



The Effect of Gender on Accounting Conservatism in Finnish Listed Firms

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<p>Abstract: The purpose of this thesis is to examine if gender has an effect on accounting conservatism in Finnish listed firms. Accounting conservatism is of interest because of its dual character. It can take non-excluding forms, both through asymmetric timeliness recognition as well as biased valuation. It occurs both through accounting choices made by managers, but at the same time it is paralleled with corporate governance mechanisms used by boards. Furthermore, accounting conservatism affects different statements users in different ways.</p> <p>Therefore, it is of interest to study the determinants of accounting conservatism. As women are more risk-averse and accounting conservatism is found to be increased because of risk-averseness it is hypothesised that the gender will have an effect on accounting conservatism. Furthermore, the critical mass theory is conceptually tied to the literature strand. More specifically, women as CEO's, CFO's and the rate of women on boards are chosen to represent the avenues through which women might affect the rate of accounting conservatism in Finnish listed firms. A seven-year time frame is chosen, 2010-2017 and results in a final unbalance panel data of 127 firms, 786 firm-year observations.</p> <p>The agency theory is presented to give an understanding of the underlying reasons for the existence of accounting conservatism. Especially the agency problem for debt and equity-model becomes of interest specifically in The Nordic corporate governance settings where debtholders are important providers of capital. As the Nordic countries are described being so similar that they have a joint Corporate governance model (Lekvall 2018), a study of Finland can be argued to represent the Nordic model. Therefore, the Nordic model with insights about how gender diversity is present in the Corporate Governance codes is presented thoroughly to understand the differences in the setting compared to prior research studying the relationship between gender and accounting conservatism.</p> <p>To capture the effect of gender on accounting conservatism, a review of the existing accounting conservatism literature is presented. The concepts valuation versus contracting perspective, substitute versus complement perspective as well as the differentiation between unconditional and conditional conservatism is covered in this thesis. Based on this as well as a thorough discussion of accounting conservatism measures applied in the field, the research model is constructed.</p> <p>Through conducting univariate and multivariate fixed effects OLS regressions, gender is found to have an effect on conditional accounting conservatism. The results on both independent and control variables are in line with prior literature. More specifically female CFOs and CEOs are found to have a positive relationship with conditional accounting conservatism. As such, it can be argued that the results from this thesis contribute on the possible benefits of having women in top positions since the relationship has economic significance and is beneficial to the stakeholders. Boards are found to have a negative relationship with conditional accounting conservatism but no reliable proof of the effect of the rate of women on boards are concluded. As a result, the critical mass theory cannot be confirmed in the context of accounting conservatism. No significance results on unconditional conservatism is neither obtained.</p>	
Keywords: Accounting conservatism, Conditional conservatism, unconditional conservatism, Nordic Corporate Governance, Asymmetric-accruals-to-cash-flow, Gender diversity, Risk-taking	

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<p>Sammanfattning: Denna avhandling undersöker sambandet mellan kön och konservativ redovisning i finländska börsnoterade bolag. Konservativ redovisning framkommer när förlust och vinst rapporteras olika snabbt det vill säga när det uppstår en asymmetri. Konservativ redovisning framkommer även när tillgångar är missvisande på grund av försiktighet. Således, är konservativ redovisning ett aktivt val taget av företagets ledare. Det anses även vara ett sätt för styrelsen att styra företagets ledare genom att kräva mer konservatism och representerar i och med det en bolagsstyrningsmekanism. Ett konservativt bokslut påverkar olika intressenter på olika sätt. Eftersom konservativ redovisning har en så mångfacetterad karaktär samt effekt, är det av intresse att undersöka determinanterna för konservativ redovisning. En av de determinanter som bevisats leda till konservativ redovisning är obenägenheten att ta risker. Det har även bevisats att kvinnor är försiktigare att ta risker jämfört med män. Dessa två samband binds ihop i denna avhandling genom en extensiv litteraturgenomgång. Sammanfattningsvis anses kön ha en påverkan på konservativ redovisning. En kvinnlig vd, en kvinnlig finansdirektör och andelen kvinnor i styrelsen representerar avhandlingens könsvariabler. Avhandlingens sampel består av 127 företag under tidsperioden 2010–2017. Det totala samplet uppgår således till 786 observationer.</p> <p>Den teoretiska referensramen omfattar för det första agentteorin men även agentproblemet mellan skuld och eget kapital. Agentteorin är den underliggande orsaken till uppkomsten av konservativ redovisning. Agentproblemet mellan skuld och eget kapital är av stor vikt i den nordiska modellen eftersom den representerar ett bankbaserat system. Teorin omfattar även en överblick över den nordiska modellen eftersom Finland anses tillhöra den. Graden av jämlikhet i de olika ländernas bolagsstyrningsbestämmelser diskuteras för att ge bevis på likheterna.</p> <p>Undersökningsmodellen som jag i denna avhandling använder mig av konstrueras på basen av de centralaste begreppen och modellerna från litteraturen om konservativ redovisning. Avhandlingen skiljer på obetingad och betingad konservativ redovisning. Modellen som valts för betingad konservativ redovisning är ACCF-modellen. Den obetingade konservativa redovisningen testas med NA-modellen. Resultaten visar att kön har en påverkan på betingad konservatism. Kvinnor som verkställande direktörer och kvinnor som finansdirektörer påvisas leda till mer konservativ redovisning i finländska börsnoterade bolag. Dessa resultat är enhetliga med tidigare forskning. Avhandlingen bidrar genom att ge bevis på konservatism i ett bankbaserat och kontraktbaserat system. I dessa system har konservatism konkreta ekonomiska fördelar för företagets intressenter. Det visade sig även att styrelser har ett negativt samband med betingad konservatism. Detta är enhetligt med vad som förväntas av en bolagsstyrningsmekanism. Inga bevis hittas för att en större andel kvinnor i styrelsen skulle innebära mer konservatism. Inga signifikanta resultat rapporteras för obetingad konservatism.</p>	

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1 INTRODUCTION

Accounting conservatism can broadly be defined as accounting choices that prefer a timelier recognition of losses or/and overstatement (understatement) of liabilities (assets). As a result, the accounting book value is understated compared to the market value of equity (Ruch and Taylor 2015). These choices are either made by managers or due to requirements by the board.

On the one hand, accounting conservatism is highly debated, both among legislators and researchers due to different users of financial statements perceiving the informational role of accounting differently. Therefore, conservatism is perceived to either enhance or decrease the quality of financial reporting depending on the financial statement users. (Ruch and Taylor 2015)

On the other hand, accounting conservatism has been argued to be an avenue for corporate governance (Goergen 2012; Watts 2003). It is a viable property of accounting that can be utilised to mitigate the agency problem by decreasing information asymmetry in contracts (Watts 2003; Ahmed and Duellman 2007; LaFond and Watts 2008). Because of the variety of effects that accounting conservatism has, it has also become of interest to research the determinant side of accounting conservatism.

1.1 Problem area

Risk averseness has been found to have a relationship with accounting conservatism - a more risk averse individual chooses more accounting conservatism (e.g. Larmade and Stolowy 2017; Sari et al 2017). Furthermore, prior literature from different research areas show that women are more risk averse than men resulting in also more risk averse actions (e.g. Levin et al. 1988; Niederle et al. 2007; Levi et al. 2008; Huang and Kisgen 2013; Faccio et al. 2016).

Since a relationship has been found between gender and risk averseness as well as risk averseness and accounting conservatism, the relationship is assumed to also exist between gender and accounting conservatism. This relationship has been proven to exist in a US setting (Francis et al. 2015; Ho et al. 2015). However, it has been stated that different corporate governance settings affect the degree of conservatism (Ball et al. 2000). The Nordic corporate governance setting, which Finland represents, differs significantly from the US (Lekvall 2014). The Nordic countries are described to be similar to the extent that are stated to have a joint Corporate governance model (Lekvall 2018).

Therefore, study on Finland can be argued to represent the Nordic model as well. As Lekvall (2018) reports “It is widely held that the way Nordic companies are governed play a significant role in the often remarkable performance in the international markets” Thus, it becomes of interest to see if the results from a US setting also holds in the Finnish setting.

1.2 Purpose and limitations

The purpose of this thesis is to examine if gender has an effect on accounting conservatism in Finnish listed firms. More specifically, if a woman in a top position is a determinant for accounting conservatism. Women as CEO's, women as CFO's and the rate of women on boards are chosen to represent the avenues through which women might have an effect on accounting conservatism. The thesis distinguishes between conditional and unconditional conservatism where asymmetric accruals will be the determinant for the prior and negative accruals for the latter. The financial and real estate sector is not included in this thesis.

