deviation:	1.649353
Minimum Value:	4.623815	Minimum Value:	4.888242
Maximum Value:	12.86589	Maximum Value:	11.99709
Skewness:	0.5655198	Skewness:	0.5371418

This table presents the variable distributions before and after winsorizing at the 1st and 99th percentile. Only continuous variables are winsorized.

APPENDIX C: MODEL FIT

Appendix C provides the output of the different tests that is referred to in *section 5.6.1* of this thesis.

- C.1 LINKTEST AND RAMSEY RESET

TABLE 8
Model Specification (Random Effects Model)

Panel A: Link Test			
	Sum of Squares	Degrees of Freedom	Mean of Squares
Model	17.6252959	2	8.81264793
Residual	66.6838225	7,114	0.009373605
Total	84.3091184	7,116	0.011847824
_hat	0.9415134 (34.51)***	Adjusted R-squared	0.2088
		Number of Observations	7,117
_hatsq	-0.6407165 (-4.06)**		
_cons	0.0037589 (2.33)		
Panel B: Ramsey RESET			
Number of Observations	Degrees of Freedom	F-Statistic	P-value
7,117	(3, 7074)	39.68	0.000

This table presents the results of the Link Test (*Panel A*) and the Ramsey RESET Test (*Panel B*) that is conducted to assess the fit of the regression model (*Equation 3*- Random Effects Model).
Panel A: a correlated-omitted-variable problem is likely to be present when the variable *_hat* is significant and the variable *_hatsq* is insignifant .
Panel B: a correlated-omitted-variable problem is likely to be present when the F-statistic is significant and thus the null hypothesis of no correlated-omitted-variable problem can be rejected.
All continuous variables are winsorized at the 1st and 99th percentile. Amounts reported are regression coefficients (with t-statistics in parentheses presented in brackets). (*), (**),(***) represents significance at the 10, 5 and 1 percent level, respectively.

TABLE 9

Model Specification (Fixed Effects Model)

Panel A: Link Test

	Sum of Squares	Degrees of Freedom	Mean of Squares
Model	41.0533525	2	20.5266763
Residual	43.2557658	7,114	0.006080372
Total	84.3091184	7,116	0.011847824

_hat	0.910711 (62.61)***	Adjusted R-squared	0.4868
		Number of Observations	7,117
_hatsq	-0.7987377 (-11.48)***		
_cons	0.0077092 (6.45)***		

Panel B: Ramsey RESET

Number of Observations	Degrees of Freedom	F-Statistic	P-value
7,117	(3, 6179)	195.43	0.000

This table presents the results of the Link Test (*Panel A*) and the Ramsey RESET Test (*Panel B*) that is conducted to assess the fit of the regression model (*Equation 3*- Fixed Effects Model).
Panel A: a correlated-omitted-variable problem is likely to be present when the variable *_hat* is significant and the variable *_hatsq* is insignifant .
Panel B: a correlated-omitted-variable problem is likely to be present when the F-statistic is significant and thus the null hypothesis of no correlated-omitted-variable problem can be rejected.
All continuous variables are winsorized at the 1st and 99th percentile. Amounts reported are regression coefficients (with t-statistics in parentheses presented in brackets). (*), (**),(***) represents significance at the 10, 5 and 1 percent level, respectively.

- C.2 HAUSMAN TEST

TABLE 10

Hausman Test

Observations	χ^2-value	P-value
7,117	3766.34	0.000

This table presents the results of the Hausman Test which is performed on *Equation 3* with and without the inclusion of firm fixed effects in the regression model. H_0: the random effects model is appropriate and H_a: the fixed effects model is appropriate. The p-value of <0.000 results in the rejection of the random effects model in favour of the fixed effects model.

APPENDIX D: ASSUMPTIONS OLS-REGRESSION

Appendix D provides the output of the different tests that is referred to in *section 5.6.2* of this thesis.

- D.1 (NO) NORMALLY DISTRIBUTED RESIDUALS AND MEAN OF ZERO

  - *D.1.1 Full Sample:*

TABLE 11
Distribution Residuals

Panel A: Residuals Mean				
Observations	Mean	Std. Error	t-value	P-value
7,117	-2.13e-11	0.0012262	0.000	1.000
Panel B: Shapiro-Wilk Test				
Observations	W	V	z-value	P-value
7,117	0.84876	560.008	16.780	0.000

Panel A of this table presents the results of the test that is performed to assess whether the mean of the residuals (*Equation 3*) is zero. The null hypothesis that the mean is significantly different from zero cannot be rejected (p-value=1.000).
Panel B of this tables presents the results of the Shapiro-Wilk test that is performed to test whether the residuals of the regression (*Equation 3*) is normally distributed. The z-value of the test is highly significant (p-value<0.000). For this reason, this thesis rejects the null hypothesis of normally distributed standard errors.