1.3 Contribution

Accounting conservatism is widely researched. Also, gender as a determinant has been researched thoroughly in corporate governance literature and earnings management literature. However, only a few have researched the relationship between the two constructs combined in this thesis - gender and accounting conservatism. The most known research is by Francis, Hasan, Park and Wu (2015). They researched the relationship between the gender of the CFO and accounting conservatism for S&P 1500 firms between 1988-2007. Also, Ho, Li, Tam and Zhang (2015) studies the relationship between CEO gender and accounting conservatism in companies with more than 10-million dollars of total assets/sales between 1996 and 2008.

There exists no prior research on the relationship between gender and accounting conservatism in Nordic or Finnish listed firms (according to the authors knowledge). That by itself represents a contribution to the literature strand. The time frame 2010-2017 applied is also more current than prior studies. However, even more than that, the thesis contributes to the actual discussions in the literature strand.

Finland represent the Nordic model that has the character of being bank-based (La Porta et al. 1997). In that setting, accounting conservatism is preferred. This argument is derived from the agency problem between debt and equity, since it leads to losses being

reported faster. Hence, it can be argued that the results from this thesis contribute on the possible benefits of having women in top positions. As such, the relationship has economic significance that is beneficial to the stakeholders. Therefore, it can be argued that the thesis contributes internationally by providing results on the effect of the contracting perspective.

Secondly, the Nordic corporate governance model is known to be very strong (Lekvall 2018) and thus results contribute to the discussion about whether accounting conservatism is a substitute or complement. Thirdly, to the authors knowledge, the critical mass theory is tied to the literature strand for the first time conceptually.

1.4 Outline

This thesis will have the following structure. Chapter 2-4 will present relevant theories for the thesis (2 Agency Theory, 3 Corporate Governance, 4 Accounting Conservatism). Chapter 5 gives a literature review of the literature strand that will be followed by chapter 6 hypothesis development. Next is chapter 7 that consist of the research design. Followed by chapter 8 methodology and chapter 9 results. The last part of the thesis, chapter 10, will provide a conclusion of the thesis.

2 AGENCY THEORY

Accounting conservatism is a property of an accounting decisions made by a manager. At the same time, it is also said to facilitate corporate governance in a company through ratifying and monitoring of the manager (Watts 2003; Goergen 2012). The reason for accounting conservatism to exist through these two different avenues stems from the agency problem. Therefore, the theory of this thesis will start with the agency theory. Presenting both the classical agency problem as well as the agency problem between debt and equity. (Ahmed and Duellman 2007;2010)

2.1 Agency problem

Adam Smith (1776) as well as Bearle and Means (1932) introduced the problem with big businesses where ownership becomes separated from control resulting in costs for the owner. Building on that, Jensen and Meckling introduced the agency theory in 1976. It explains the relationship between the principal (e.g. shareholder) and the agent (e.g. manager). In this relationship, the principal has the residual claim of the firms profit and the agent is hired to perform tasks on behalf of the principal. The problem in the relationship is the lack of observability that creates information asymmetry. (Jensen and Meckling 1976)

As a result, the principal is not fully informed about the agent's performance and thus the agent has an information advantage over the principal. This is called *adverse selection* and is one of the two types of information asymmetry. Also problematic is the fact that the managers incentives might deviate from the shareholders. This creates a situation where *moral hazard* can exist which represents the second type of information asymmetry. Moral hazard means that the agent takes actions to his/her advantage that are not in the best interest of the principal. This results in *agency costs* which are defined as the loss of the principal's wealth due to decisions made by the agent. (Jensen and Meckling 1976; Scott 2015)

A private corporation can be explained as a nexus for several contracting relationships (Jensen and Meckling 1976). Contracts between all these parties could theoretically be drawn up to ensure that the managers incentives are aligned with the providers of the capital. That way, in theory, the agency problem and costs could be mitigated with perfect contracts. (Shleifer and Vishny 1997; Jensen and Meckling 1976). However, as stated by Fama and Jensen (1983) contracts are costly to write, costly to enforce and time-consuming. As a result, no contract (beyond theory) can fully mitigate the agency

problem and ensure that all actions by the agent would be aligned with the principal. Hence, perfect contracts do not exist. Therefore, corporate governance mechanisms exist to mitigate what the imperfect contracts cannot. (Shleifer and Vishny 1997; Jensen and Meckling 1976)

2.2 Agency problem of debt and equity

Even if the agency problem usually refers to the relationship between the shareholder and the manager it can be extended to all providers of capital. As a result, the agency problem does not only exist between the manager and the shareholder. The second type of agency problem exists between debt and equity. Jensen and Meckling (1976) proposes an optimal mix of debt and equity. This optimal level would minimize the agency costs and therefore also maximize firm value.

Important to note is that in this relationship, the claims of the debtholders are more senior than those of the shareholders. This is because the value of debt holders claims has a limited upside. This upside is reached when the funds are sufficient for (a) pay back and (b) interest rate for the debt. In contrast, the claims of the shareholder have an unlimited upside. The reason is that there is no theoretical limit on a return on investment. This difference creates a possibility for shareholders to gamble with debtholders money by investing it in high-risk projects.

The model becomes of interest especially in corporate governance settings where debtholders are important providers of capital since it will affect the prioritisation of corporate governance mechanisms. The Nordic corporate governance is a representation of this setting. (Goergen 2012).

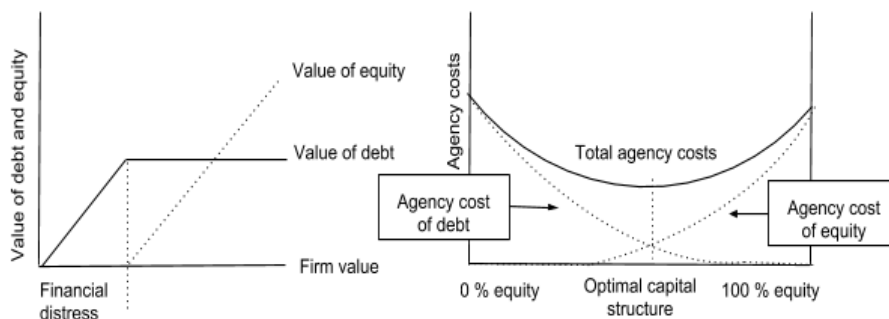


Figure 1 Firm value (Goergen 2012)

Figure 2 Agency cost of debt and equity (Goergen 2012)

3 CORPORATE GOVERNANCE

As presented, the agency problem and the premise of incomplete contracts creates a need for corporate governance. The theory of this thesis continues therefore with corporate governance. There exists a range of different definitions on corporate governance. Goergen (2012) emphasizes that when defining corporate governance, assumptions need to be made about what the *main objective* of the corporation is. Universally, there is no agreement on what the main objective is since different cultures, political and legal system affect that objective. As a result, there exists a range of different definitions on corporate governance.

First, a time-line of the development of the definition will be presented to give an overview of the scope of corporate governance on a general level. Since accounting conservatism has been found to vary in different legislative settings (Garcia, Osma and Penalva 2009; Chi, Liu and Wang 2009) the focus on this chapter will thereafter be mostly on Nordic Corporate Governance. The use of the Nordic model is justified since Finland is included in the joint Nordic Corporate Governance Model (Lekvall 2018).

3.1 Defining corporate governance

Based on a more general objective for corporations, Cadbury Committee (1992) defined corporate governance as the system that directs and controls companies.

Alternately to Cadbury (2012), Garvey & Swan focuses more specifically on the agency problem and the need to mitigate it with contracts. Since those contracts are imperfect, Garvey and Swan (1994) define corporate governance as:

how the firm's top decision makers (executives) actually administer such contracts (Garvey and Swan, 1994, p.139)

More so focusing on the objective of the corporation, Shleifer and Vishny (1997) presented a widely-held definition. They emphasized the assumption that the corporation's primary objective is to create return to the suppliers of finance meaning shareholders and debtholders.

Corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment. (Shleifer and Vishny, 1997, p. 1).

This view of expanding the objective to providers of finance, i.e. also debtholders, and not only shareholders was first introduced by Williamson (1984). The reasoning is that all providers of finance are residual risk bearers and claimants to the firm's assets. La

Porta, Lopes-De-Silanes and Shleifer (2000) build on this and explain corporate governance mechanisms as such that they protect the outside investors (both shareholders and debtholders) from inside directors (managers). (Shleifer and Vishny 1997; Georger 2012)

Also, focusing on the distribution of right and responsibilities but expanding the inclusion of all participants in the organisation, the Organization for Economic Corporation and Development (OECD 2004) stated:

Procedures and processes according to which an organisation is directed and controlled. The corporate governance structure specifies the distribution of rights and responsibilities among the different participants in the organisation – such as the board, managers, shareholders and other stakeholders – and lays down the rules and procedures for decision-making.