  - *D. 1.2 Market Followers Sample:*

TABLE 12
Distribution Residuals

Panel A: Residuals Mean				
Observations	Mean	Std. Error	t-value	P-value
3,759	-2.87e-12	0.0019024	0.000	1.000
Panel B: Shapiro-Wilk Test				
Observations	W	V	z-value	P-value
3,759	0.85986	294.166	14.779	0.000

Panel A of this table presents the results of the test that is performed to assess whether the mean of the residuals (*Equation 3*) is zero. The null hypothesis that the mean is significantly different from zero cannot be rejected (p-value=1.000).
Panel B of this tables presents the results of the Shapiro-Wilk test that is performed to test whether the residuals of the regression (*Equation 3)* is normally distributed. The z-value of the test is highly significant (p-value<0.000). For this reason, this thesis rejects the null hypothesis of normally distributed standard errors.

  - *D. 1.3 Market Leaders Sample:*

TABLE 13
Distribution Residuals

Panel A: Residuals Mean				
Observations	Mean	Std. Error	t-value	P-value
3,358	-3.75e-11	0.0015347	0.000	1.000
Panel B: Shapiro-Wilk Test				
Observations	W	V	z-value	P-value
3,358	0.88492	218.252	13.951	0.000

Panel A of this table presents the results of the test that is performed to assess whether the mean of the residuals (*Equation 3*) is zero. The null hypothesis that the mean is significantly different from zero cannot be rejected (p-value=1.000).
Panel B of this tables presents the results of the Shapiro-Wilk test that is performed to test whether the residuals of the regression (*Equation 3*) is normally distributed. The z-value of the test is highly significant (p-value<0.000). For this reason, this thesis rejects the null hypothesis of normally distributed standard errors.

- D.2 HOMOSCEDASTIC (HETEROSCEDASTIC) RESIDUALS

  - *D.2.1 Full Sample:*

TABLE 14

Breusch-Pagan Test/Cook-Weisberg Test

Observations	χ^2-value	P-value
7,117	5053.99	0.000

This table presents the results of the Breusch-Pagan test/Cook-Weisberg Test which is performed on *Equation 3* to assess whether the residuals are homoscedastic. The p-value of <0.000 results in the rejection of homoscedastic standard errors in favour of heteroscedastic standard errors. H_0: homoscedastic standard errors and H_a: heteroscedastic standard errors.

  - *D. 2.2 Market Followers Sample:*

TABLE 15

Breusch-Pagan Test/Cook-Weisberg Test

Observations	χ^2-value	P-value
3,759	2040.06	0.000

This table presents the results of the Breusch-Pagan test/Cook-Weisberg Test which is performed on *Equation 3* to assess whether the residuals are homoscedastic. The p-value of <0.000 results in the rejection of homoscedastic standard errors in favour of heteroscedastic standard errors. H_0: homoscedastic standard errors and H_a: heteroscedastic standard errors.

  - *D. 2.3 Market Followers Sample:*

TABLE 16

Breusch-Pagan Test/Cook-Weisberg Test

Observations	χ^2-value	P-value
3,358	2732.09	0.000

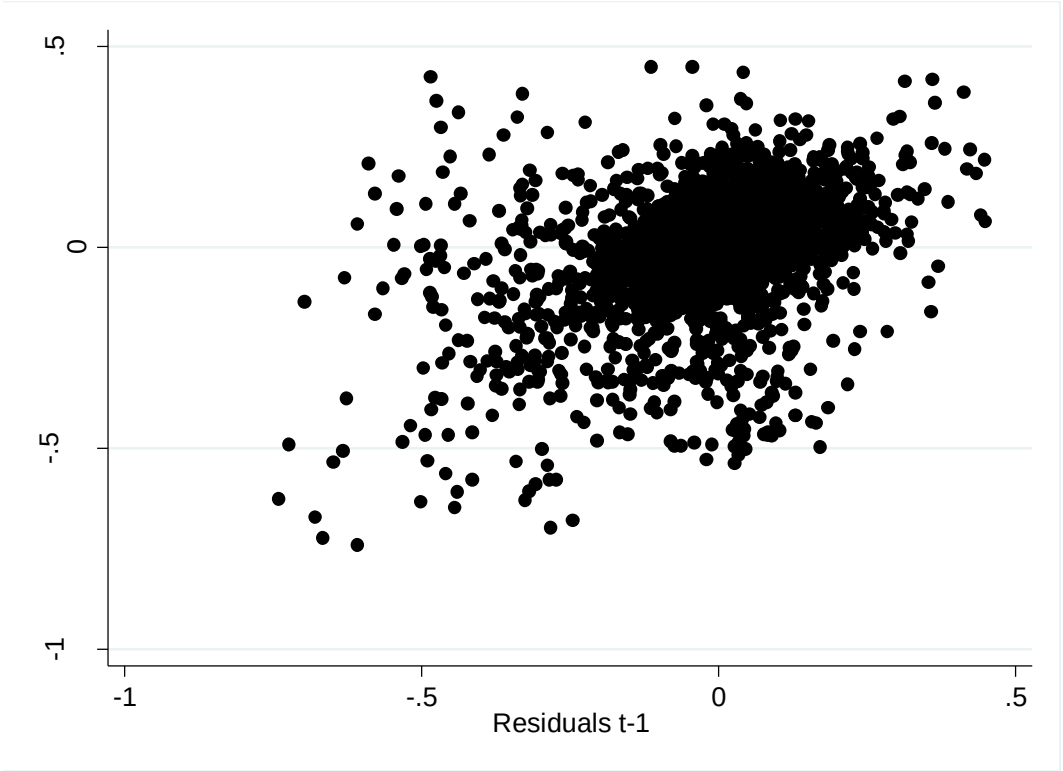
This table presents the results of the Breusch-Pagan test/Cook-Weisberg Test which is performed on *Equation 3* to assess whether the residuals are homoscedastic. The p-value of <0.000 results in the rejection of homoscedastic standard errors in favour of heteroscedastic standard errors. H_0: homoscedastic standard errors and H_a: heteroscedastic standard errors.