Later, more recent authors, such as Sarah Worthington (2001) also incorporated other stakeholders than providers of finance and argued that nothing justifies the focus on shareholder value and that the objective should be expanded to include all stakeholders.

Depending on the problems caused by agency problem and incomplete contracts, different mechanisms arise to mitigate and ensure that the company is run in the best way. Thomson and Conyon (2012) presents a classification of corporate governance mechanisms; Informal (social norms, reputation and trust), regulation, ownership (large owners, shareholder activism, takeovers), boards (e.g. accounting conservatism), incentive systems and shareholder pressure (debtholder monitoring, auditors, analysts, competition).

Corporate governance mechanisms have been proven to have a significant positive economic effect on different aspects of a company's performance; operating performance, corporate failure, cost of capital, cost of debt financing and credit rating, informativeness of earnings, dividends, pay-for-performance, earnings quality, firm value and accounting conservatism (Bhagat and Black 2002; Parker et al 2002; Anderson, Mansi and Reeb 2003; Bhojraj & Sengupta 2003; Francis et al 2005a; Francis et al 2005b; Werner, Tosi, Gomez-Mejia 2005; Wang 2006, Coles, Daniel and Naveen 2008; Chi, Liu, Wang 2009) .

In summary, corporate governance mechanism arises to mitigate the agency problem through direction and control. The mechanisms differ in costs and benefits. An optimal combination of these mechanisms is chosen so that it maximizes the objectives chosen for the company by different parties involved. (Ahmed and Duellman 2007).

3.2 Nordic Corporate Governance

Lekvall (2014) defines a corporate governance model as following:

By **corporate governance** we mean the framework through which a company is governed in order to ensure that the company is run in the best interest of its owners. (Lekvall, 2014; p.15).

A **corporate governance model** is how this framework is set up for a certain type of company, e.g. a listed company, or a geographical region (Lekvall, 2014; p.15).

He presents a Nordic Corporate Governance framework that consists of three different norm systems: (a) statutory regulation (law, rules), (b) self-regulation and (c) informal norms and practises. Lekvall (2014) acknowledges that there are differences between the countries in the Nordic region but in general the countries follow the same principles. (Lekvall 2014)

The following section will precede as following. Firstly, an explanation to why there exist different governance settings based on the legal family theory by LaPorta et al. (1997). Secondly, the key characteristics of the Nordic Corporate Governance model by Lekvall (2014) will be introduced. This is justified as the Nordic countries are proven to resemble in their corporate governance settings to the extent that it can be described as a joint Nordic corporate governance model (Lekvall 2018). Lastly, an overview of the scope of diversity induced in the Nordic Corporate Governance codes will be given to verify to the similarities also in this area and thus justify the scope of theory.

3.2.1 *Legal families*

One characteristic of the Nordic corporate governance systems is that it is more bank-based than market-based. Bank-based means that companies rely more on bank loans as a type of financing than the effect of an active capital market. (Hyytinen & Pajarinen 2001; Goergen 2012)

LaPorta et al. developed (1997) a theory explaining differences in corporate governance and the development of stock markets - the Legal Families' Theory. It is based on investor protection. The higher the investor protection the more the capital market invests in companies resulting in larger markets. If the protection is weak, the participants of the capital market will not be as willing to invest their funds, thus forcing companies to get financing from banks.

Investor protection is presented to be connected to the type of law. In common law countries where the law is case based and therefore more flexible (US and UK) the

investor protection is higher. Conversely, in countries with law based on codes, i.e. civil law, the law-making is less flexible and therefore less protective of investors. The Nordic countries are based on civil law and consequently have according to the theory; lower investor protection, smaller capital markets, and more bank financing. However, in the results presented by LaPorta et al. (1997) Nordic countries are more in the middle of the scale in investor protection and creditor protection indexes. This can be explained by the Nordic corporate governance model being more effective than a typical civil law country model, such as France. Which support the fact that Nordic countries are not pure civil law countries but more so represents their own model, the Scandinavian civil law. (LaPorta et al 1997; Goergen 2012; Lekvall 2018)

3.2.2 The Nordic model

The reason for the effectiveness of the corporate governance in the Nordic countries can be explained with the help of the key characteristics of the Nordics Corporate Governance model by Lekvall (2014). These key characteristics can be divided into four major components.

Firstly, the *possibility for shareholders to act as real owners*. This is achieved by the shareholders' strong general meeting powers, a clear separation between board integrity and managers and engaged owners. Secondly, distinctive for the Nordic setting is the rate of concentrated ownership in companies. This results in an increased risk of minority shareholder expropriation. To mitigate this, a set of rules have been set in place in the Nordic model to ensure *effective minority shareholder protection*. Thirdly, the Nordic model has a high degree of *self-regulation*. All countries codes are based on the comply-or-explain principle, encouraging implementations of other solutions than prescribed but calls for transparency in those implementations. Lastly, the Nordics represent a well-functioning system of *code enforcement*. The three "major players" are; The administrators/law-makers (national corporate governance committee), the supervisors (stock exchanges) and the ultimate judges (market participants such as investors). (Lekvall 2014; Lekvall 2018)

The stock exchanges supervise the listed companies' application of the corporate governance codes (Lekvall 2014; Lekvall 2018). The different stock exchanges must act if there is a significant deviation from conduct. However, the judge of the level of corporate governance behaviour is in the hands of market participants (shareholders, advisors, other actors, investors).

3.2.3 Gender diversity

Each country has an own corporate governance code. The codes in the Nordic countries have the following things in common; they are tools for on-going improvement of corporate governance practises, they set higher standards than the minimum levels required by law and the standards are to be strived for but not mandatory. They codes have the nature of comply or explain and resemble each other closely regarding substance (Lekvall 2014; Lekvall 2018). The only corporate governance mechanism that is mentioned in the codes, that is of relevance to this thesis, is the board.

A board is described as an apex of the decision control system of an organisation where the board ratifies and monitors top managers (Fama and Jensen 1983). Lekvall (2014) categorises the board's duties in three more broad categories: 1) Manage the company in interest of shareholders including deciding on goals and strategies 2) To appoint, supervise and assess executives 3) inform shareholders, capital markets and society about the performance of the company.

As presented in table 1, there is no legal requirement regarding the composition of the boards in Finland, Sweden or Denmark. Contrary, in Norway at least 40 % of the board needs to be represented by each gender conducted by the Gender Equality Act. The other countries have comply-or-explain Corporate Governance Codes in place with varying degrees of what is recommended and varying degrees of consequences of "explain". Further, both Finland and Denmark have explicitly made a difference between state-owned and other companies, having more direct recommendations for state-owned companies. Sweden does not distinguish between state-owned and other companies. Regarding consequences of explaining, Sweden has the least explicit, Denmark the harshest with a possible fine and Finland in between. Therefore, Finland is an appropriate choice of country to represent the joint Nordic corporate governance model.

The Finnish corporate governance code was ratified in 2015 and implemented 1.1.2016. The biggest changes compared to the prior version were. 1) The increased transparency in the board members selection process and preparation of that process. 2) The evaluation of the independence of board members. 3) Related party transaction reporting. 4) Guidance on mandatory reporting requirements. The main aim with the improved code was to increase openness, transparency, comparability and the development of continues good governance. As a result, e.g., audit committees and the

requirement to have both genders represented in the board were new for the 2015 Code. (Finnish Corporate Governance Code 2015)

Hence, all countries encourage gender diversity in boards by listed companies and Norway requires it. The theory on critical mass was first introduced by Kanter (1977) which forms the foundation for when and why diversity has an effect in a group setting, i.e. the board. The theory is based on research conducted on women that work in a male dominant company. Kanter (1977) identifies different group compositions based on the distribution of characteristics of the members in the group. Based on these it is proposed in which group compositions women will have an effect and in what way.