- D.3 (NO) AUTOCORRELATION BETWEEN RESIDUALS AND LAGGED RESIDUALS

  - *D.3.1 Full Sample:*

FIGURE 3

Scatterplot Residuals Against Lagged Residuals



This figure presents a scatterplot of residuals against lagged residuals. An equally dispersed distribution of scatter points across the four quadrants (i.e., when drawing a straight line from the zeros) would suggest the absence of autocorrelation.

TABLE 17

Wooldridge Test

Observations	Degrees of Freedom (F)	χ^2-value	P-value
7,117	1; 815	89.802	0.000

This table presents the results of the Wooldridge Test which is performed on *Equation 3* to assess whether the residuals are autocorrelated. The p-value of <0.000 suggests the rejection of the null hypothesis of no residual autocorrelation in favour of the alternative hypothesis. H_0: no residual autocorrelation and H_a: residual autocorrelation.

  - *D.3.2 Market Followers Sample:*

TABLE 18

Wooldridge Test

Observations	Degrees of Freedom (F)	χ^2-value	P-value
3,759	1; 475	88.445	0.000

This table presents the results of the Wooldridge Test which is performed on *Equation 3* to assess whether the residuals are autocorrelated. The p-value of <0.000 suggests the rejection of the null hypothesis of no residual autocorrelation in favour of the alternative hypothesis. H_0: no residual autocorrelation and H_a: residual autocorrelation.

- *D.3.2 Market Leaders Sample:*

TABLE 19

Wooldridge Test

Observations	Degrees of Freedom (F)	χ^2-value	P-value
3,358	1; 398	17.519	0.000

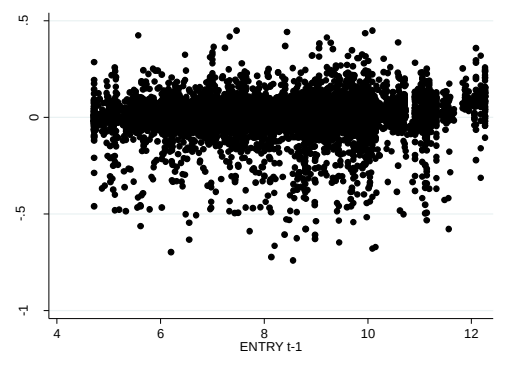
This table presents the results of the Wooldridge Test which is performed on *Equation 3* to assess whether the residuals are autocorrelated. The p-value of <0.000 suggests the rejection of the null hypothesis of no residual autocorrelation in favour of the alternative hypothesis. H_0: no residual autocorrelation and H_a: residual autocorrelation.

- D.4 LINEARITY BETWEEN INDEPENDENT AND DEPENDENT VARIABLES

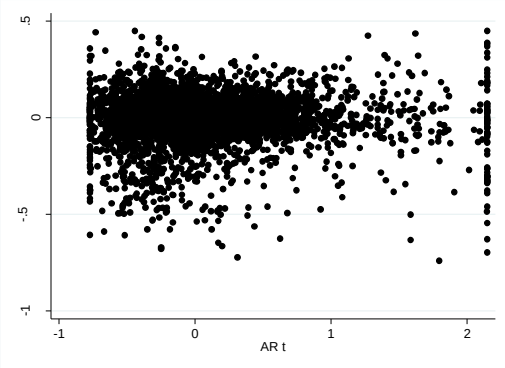
  - *D.4.1 Full Sample:*

FIGURE 4
Scatterplots Residuals Against Independent Variables

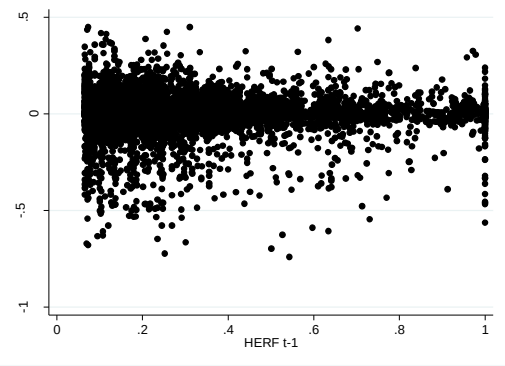
4..1 Variable $ENTRY_{t-1}$



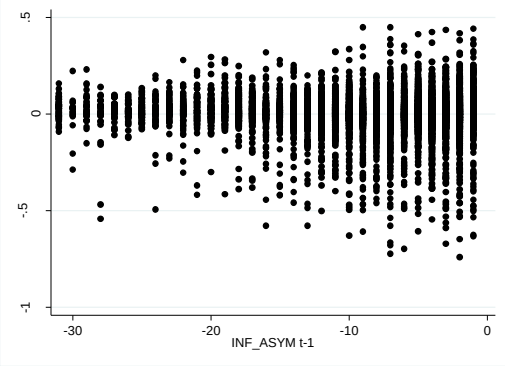
4.2 Variable AR_t



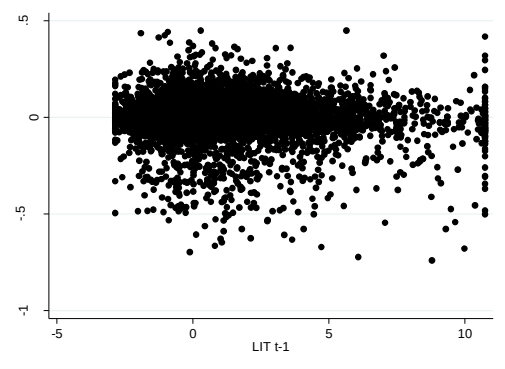
4.3 Variable $HERF_{t-1}$



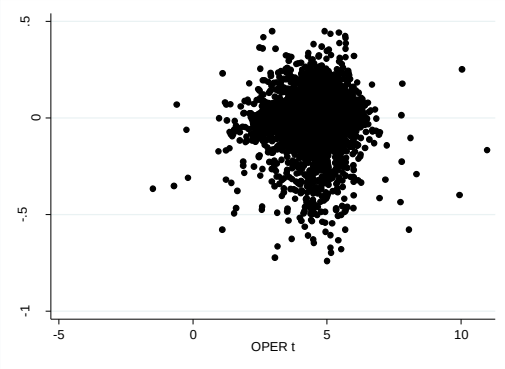
4.4 Variable INF_ASYM_{t-1}



4.5 Variable LIT_{t-1}



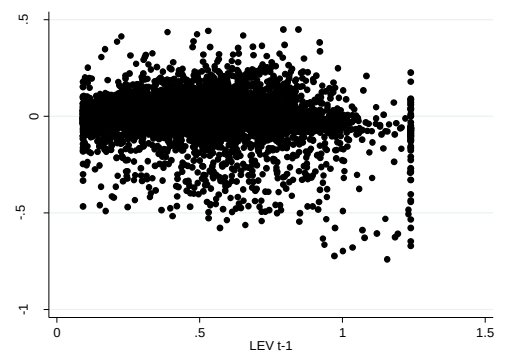
4.6 Variable $OPER_t$



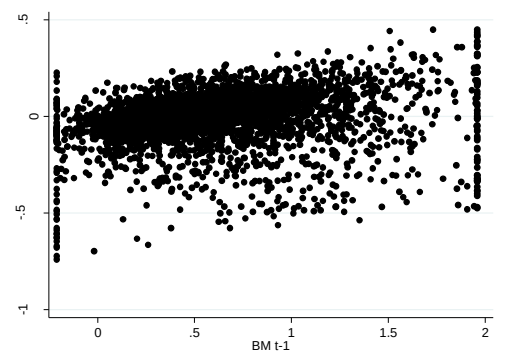
Continued on next page

Figure 4 (Continued)

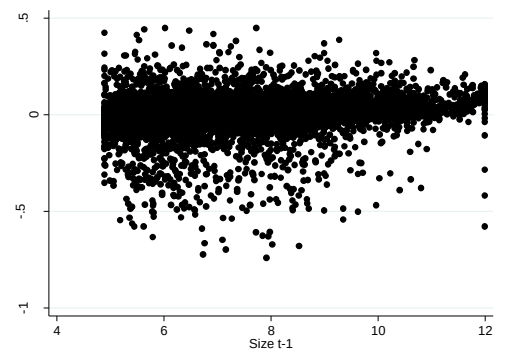
4.7 Variable LEV_{t-1}



4.8 Variable BM_{t-1}



4.9 Variable $SIZE_{t-1}$

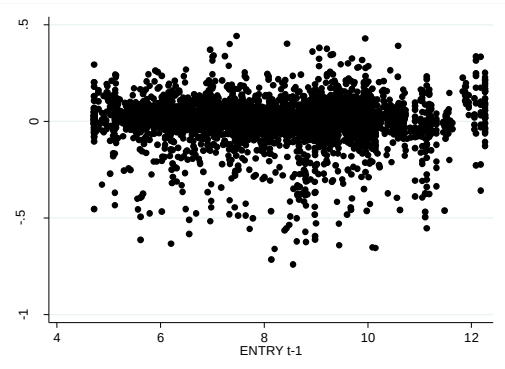


This figure presents scatterplots of the independent variables against the residuals. Linearity between the *X* and *Y* variate(s) can be assumed to be present when a straight line through the scatter points fits the lines at best. The distribution of the scatter points shows no indications for any nonlinear relationships.