Table 1 Summary of diversity in the Nordic Corporate Governance

	Quota	Requirements		Consequences
		Companies	State-owned	
Finland	No	Recommends both <i>genders</i> to be represented on the board	Companies required to have <i>equal proportion</i> of men and women.	A public statement needs to be published if requirements are not fulfilled.
Sweden	No	Recommends that companies strive for <i>gender</i> balance on the board	-	Comply-or-explain
Denmark	No	States that a policy on <i>diversity</i> needs to be prepared, adopted and published. (Both private and public)	Should as far as possible have an equal <i>gender</i> balance.	The company is fined if no targets and /or reports are published.
Norway	Yes, 40%	-	-	-

Sources: Finnish Corporate Governance Code (2015), Swedish Corporate Governance Code (2016), Recommendations by the Danish Corporate Governance Committee (2017), The Norwegian Gender Diversity Act (2017).

The most problematic composition according to the critical mass theory is the skewed group. A skewed group represents a setting where one dominant type (e.g. men) controls the minority (e.g. women). Thus, the majority has control of the group which leaves little room for the minorities' or an individual's characteristics influencing the actual decision making in a group, e.g. in a board setting.

Kanter (1997) suggested that the "magic number" for women to have a performance *enhancing* effect on the firm is between 20-40%. Joecks, Pull and Vetter (2013) found based on a German setting that the relationship between gender and a firm's performance follows a U-shape. (1) When women represent under 10% in a group, it might even decrease firm performance. (2) When women represent 10%, it has an enhancing effect on the firm's performance. (3) The "magic number" is 30%, or an absolute number of three women or more. These companies are found to perform better than companies with all male boards. It is however, important to note that the

performance measure used is ROE. ROE is known to decrease when accounting conservatism is used (Beaver and Ryan 2002).

To summarise, corporate governance mechanisms arise to mitigate the agency problem. Firstly, Finland is argued to be part of the joint Nordic Corporate Governance Model that is based on Scandinavian civil law (Lekvall 2018). Distinctive for the Nordic Corporate Governance Model is that it is bank-based with usually a high concentration of ownership but a strong minority protection. Secondly, Nordic corporate governance codes have a comply-or-explain nature with a well-functioning enforcement system. Thirdly, Finland implemented a new code 1.1.2016 that was planned to enhance increase openness, transparency, comparability and the development of continues good governance with recommendations for gender equality in boards and the implementation of committees such as the Audit committee. Lastly, the theory of critical mass provides evidence that *in a group setting*, individuals have an effect but that the “magical number” for the minority group is 30% or an absolute number of 3.

4 ACCOUNTING CONSERVATISM

For interested parties to be able to effectively evaluate a company, verifiable information is needed. Accounting and financial reporting systems represent critical sources for this. Conservatism is a characteristic of accounting. Thus, accounting conservatism will have an effect on the financial reporting numbers. (Watts and Zimmerman 1986; Bushman and Smith 2001; Ahmed and Duellman 2007).

The literature on accounting conservatism is broad and complex firstly because of its scope. Secondly, because of differences in both definitions and measures used as well as inconsistencies in implementation (Wang, Hogartaigh and Zijl 2008). The following and last theory chapter will therefore have the following structure; (1) an overview on the definitions used in the literature, (2) a review of the different perspectives on accounting conservatism to give insight to the complexity of the construct and frame, (3) a separation between unconditional and conditional conservatism, (4) a review of the most common measured used in the literature and (5) a summary. This is to give a clear picture going forward in the thesis to the literature review, where the focus will be on the determinant side of the literature strand.

4.1 Definition

Accounting conservatism has been an observed characteristic of financial accounting ever since the beginning of the 20th century when Bliss defined it in 1924 as:

Anticipate no profits but anticipate all losses.

The definition by Watts and Zimmerman (1986) touches on the differences in values in assets/liabilities but more importantly they introduce the effect of time in conservatism:

..Revenues should be recognized *later* rather than *sooner* and expenses *sooner* than *later* (Watts & Zimmerman 1986; p.205-206).

Basu (1997) further emphasized the timeliness focus, included the differentiation between good and bad news and produced one of the most referenced papers and models in modern accounting conservatism literature. He developed the asymmetric timeliness measure and defined conservatism as such:

Conservatism is capturing accountant's tendency to require a higher degree of verification for recognizing good news than bad news in financial statements. (Basu, 1997, p. 4)

Conservatism is earnings reflecting "bad news" more quickly than "good news. For instance, unrealized losses are typically recognized earlier than unrealized gains. This asymmetry in recognition leads to systematic differences between bad news and good news periods in the timeliness and persistence of earnings. (Basu, 1997, p. 4)

Scholars have also focused on the differences-in-values-perspective, defining conservatism to result in the book value being persistently less than the market value (Feltham and Ohlson 1995).

Accounting conservatism has ever since Bliss (1924) received a lot of attention both in the academic literature and regulative debates regarding whether it is a part of qualitative financial reporting or not.

The framework for financial reporting in the US, *The Concepts Statement*, is produced by the Financial Accounting Standards Board (FASB). In Europe, *the IFRS framework for financial reporting* is produced by the International Accounting Standards Board (IASB). In both frameworks the qualitative characteristics of financial reporting is divided into fundamental and enhancing and are the same (table 2). However, conservatism is mentioned differently in the definitions of the frameworks through time.

Table 2 Characteristics of financial reporting

	<i>IFRS Conceptual Framework by IASB</i>	<i>SFAC no 8 by FASB</i>
Fundamental qualitative characteristics	Relevance Faithful representation Comparability	Relevance Faithful representation Comparability
Enhancing qualitative characteristics	Verifiability Timeliness Understandability	Verifiability Timeliness Understandability

FASB defined conservatism and thus parallelized prudence with the definition in 1980:

Conservatism is a **prudent** reaction to uncertainty to try to ensure that uncertainties and risks inherent in business situations are adequately considered. Thus, if two estimates of amounts to be received or paid in the future are about equally likely, conservatism dictates using the less optimistic estimate.

However, prudence is *not* included in neither of the two newest frameworks from 2010 and 2000. In the current framework it is further emphasized that prudence is not included since it would be inconsistent with neutrality and therefore also faithful representation (FASB 2000;2010). Furthermore, it is explicitly said that the framework has not been made in mind to encourage/predict any specific actions of users (e.g. investors versus debtholders). Emphasizing, that if it would, that information would not be neutral.

Contrary, in the IFRS framework prudence is included under faithful representation in the 2010 framework in the frameworks' definition. It states that exercises of prudence support neutrality (IASB 2010). Also, prudence is defined as exercising caution when making judgements under uncertain conditions (IASB 2010). That notion still holds in the newest framework developed in 2018 and will be implemented 1.1.2020. However, there it is specified that prudence does not mean overstating liabilities/expenses or understating assets/earnings (IASB 2018). These differences are of interest when comparing US accounting numbers with European and should be therefore taken into consideration when referring to papers made on different data-sets.

To summarise, conservatism occurs through accounting choices. The features of accounting conservatism can be divided into two **non-excluding** main categories:

(1) Requiring more verification for good news (gains) than bad news (losses) resulting in reporting bad news quicker than good news (= *Asymmetric timeliness recognition*).

(2) Biasedly undervaluing assets/earnings and/or overvaluing liabilities/expenses (= *Biased valuation*). (Chi, Liu and Wang 2009; Ruch and Taylor 2015)

4.2 Different perspectives

As the framework modifications by IASB and FASB show, debate about conservatism is still to this day active. The reason for this will now be presented. (1) The valuation versus contracting perspective. (2) The complementary versus substitute perspective.

4.2.1 Valuation versus contracting perspective

The primary users of financial reports can be classified into three categories; (1) equity market users (investors and analysts), (2) debt market users (lenders and borrowers), (3) corporate governance users (shareholders and management). Since, the three groups have different objectives, they will be affected in different ways by a financial statement. Hence, the usage of conservatism is viewed differently by the different groups, resulting in a valuation versus contracting perspective. (Ruch and Taylor 2015; IASB 2018)

The valuation perspective argues that the primary function of accounting is to objectively and neutrally capture the true performance of the company that can be used to assess the market value of equity for investment. In contrary, the contracting perspective argues

that the primary function is to inform contracting parties in a way that enables them to evaluate the efficiency and effectiveness of the other party. (Ruch and Taylor 2015)

The perceived problem with conservatism according to the valuation view is that it leads to inefficient decisions-making because of the biased financial statements (Gigler et al. 2009; Guay and Verrechia 2006). Alternatively, the contracting view states that conservatism is a natural phenomenon in a contractual relationship and necessary to establish efficiency in such a relationship (Basu 1997; Watts 2003). (Ruch and Taylor 2015).