- *D.4.2 Market Followers Sample:*

FIGURE 5
Scatterplots Residuals Against Independent Variables

5.1 Variable $ENTRY_{t-1}$



5.2 Variable AR_t

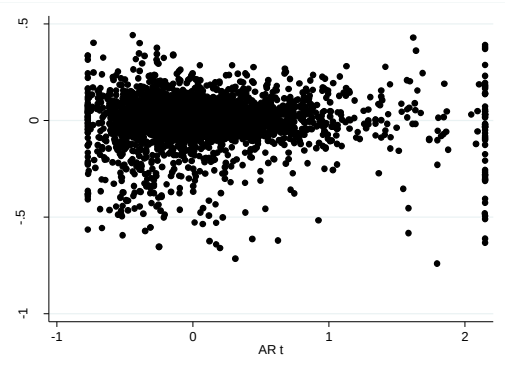


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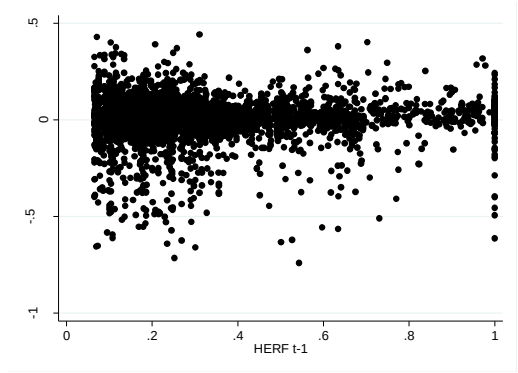
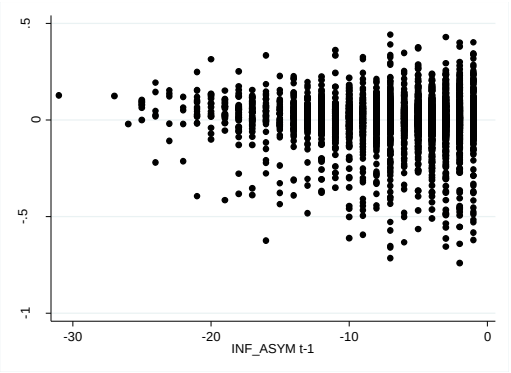
Figure 5 (Continued)