The logic of why conservatism would be preferred in a contractual relationship can be derived from agency and contracting theory. Contracting parties have asymmetric payoffs. An example is a loan agreement between a company and a bank. A strong performance by the company borrowing money from a bank does not increase the payoff to the bank, while a weak performance could decrease the pay off. Therefore, the bank will always prioritise the company reporting bad news (weaker performance) over good news (strong performance as the payoffs are asymmetric. (Ruch and Taylor 2015)

One could assume that if one of the three financial statement users are more dominant in a corporate governance setting, it will affect the degree of conservatism used to match that preference of those users.

4.2.2 Substitute versus complement perspective

Besides the valuation versus contracting perspective there exists a debate about whether conservative accounting is a substitute or complement for corporate governance. The substitute perspective views conservatism as a tool for mitigating uncertainty and information asymmetry. Therefore, it is assumed that weak corporate governance structures will lead to more conservative accounting to mitigate the agency problem in specifically a contracting setting (Watts 2003; Ahmed and Duellman 2007; LaFond and Watts 2008). In line with this assumption more conservatism is observed in younger firms and in firms with lower managerial ownership (Khan and Watts 2007; LaFond and Roychowdry 2008). Less conservatism is observed when institutional ownership is greater (Chi, Liu, Wang 2009).

The complementary perspective does not view conservatism as a result of weak governance but instead a result of governance and better monitoring of the manager. Hence, conservatism will be preferred in that setting. Garcia, Osma and Penalva (2009)

showed that companies with strong governance report "bad" news in a timelier manner through discretionary accruals. This is supported by results showing that there was an increase in conservatism after the implementation of the Sarbanes-Oxley Act (SOX) (Lobo and Zhou 2006). Also, when there is a higher rate of outside directors, more conservatism is used. (Chi, Liu and Wang 2009)

Authors, such as Chi, Liu and Wang (2009) find more support for the substitute perspective but acknowledge that a cross-country analysis should be made as it could change the results. Garcia, Osma and Penalva (2005) first find no difference between code (Continental Europe) vs common (UK & US) law countries in the rate of conservatism used. However, when they look closer at discretionary accruals they find that common law countries have earnings pronounce conservatism and code law countries more balance sheet. Interestingly, while Lobo and Zhou (2006) found that conservatism increases after SOX implementation, André, Filip and Paugoum (2014) find that conservatism decreased after adoption of IFRS. Showing the difference in the two legislatives. (Chi, Liu and Wang 2009)

4.3 Conditional versus unconditional conservatism

Continuing from perspectives to the literature on determinants of accounting conservatism, authors have distinguished between two different types of accounting conservatism, (1) **conditional** (ex post or news dependent) and (2) **unconditional** (ex ante or news independent). (Ball and Brown 1968)

Both conditional and unconditional can be explained with the help of the neutral system where all values equal the true economic value, i.e. are neutral. Conditional conservatism exists when less verification is needed for losses than gains, alternatively if losses are recognised quicker than gains (Mora and Walker 2015).

In a neutral system good news and bad news would require as much verification to be recognised and therefore be recognised as fast. As a result, there would be no difference in the timeliness, i.e. no conditional conservatism would exist. Examples of conditional conservatism are asset impairment and inventory write-downs. Hence, conditional conservatism is connected to earnings. (Mora and Walker 2015)

Unconditional conservatism is also called balance sheet conservatism. In a neutral system the assets on the balance sheet represent the true economic value, i.e. neutral value, of the assets. Unconditional conservatism exists either through not recognising

assets at all that could yield in future benefits or through recognising those assets at a lower value than its neutral value. Expensing research represents an example of the first way and an accelerated depreciation schedule the second. (Mora and Walker 2015)

Ruch and Taylor (2015) identify three main reason why it is important to distinguish between the two. Firstly, they have different effect on the financial statement. Conditional conservatism is transitory on the income statement and unconditional conservatism has a consistent impact on the income statement. Therefore, even though they both result in understated net assets on the balance sheet, unconditional conservatism does not necessarily result in under-stated net income while conditional does. Also, Hansen, Hong and Park (2018) find that unconditional decreases over life cycle stages, while conditional does not. (Ruch and Taylor 2015; Naeg and Masca 2015).

Secondly, the application of one of the types, affect the other. The logic is the following; If a company uses an accelerated depreciation method (unconditional conservatism) the need/possibility for a larger write-down (conditional conservatism) is decreased (Ball and Brown 1968; Qiang 2007; Ruch and Taylor 2015; Naeg and Masca 2015).

Thirdly, they are induced by different conditions. Conditional conservatism is connected to the contracting perspective where especially the importance of the debt market induces conditional conservatism. While unconditional conservatism is said to be driven by taxation, regulation and litigation. Meaning that conditional conservatism is chosen because the corporate governances setting (especially the power of debt market) prefers conditional conservatism while unconditional conservatism more so made as a “forced” choice because of e.g. GAAP/IFRS or local taxation requirements. As a result, unconditional conservatism is higher in countries with less developed stock markets, i.e. in code law countries where banks are main providers of capital and therefore unconditional conservatism is induced more in accounting through regulation and taxation. Whereas conditional conservatism is higher in countries with more developed stock markets, i.e. common law countries where investor protection and litigation risk are higher and therefore consistent news independent undervaluation is not preferred. (Garcia, Osma and Penalva 2009; Mora and Walker 2015; Ball et al. 2002; Giner and Rees 2001; Garcia Lara and Mora 2004; Garcia et al 2005; Ball et al 2008; Ruch and Taylor 2015; Naeg and Masca 2015).

In the conservatism literature, conditional conservatism has been more researched. The biggest reasons presented is that it is because the characteristic of conditional

conservatism is more of interest since it communicates information about uncertain events (Ball and Shivakumar 2005; Ryan 2006). It also found that conditional conservatism is used as an instrument for better corporate governance by strong boards (Garcia, Osma and Penalva 2009). (Naeg and Masca 2015)

In Summary, going back to the two main features of conservatism- asymmetric timeliness of bad versus good and undervaluation of net assets, conditional conservatism refers to the prior feature and unconditional to the former.

4.4 Measures:

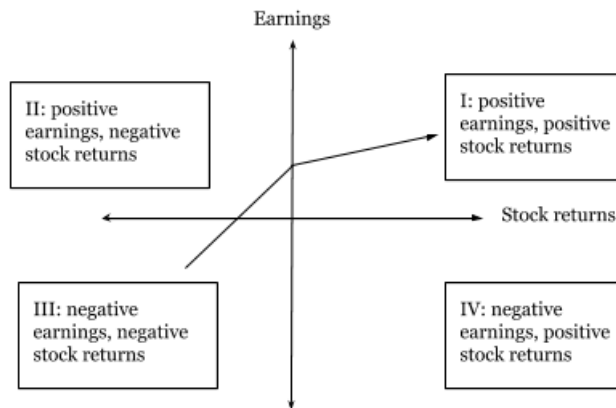
Measures applied in the accounting conservatism literature varies a lot. This creates a lack of consistency in the literature (Wang, Hogartaigh and Zijl 2008). The most common measures, a total of five, will be presented next: (1) Asymmetric timeliness, (2) Asymmetric-accruals-to-cashflow, (3) Book-to-market, (3) Hidden reserves and (4) Negative accruals measure.

4.4.1 *Asymmetric timeliness measure (Basu 1997) (AT)*

The first measure presented is the asymmetric timeliness measure by Basu (1997). The measure is an operationalization of Basu (1997) definition and thus focuses on the separation between bad and good news and their timeliness. The measure is based on the relationship between earnings and unexpected annual stock returns.

Unexpected annual stock returns proxy for good/bad news depending on if the unexpected stock returns are positive/negative. Earnings are assumed to respond quicker to bad news (unexpected negative stock returns) than good (unexpected positive stock returns) news when conservatism occurs. In other words, creating an asymmetry between the timeliness of bad versus good news. The rationale is that the greater the asymmetric timeliness, the greater the degree of conservatism. (Basu 1997)

Figure 3 Hypothesized association between earnings and returns under conservatism (based on Basu, 1997, p.12)



Basu (1997) hypothesis on the association between earnings (EPS_{it}) and stock returns (R_{it}) is described with the help of figure 3. According to the hypothesis bad news (i.e. stock returns) will be recognised immediately and thus reflected in the earnings quicker than good news. This is also reflected in the slope coefficients. Negative returns, as in case II and III in figure 3, has a higher slope coefficient than positive returns as represented by case I. (Basu 1997)

Basu (1997) notes that there might be some current unrealized gains in his sample that will be recognised in the future. However, news is per definition uncorrelated through time. Therefore, these possible unrealized gains are uncorrelated with the current recognition periods news and returns. Hence, when these unrealized gains are recognised, they will result in a positive intercept. (Basu 1997)

The regression is the following:

$$\frac{EPS_{it}}{P_{it}} = \alpha_0 + \alpha_1 + \alpha_1 DR_{it} + \beta_0 R_{it} + \beta_1 R_{it} DR_{it} + \varepsilon_{it}$$

Where, EPS_{it} earnings are compared to P_{it} which stands for opening stock market price for firm i year t . DR_{it} is the dummy variable (proxy) for the good and bad news. It is equal to one if the stock market return for a given firm in a given year is negative i.e. bad news. It is equal to 0 if the stock market return for a given firm in a given year is non-negative, i.e. good news. (Basu 1997)

In more technical terms. Under good news ($R_{it} \geq 0$), $DR=0$ and the good-news timeliness coefficient is β_1 . Under bad news ($R_{it} < 0$), $DR = 1$ and the bad-news

timeliness coefficient is $\beta_0 + \beta_1$. Hence, β_1 is the asymmetric timeliness coefficient and is the primary indicator of accounting conservatism. Therefore, the greater the β_1 the higher the degree of conservatism. (Basu 1997)

4.4.2 Asymmetric-accruals-to-cash-flow measure (Ball and Shivakumar 2005). (AACF)

The second measure presented is the asymmetric-accruals-to-cash-flow measure by Ball and Shivakumar (2005). Like the measure by Basu (1997) it represents the asymmetric-timeliness view and definition of accounting conservatism. However, the authors wanted to estimate the degrees of conservatism in private companies. Since the measure by Basu (1997) requires quoted stock prices, it does not fit for private companies. Hence, the AACF is a non-stock-market version of the measure by Basu (1997) and was modified to fit the population (Wang, Hogartaigh and Zijl 2008). (Ball and Shivakumar 2005)

$$AAC_t = \beta_0 + \beta_1 DCF O_t + \beta_2 CFO_t + \beta_3 DCF O_t * CFO_t + \varepsilon_t$$

AAC_t: Accruals measured as Δ inventory + Δ Debtors + Δ other current assets – Δ Creditors – Δ Other current liabilities – Depreciation. *CFO_t*: Cash-flow for period t. *DCF O_t*: Dummy variable that is set to 0 if $CFO_t \geq 0$, and is set to 1 if $CFO_t < 0$.

Ball & Shivakumar (2005) regress “earnings” on a proxy of economic news to distinguish between good and bad news, i.e. the asymmetry of good and bad news, i.e. conservatism. Earnings, *AAC_t*, include only the accrual component of the total earnings. The reasoning by Ball and Shivakumar (2005) is that conservatism mainly has an effect on accruals and not cash flows. The economic news proxy *DCF O_t* and is based on operating cash flows *CFO_t*. (Ball and Shivakumar 2005; Wang, Hogartaigh and Zijl 2008)

4.4.3 Book-to-market ratio

The third measure concluded from the literature is the book-to-market ratio (market-to-book). The ratio itself is widely applied in accounting literature and its logic is derived also to accounting conservatism literature: Ceteris paribus, conservatism due to undervaluation of income/assets and overvaluation of liabilities and expenses, decreases net book value compared to the “true” economic value. Thus, a lower book-to-market ratio (higher market-to-book) indicates more accounting conservatism induced in the financial reporting. It has been especially common in analytical papers based on the Residual Income Valuation Model by e.g. Feltham and Ohlson (1995) (Wang, Hogartaigh and Zijl 2008). Beaver and Ryan (200) decomposed the Book-to-Market ratio into two

components: The bias (α_i) and the lag (α_t). The ratio has ever since been used in accounting conservative literature. (Beaver and Ryan 2000)

$$BTM_{t,i} = \alpha_t + \alpha_i + \sum_{j=0}^6 \beta_j R_{t-j,i} + \varepsilon_{t,i}$$

$BTM_{t,i}$: Book-to-Market ratio of a firm i, at the end of year t

α_t : Year-to-year variation in the book to market common to the sample firms.

α_i : Bias component of BTM for firm i.

$R_{t-j,i}$: Return on Equity (ROE) over each of the 6 preceding years

β_j : Regression coefficients on $R_{t-j,i}$. Regression coefficients of the lag components of the BTM ratio.

Beaver and Ryan (2000) regresses Book-to-Market on a series of lagged stock returns over six preceding years. The first component α_t represents the lag. The lag component has the characteristic of being fixed for a specific year but may vary year to year. As a result, the market wide Book-to-market movement is captured. The second component α_i represents the bias component. The bias component has the characteristic of being fixed for each firm. However, it may vary in firm-to-firm comparison. As a result, the bias component captures the firm-specific persistent bias, i.e. captures the rate of accounting conservatism. (Beaver and Ryan 2000)

4.4.4 Hidden reserves measure (Penman and Zhang 2002). (HR)

Penman and Zhang (2002) base their measure on the idea that accounting conservatism creates *hidden reserves*. The rationale is that the higher the degree of hidden reserves, the higher the degree of accounting conservatism. However, hidden reserves are not reported by companies. As a result, they need to be estimated by researchers based on information provided by the companies in their financial statements. Thus, this measure represents the definition of accounting conservatism based on the idea of deferral of economic gains recognition/acceleration of losses. Penman and Zhang (2002) estimate hidden reserves, ER_{it} , as a function of the inventory reserve, R&D reserve and advertising reserves represented by brand asset.

$$ER_{it} = INV_{it}^{res} + RD_{it}^{res} + ADV_{it}^{res}$$

INV_{it}^{res} : The value under US GAAP of the LIFO reserve reported in the footnotes. RD_{it}^{res} : The R&D reserve calculated as the estimated amortized R&D asset that would have been capitalized had accounting standards permitted such capitalizations. ADV_{it}^{res} : Brand asset. Estimated brand asset derived by first capitalizing all advertising expenses and then amortizing them.

After estimating hidden reserves, Penman and Zhang (2002) compare them to net operating assets which results in an index, the C Score. The higher the amount of hidden reserves compared to net operating assets, the higher the C Score, i.e. rate of accounting conservatism.

$$C_{it} = \frac{ER_{it}}{NOA_{it}}$$

ER_{it} : Estimated hidden reserves created by accounting conservatism. i indicate firms and t denotes balance sheet dates NOA_{it} : Net operating assets, the book value of operating assets minus operating liabilities, excluding financial assets and liabilities.

4.4.5 Negative accruals measure (Givoly and Hayn 2000) (NA)

The fifth and last measure presented is the negative accrual-measure, by Givoly and Hayn (2000). The rationale behind accruals being a measure for accounting conservatism is the following. When using accounting conservatism, one delays gains and accelerates losses. This results in accruals becoming more and more negative. Givoly and Hayn (2000) base their measure on the difference between operating and non-operating accruals. Where nonoperating accruals is defined as Total Accruals (before depreciation) minus operating accruals.

Operating Accruals = Δ Accounts Receivable + Δ Inventories + Δ Prepaid Expenses – Δ Accounts Payable – Δ Taxes Payable

Nonoperating Accruals = Total Accruals (before depreciation) – Operating accruals

Operating accruals hence represent balance sheet items that represent normal operations. The nonoperating accruals therefore represent the accounting choices made outside of that, i.e. the rate of accounting conservatism. (Givoly and Hayn 2002)

Their sample from the time period 1965-1988 shows that (a) the nonoperating accruals decreases, (b) the operating accruals increase, and that (c) the decrease in nonoperating was bigger than the increase in operating. Thus, the net effect of nonoperating was bigger and as a result the total accruals decreased, i.e. according to Givoly and Hayn (2002) representing more conservatism.

4.4.6 Discussion of measures

Next a discussion on the measures will be presented, based on the review made by Wang, Hogartaigh and Zijl (2009). These five measures are most widely applied and therefore also indicate a significant impact in the accounting conservatism literature. They can be

divided into the following two categories according to Wang, Hogartaigh and Zijl (2009). See table 3.