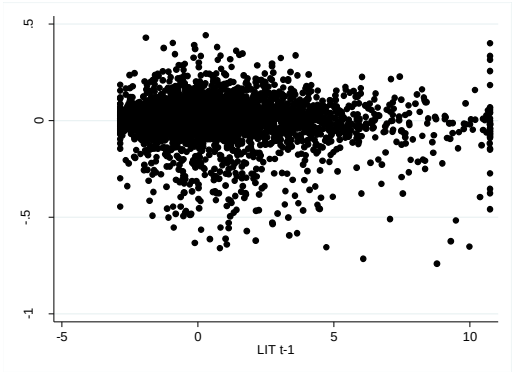
5.3 Variable $HERF_{t-1}$



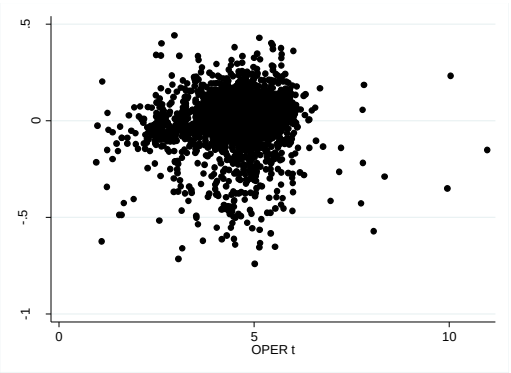
5.4 Variable INF_ASYM_{t-1}



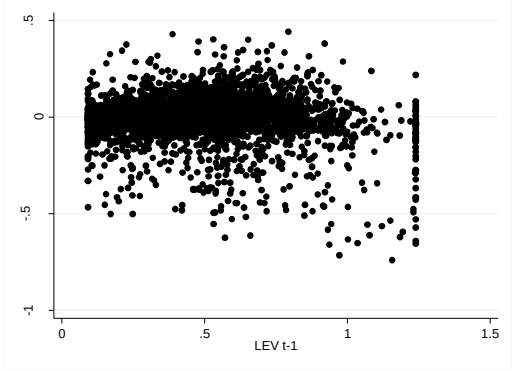
5.5 Variable LIT_{t-1}



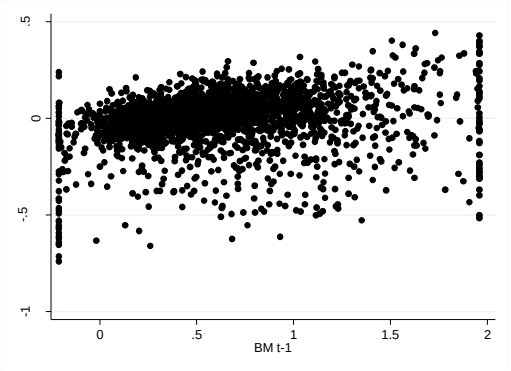
5.6 Variable $OPER_{t}$



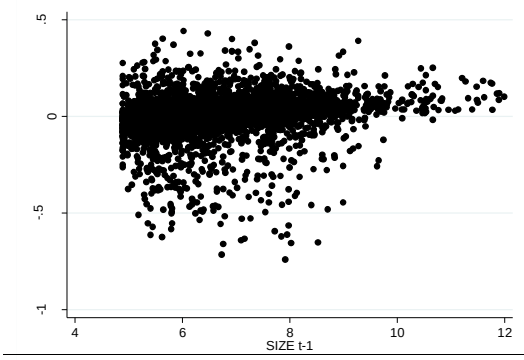
5.7 Variable LEV_{t-1}



5.8 Variable BM_{t-1}



5.9 Variable $SIZE_{t-1}$

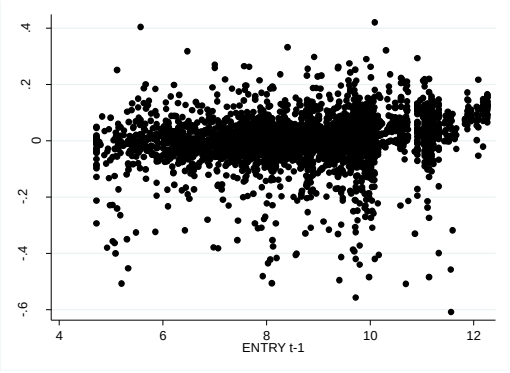


This figure presents scatterplots of the independent variables against the residuals. Linearity between the *X* and *Y* variate(s) can be assumed to be present when a straight line through the scatter points fits the lines at best. The distribution of the scatter points shows no indications for any nonlinear relationships.