The measures based on asymmetric timeliness and earnings (AT and AACF) have more so been connected to conditional conservatism because of its news dependent character. Basu (1997) can be considered to first have operationalised the logic behind the measures. Contrary, the measures based on the use of balance sheet items (BTM, NA, HR) have been connected to unconditional conservatism due to its news independent character and more so persistent bias net downward valuation. Feltham and Ohlson (1995) is considered to first have operationalised the logic behind the measure. (Wang, Hogartaigh and Zijl 2009)

Table 3 Wang, Hogartaigh and Zijl (2009)

	<i>Basu's (1997)</i>	<i>Feltham and Ohlson (1995)</i>
Characteristics	Conditional, news dependent, earnings conservative	Unconditional, news-independent, balance-sheet conservative
Measures	AT, AACF	MBT/BTM, NA, HR

The **asymmetric timeliness** measure by Basu (1997) has been applied the most, especially in papers focusing on the contracting hypothesis of conservatism, the impact of corporate governance on conservatism and in international studies. The measure being so widely applied, compatible to large samples as well as cross-sectional analysis represents the measures strengths. The measure by Basu (1997) remained a long time unchallenged. However, later is has been criticised for; problems with time-series designs, simultaneity problems between earnings and stock returns, the warping effect of economic rents and market mispricing and it not providing a firm-specific measure. Still it is often used as a robustness analysis. (Givoly et all 2007; Roychowdry and Watts 2007; Beatty 2007; Wang, Hogartaigh and Zijl 2009; Beaver, Landsman and Owens 2012).

The **asymmetric-accruals-to-cash-flow measure** by Ball and Shivakumar (2005) is similar to the measure by Basu (1997) the following ways. They both represent the asymmetric-timeliness view, they have a similar structure and they both regress earnings on a proxy for economic news to distinguish between good and bad news. There are two major differences between the measures, besides the initial idea of fit to data (public versus private companies). Firstly, they differ in how economic news is measured. Basu

(1997), uses a proxy based on the stock market return while Ball and Shivakumar (2005) uses one based on operating cash flows. Secondly, they classify earnings differently. Basu (1997) uses total earnings and Ball and Shivakumar (2005) only the accrual component of the total earnings. (Wang, Hogartaigh and Zijl 2008)

Compared to the asymmetric timeliness measure by Basu (1997), the asymmetric-accruals-to-cash-flows measure by Ball and Shivakumar (2005) has ever since been referenced and used highly. Besides being the main model, it has been a common tool for robustness analysis in papers using the Basu (1997) measure. The biggest strength of the measure is that the simultaneity problem of earnings and stock returns reported in the Basu (1997) measure, is not a problem in the same way between accruals and cash flows. (Wang, Hogartaigh and Zijl 2008)

The book-to-market-measure by Beaver and Ryan (2002) has been popular. A conclusion drawn by Wang, Hogartaigh & Zijl (2008) is that it is generally used in papers that estimate specifically the degree of unconditional conservatism. E.g. Lara and Mora (2004) find that continental European countries have higher degrees of unconditional conservatism than in the UK. Advantages of the measure is that it is firm-specific compared to the two measures. Further, the measure is based on the Feltham and Ohlson's (1995) analytical model which is one of the most widely adopted valuation models in accounting, increasing its credibility. The biggest weakness of the measure is in a situation where the possibilities for economic rents exists. In these cases, the book value does not capture the economic rents. Therefore, the economic rents increase the difference between book value and market value, regardless of the rate of accounting conservatism. As a result, the book-to-market ratio might falsely estimate the degree of accounting conservatism upwards in these situations. (Wang, Hogartaigh and Zijl 2008)

The hidden reserves measure by Penmang and Zhang (2002) has three major disadvantages. Firstly, the estimations require a lot of manual handling and can be vary tedious. Therefore, the measure might be limited to only small sample sizes. Secondly, it is not necessarily a requirement to disclose R&D and advertising and is thus not applicable to all regulatory environments. Thirdly, it has been found that hidden reserves are affected by the investment growth rate of a firm (if growth rate positive, positive bias, vice versa). (Wang, Hogartaigh and Zijl 2008)

The negative accruals measure by Givoly and Hayn (2000) is also able to measure conservatism on a firm-specific level, which represents a strength. It is also possible to

use for samples with non-listed firms. The weakness is that a base year needs to be established. This can be difficult to do across firms when calculating the accumulated accruals. Also, depreciations are not included in the measure. However, no further research has been conducted on if and in what way it may have a significant effect. (Wang, Hogartaigh and Zijl 2008)

Wang, Hogartaigh and Zijl (2009) made the recommendation in future research to use several measures as well as control for confounding factors in the empirical designs.

4.5 Summary

Conservatism occurs through accounting choices. It can take the non-excluding forms, both through asymmetric timeliness recognition as well as bias valuation. Further, there exists a distinction between conditional (news dependent) and unconditional (news independent) in the literature. Moreover, conservatism affects different users in different ways resulting in differences in preference for conservatism depending on the setting of the company (valuation versus contracting). Also, conservatism can be seen either as a complementary or substitute for corporate governance. As a result, several different measures have been applied in the literature, resulting in five mostly applied measures. The table 3 can be extended to summarise the whole theory chapter and duality of conservatism resulting in table 4 which this thesis research design (chapter 7) will be based on.

Table 4 Summary of the duality of the accounting conservatism ¹

<i>Operationalization of conservatism</i>	<i>Basu (1997)</i>	<i>Feltham and Ohlson (1995)</i>
Asymmetric timel. vs bias valuation	Asymmetric timeliness	Bias valuation
Conditional vs Unconditional	Conditional	Unconditional
News-dependent vs independent	News dependent	News independent
Earnings vs balance-sheet	Earnings	Balance-sheet
Contracting vs valuation	OK from valuation and contracting perspective	OK for only contracting perspective
Measures	AT, AACF	MBT/BTM, NA, HR
Law	Common	Code/Civil
Countries	UK, US	Continental Europe (Nordic)

¹ based on Wang, Hogartaigh and Zijl (2009) and chapter 4

5 LITERATURE REVIEW

Accounting conservatism is a characteristic in accounting decisions. It can be induced by either the board or the manager. And that decision can either be made consciously or not. In other words, there needs to either exist an opportunity in the form of information asymmetry or a premise for it to be preferred which is risk aversion. Both an increase in risk as well as information asymmetry has been proven to be a determinant for accounting conservatism. The severer the information asymmetry is, the greater amount of conservatism is observed (e.g. Ahmed and Billings 2002; LaFond and Watts 2008). Lower (higher) risk taking leads to higher (lower) degree of conservatism (e.g Larmande and Stolowy 2017; Sari, Wirajaya and Supadmi 2017).

Of these two, risk-taking has been found to differ between genders. As the purpose of this thesis is to focus on the genders effect on accounting conservatism the constructs for the thesis will next be derived from the literature strand on risk and accounting conservatism. Firstly, presenting the underlying theory about gender and risk-taking. Secondly, reviewing the strand on gender and accounting decision in general and thus tying risk-taking to accounting decisions. Lastly, connecting gender to accounting conservatism by presenting the two prior papers that have specifically researched the effect of gender on conservatism. This will lead to the hypothesis development in chapter 6.

5.1 Gender and risk-taking

Risk-taking differences between women and men have started from the psychology field on gender differences. The psychology literature on gender differences have been stated not to have a consensus because of inconsistent methodology, bias problems and mixed results (Johnson and Powell 1994; Powell and Ansic 1997). However, interestingly the only thing that is persistent is the results on risk averseness. Women are always found to be more risk averse than men.

Women have been found to be more risk averse in a military setting (Hudgens and Fatkin 1985), in a gambling setting (Levin, Snyder and Chapman 1988), in an investment decision setting (Johnson and Powell 1994) and in an entrepreneur setting (Sexton and Bowman-Upton 1990). Particularly in a situation where money can be lost, the risk averseness is enhanced. Research on financial professionals also supports this. E.g. Olsen and Cox (2001) found that female professional investors are more worried about the downside risk than men. Therefore, they will choose a less risky option for a given

target return. Moreover, female fund managers have also been found to be less risk averse in their investment decisions (Niessen and Ruenzi 2007).

This kind of proof spiked interest in the economic psychology literature and both gained and fuelled debates about gender discrimination in top executive positions (Schubert, Gysler and Brachinger 1999). That increased the popularity of studies in the economic psychology literature on risk averseness as well as other factors parallelized with risk aversion.

The reason for the interest is the economic impact of risk averseness. The general conclusion is that, given two options, women will regardless of the context choose the less risky alternative. E.g. risk averse CEO/CFO might not choose the highest NPV rating project, investment or financing decision that would be the best for the company (Guay 1999; The following effects of women as CFOs and CEOs have been proven; firms grow slower, less likely to make acquisitions (but when made, higher return), less likely to issue debt and more likely to reduce leverage ratio and female bidders in an acquisition situation pay lower premiums (Huang and Kisgen 2013; Levi et al 2008).