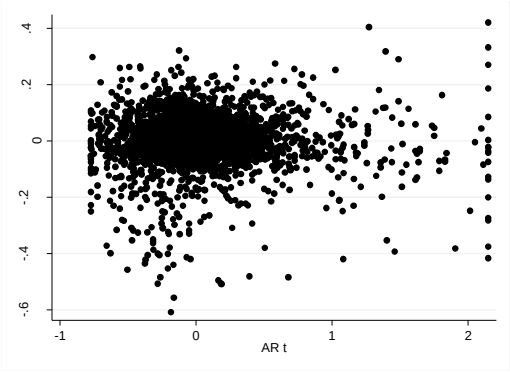
- *D.4.3 Market Leaders Sample:*

FIGURE 6
Scatterplots Residuals Against Independent Variables

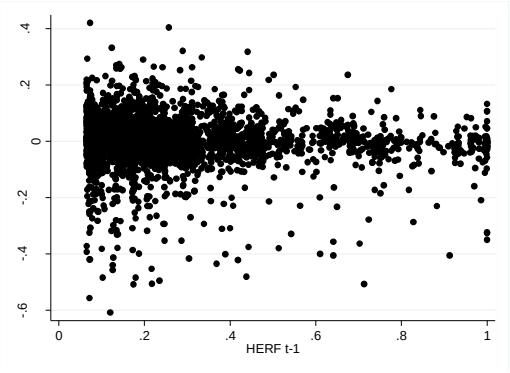
6.1 Variable $ENTRY_{t-1}$



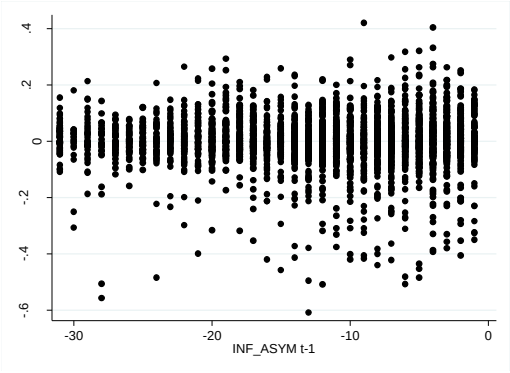
6.2 Variable AR_t



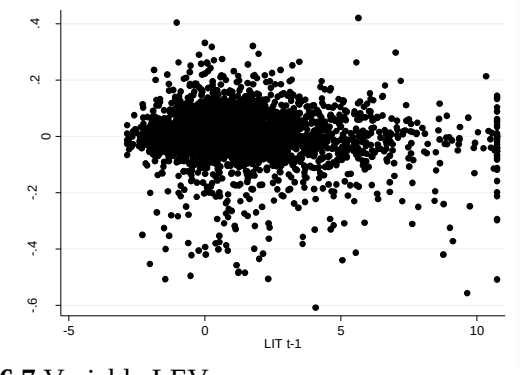
6.3 Variable $HERF_{t-1}$



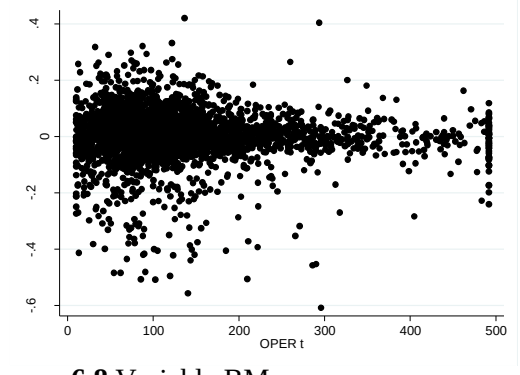
6.4 Variable INF_ASYM_{t-1}



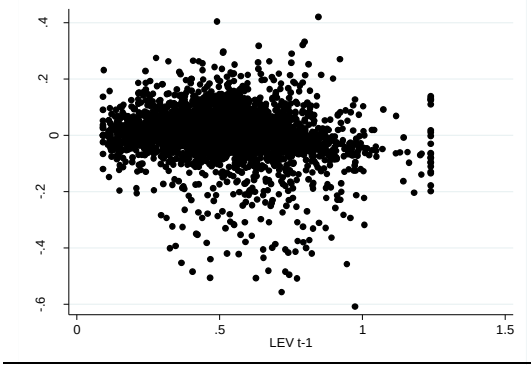
6.5 Variable LIT_{t-1}



6.6 Variable $OPER_t$



6.7 Variable LEV_{t-1}



6.8 Variable BM_{t-1}

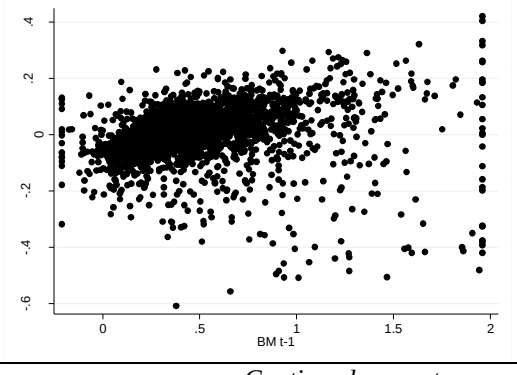


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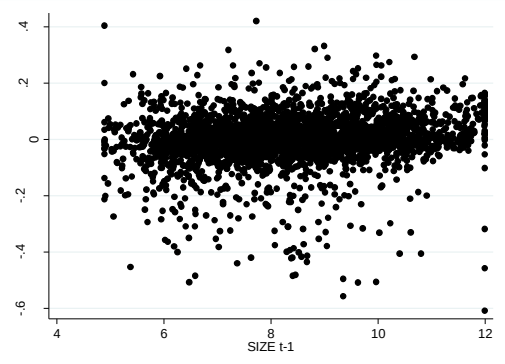
Figure 6 (Continued)

6.9 Variable $SIZE_{t-1}$



This figure presents scatterplots of the independent variables against the residuals. Linearity between the *X* and *Y* variate(s) can be assumed to be present when a straight line through the scatter points fits the lines at best. The distribution of the scatter points shows no indications for any nonlinear relationships.

- D.5 MULTICOLLINEARITY

  - *D.5.1 Full Sample:*

TABLE 20

Variance Inflation Factor (VIF) values

Panel A: VIF values- all individual regression variables

Variable		Variable	VIF(1)
$ENTRY_{t-1}$	1.29	LEV_{t-1}	1.33
BIG_FOUR_{t-1}	1.09	BM_{t-1}	1.13
$HERF_{t-1}$	1.20	$SIZE_{t-1}$	1.82
INF_ASYM_{t-1}	1.60	D_t	1.89
LIT_{t-1}	1.10	AR_t	1.92
$OPER_t$	1.05		
		Mean VIF	1.40

Panel B: VIF values- all regression terms

Variable	VIF(1)	VIF(2)	Variable	VIF(1)	VIF(2)
$ENTRY_{t-1}$	4.51	3.40	$AR_t * ENTRY_{t-1}$	**87.06**	4.45
BIG_FOUR_{t-1}	3.84	3.09	$AR_t * BIG\_FOUR_{t-1}$	**26.20**	4.04
$HERF_{t-1}$	4.19	3.16	$AR_t * HERF_{t-1}$	5.95	4.95
INF_ASYM_{t-1}	5.83	3.98	$AR_t * INF\_ASYM_{t-1}$	9.97	4.56
LIT_{t-1}	4.45	3.03	$AR_t * LIT_{t-1}$	3.86	4.12
$OPER_t$	3.74	2.97	$AR_t * OPER_t$	**63.48**	4.42
LEV_{t-1}	4.48	3.56	$AR_t * LEV_{t-1}$	**16.75**	5.46
BM_{t-1}	4.40	3.31	$AR_t * BM_{t-1}$	5.88	7.23
$SIZE_{t-1}$	6.31	4.64	$AR_t * SIZE_{t-1}$	**90.63**	5.20
D_t	**239.34**	2.78	$D_t * AR_t$	**224.29**	2.21
$D_t * ENTRY_{t-1}$	**98.25**	3.47	$D_t * AR_t * ENTRY_{t-1}$	**94.13**	4.52
$D_t * BIG\_FOUR_{t-1}$	**36.30**	3.15	$D_t * AR_t * BIG\_FOUR_{t-1}$	**28.95**	4.10
$D_t * HERF_{t-1}$	8.43	3.22	$D_t * AR_t * HERF_{t-1}$	6.75	5.02
$D_t * INF\_ASYM_{t-1}$	**13.47**	4.06	$D_t * AR_t * INF\_ASYM_{t-1}$	**11.42**	4.64
$D_t * LIT_{t-1}$	6.04	3.08	$D_t * AR_t * LIT_{t-1}$	5.09	4.15
$D_t * OPER_t$	**96.19**	3.03	$D_t * AR_t * OPER_t$	**82.43**	4.49
$D_t * LEV_{t-1}$	**20.95**	3.62	$D_t * AR_t * LEV_{t-1}$	**18.06**	5.61
$D_t * BM_{t-1}$	**11.33**	3.36	$D_t * AR_t * BM_{t-1}$	8.72	7.36
$D_t * SIZE_{t-1}$	**93.74**	4.74	$D_t * AR_t * SIZE_{t-1}$	**83.12**	5.28
AR_t	**208.40**	4.10			
			Mean VIF	**44.79**	4.07

This table presents the values of the Variance Inflation Factors (VIF) for the full sample. *Panel A* represents the VIF values for all individual variables. *Panel B* presents the VIF values for all terms in the model. VIF(1) represents the value of VIF before mean centering all variables. VIF(2) shows the value of VIF after mean centering all continuous variables. VIF-values above 10 (in bold) are generally considered as indication for severe multicollinearity problems.

- *D.5.2 Market Followers Sample:*

TABLE 21

Variance Inflation Factor (VIF) values

Panel A: VIF values all individual regression variables

Variable	Variable	VIF(1)
$ENTRY_{t-1}$	1.21	LEV_{t-1}	1.48
BIG_FOUR_{t-1}	1.08	BM_{t-1}	1.14
$HERF_{t-1}$	1.22	$SIZE_{t-1}$	1.66
INF_ASYM_{t-1}	1.33	D_t	1.94
LIT_{t-1}	1.10	AR_t	1.97
$OPER_t$	1.06		
		Mean VIF	1.38

This table presents the values of the Variance Inflation Factors (VIF) for the market followers sample. VIF-values above 10 (in bold) are generally considered as indication for severe multicollinearity problems.

- *D.5.3 Market Leaders Sample:*

TABLE 22

Variance Inflation Factor (VIF) values

Panel A: VIF values all individual regression variables

Variable	Variable	VIF(1)
$ENTRY_{t-1}$	1.46	LEV_{t-1}	1.22
BIG_FOUR_{t-1}	1.04	BM_{t-1}	1.13
$HERF_{t-1}$	1.27	$SIZE_{t-1}$	1.69
INF_ASYM_{t-1}	1.40	D_t	1.88
LIT_{t-1}	1.11	AR_t	1.89
$OPER_t$	1.07		
		Mean VIF	1.38

This table presents the values of the Variance Inflation Factors (VIF) for the market leaders sample. VIF-values above 10 (in bold) are generally considered as indication for severe multicollinearity problems.

APPENDIX E: DESCRIPTIVE STATISTICS SUBSAMPLES

Appendix E provides the descriptive statistics for the subsamples as required for the second hypothesis of this thesis. Descriptive statistics on the full sample are provided in *Table 3* of this thesis.

TABLE 23
Descriptive Statistics Subsamples

Panel A: Descriptive Statistics Market Followers

Variable Name	Number of Observations	Mean Value	Standard Deviation	Minimum Value	Maximum Value
Y_t	3,759	0.0202488	0.1209189	-0.5551724	0.2363928
AR_t	3,759	0.0841563	0.4904307	-0.7710323	2.148564
D_t	3,759	0.4841713	0.4998159	0	1
$ENTRY_{t-1}$	3,759	8.610801	1.645114	5.114533	12.26266
$HERF_{t-1}$	3,759	0.2459821	0.2105138	0.0444353	0.9999635
INF_ASYM_{t-1}	3,759	-6.443735	4.558351	-31	-1
LIT_{t-1}	3,759	0.6916424	2.552034	-2.857253	10.73885
$OPER_t$	3,759	4.578621	0.7868763	.956541	10.97647
LEV_{t-1}	3,759	0.4953511	0.2405132	.0919521	1.239878
BM_{t-1}	3,759	0.5455207	0.3904903	-0.2104968	1.95977
$SIZE_{t-1}$	3,759	6.746643	1.21878	4.888242	11.99709

Panel B: Descriptive Statistics Market Leaders

Variable Name	Number of Observations	Mean Value	Standard Deviation	Minimum Value	Maximum Value
Y_t	3,358	0.0377082	0.0926577	-0.5551724	0.2363928
AR_t	3,358	0.047014	0.401646	-0.7710323	2.148564
D_t	3,358	0.4922573	0.5000145	0	1
$ENTRY_{t-1}$	3,358	8.993612	1.461256	5.114533	12.26266
$HERF_{t-1}$	3,358	0.1780239	0.1614589	0.0444353	0.9988734
INF_ASYM_{t-1}	3,358	-12.13371	7.698616	-31	-1
LIT_{t-1}	3,358	1.222147	2.404162	-2.857253	10.73885
$OPER_t$	3,358	4.651219	0.7598355	-1.48232	8.1261
LEV_{t-1}	3,358	0.5308032	0.2014287	0.0919521	1.239878
BM_{t-1}	3,358	0.4531347	0.3331319	-0.2104968	1.95977
$SIZE_{t-1}$	3,358	8.488406	1.581398	4.888242	11.99709

Panel A of this table presents the descriptive statistics for the market followers sample for all variables that are included in the regression model. All continuous variables are winsorized at the 1st and 99th percentile.
Panel B of this table presents the descriptive statistics for the market leaders sample for all variables that are included in the regression model. All continuous variables are winsorized at the 1st and 99th percentile.