5.2 Gender and accounting decisions

In a financial literature context, Powell and Ansic (1997) found that females are less risk-seeking. Particularly when it comes to a) irrespective of familiarity and framing b) costs c) ambiguity. All similar to the characteristics of conservative accounting. They also found that strategies conducted are different between the genders. The supporting proof by other studies is vast (E.g Jianakoplos and Bernasek 2007; Faccio, Marchica and Roberto 2016; Chen, Gramlich and Houser 2017). All supporting the assumption that women are more risk averse in a financial context.

The literature strand has therefore extensively researched in what way that risk averseness takes form in women's accounting decisions. The literature on these decisions can be divided into three main categories: (1) Corporate Tax Avoidance (Aggressiveness) (2) Accounting Quality (3) Earnings management.

In the first category **Corporate Tax**, Dyreng, Hanlon and Maydew (2010) researched if individual top executives have an effect on tax avoidance in a way that cannot be explained by characteristics of the firm. Their sample consists of 908 US firms between 1992 and 2006 with the gender variables CEO and CFO. They find that individuals have an effect, but no significant results for gender. Chen et al (2017) also supports this by

specifically researching diversity differences. They find that diversity on boards is negatively associated with tax avoidance. Further supporting this, Francis, Hasan, Wu and Yan (2014) investigate if specifically, the CFO gender effects tax aggressiveness and find that female CFOs are associated with less tax aggressiveness. Thus, being in line with the assumption that females are more risk averse.

The second category of literature on the effect of gender is **accounting quality**. Barua, Davidson, Rama and Thiruvadi (2010) hypothesize that female CFOs have higher accrual quality. Their sample from 2005 with 1559 firms shows that companies with women as CFOs differ in two ways. Firstly, their performance-matched absolute discretionary accruals are lower. Secondly, the accruals estimation errors are lower. Srinidhi, Gul and Tsui (2011) examines if a higher degree of female participation on the board affect earnings quality. Their sample is from 2001-2007 resulting in a 2480 firm-year observation. The results presented show that companies with a higher degree of female participation (FDir=1 female, FNED=1 nonexecutive female, FNaud=1 female on the audit committee) have a higher earnings quality (discretionary accruals and lower propensity). The two prior studies were conducted on US firms. Ran, Fang, Luo and Chan (2015) move on to examine the impact of supervisor characteristics on accounting information quality in a China setting. The sample consists of 17 968 firm-years from 1999-2012. The results show that female supervisors (and academic background and compensation) are more consistent drivers of better accounting information quality.

The third category is genders effect on **earnings management**. Peni and Vähämaa studied (2010) the association between CEO and CFO gender and earnings management. Their sample from 2003-2007 on US firms results in 1955 firm-year observations. They find results for the relationship between CFO and earnings management. Female CFOs are found to use more income-decreasing discretionary accruals. Supporting this, a study by Liu, Wei and Xie (2016) on China, shows that new female CFOs manage down earnings on their first year compared to prior reported and males up. Also in line with these findings, Gull, Negati, Nekhili and Chtioui (2017) use a sample 2001-2010 of Euronext Paris companies and find negative a relationship between female directors and magnitude of earnings management.

In Summary, this literature strand supports the notion that women use more conservative accounting decisions in the form of less tax aggressiveness, better accounting quality (indicating more verification requirements), and more conservative earnings management strategies.

Besides, the strand on effects of gender and risk averseness, the strand on determinants have developed simultaneously. Women are found to be less assertive, less aggressive and less overconfidence, more anxious, more ethical and more risk averse (Maccoby and Jacklin 1974; Powell and Ansic 1997; Vermeir and Van Kenhove 2008; Ahmed and Duellman 2013). All these qualities suggest a conservative mindset. (Ho, Li, Tam, Zhang 2015).

5.3 Gender and accounting conservatism

Prior to this thesis, there has been only two papers published on the relationship between the two exact same constructs – gender and accounting conservatism. They were both published in 2015 but other than that they vary both in sample, variables and method used.

First, Francis, Hasan, Park and Wu (2015) use the time-frame 1988-2007 on S&P 1500 companies. This population resulted in a sample consisting of 4239 firm-year observations. The hypothesis of the study was that female CFOs are more conservative in their financial reporting than male CFOs. CFO was chosen as the gender variable based on two arguments. (1) CFOs have the most direct impact on accounting decisions. (2) The primary responsibility of financial reporting/accounting lies with the CFO. Francis, Hasan, Park and Wu (2015) use three measures of accounting conservatism; Book-to-Market (BTM) based on Beaver and Ryan (2000), negative accruals measure (NA) by Givoly and Hayn (2000), NA skewness measure by Givoly and Hayn (2000). All measures are presented in this thesis. They focus on the unconditional type of conservatism without further developing why. (Francis, Hasan, Park and Wu 2015)

Their findings show that when a company hires a female after a male CFO there is a significant increase in accounting conservatism for all measures. Results hold after controls for firm characteristics, industry and year effects. They also test for endogeneity problems. The biggest endogeneity problem in this relationship is that female CFOs are not chosen by random but with the intention to induce more conservatism in the accounting. To test this, they use difference-in-difference and propensity-score matching approaches (male to male CFO transition as control group). They also construct a sample of female to male CFO transitions showing that the conservatism decreases when the CFO is changed back to a male CFO. As mentioned in the theory on accounting conservative measure it is common to use the Basu (1997) measure as a robustness analysis. This solution is also implemented in this paper. Hence the authors also check

for conditional conservatism. Besides the primary product of their results, they also find that conservatism is pronounced when there is a higher risk of litigation, default and systematic or management turnover risk. (Francis, Hasan, Park and Wu 2015)

The second research paper is by Ho, Li, Tam and Zhang (2015). Their sample is from 1996-2008 and consists of 13 206 firm years. The measures used are (1) Asymmetric-accruals-to-cash-flow measure (AACF) by Ball and Shivakumar (2005) and (2) a measure by Ball et al (2008). The first measure is presented in this thesis, the second is not. Both the measures by Basu (1997) and Givoly and Hayn (2000) are used as robustness analysis. Findings show a positive relationship between the two constructs. Likewise, the study by Francis, Hasan, Park and Wu (2015) they found that the relationship is stronger in firms with higher litigation and takeover risks.

Ho, Li, Tam and Zhang (2015) focus on conditional conservatism. While the prior paper focused on the relationship between CFO gender and accounting conservatism, this paper focuses on CEO gender. Also different to the prior paper, Wu, Ho, Li, Tam and Zhang (2015) use a theoretical background more so from the ethics literature strand compared to e.g the theoretical background of this thesis and the paper by Francis, Hasan, Park and Wu (2015).

5.4 Summary of the literature review

To summarise, gender was first established to be determinant for risk-taking and women to be more risk averse. This led researchers to investigate in what way risk averseness takes form when women make accounting decisions. Gender variables used in literature are; CFO, CEO, females on the board and the rate of female participation. This led to two prior papers researching the two constructs used in this thesis - (a) gender and (b) accounting conservatism (Figure 4). Table 5 summarises the literature review on the strand.

Figure 4 Construct formulation based on literature strand

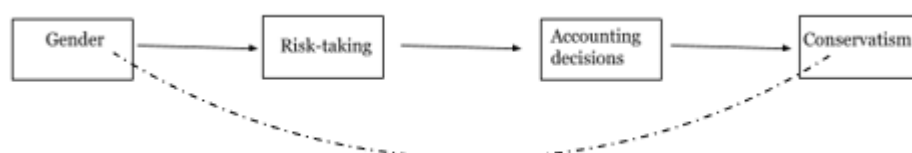


Table 5 Literature review summary (only financial literature, not psychology)

<i>Article</i>	<i>Variable 1</i>	<i>Variable 2</i>	<i>CG variable</i>	<i>Measure</i>	<i>Law</i>	<i>Country</i>	<i>Results</i>	
<i>Ahmed & Billings (2002)</i>	Bondholder shareholder conflict	Conservatism		BTM, NA	Common	US	More bondholder-shareholder divided policy conflicts results in more conservatism	<i>Info asymmetry</i>
<i>LaFond & Watts (2008)</i>	Info asymmetry	Conservatism	Inside vs outside directors	AT	Common	US	The more the info asymmetry, the more the conservatism	
<i>Larmande & Stolowy (2017)</i>	Risk taking	Conservatism	Manager	Own	Common	US	higher risk aversion reduces demand for conservatism since already induced	
<i>Sari et al (2017)</i>	Risk taking	Conservatism		NA	Civil	Indonesia	Corporate risk-taking negative correlation to conservatism	<i>risk</i>
<i>Faccio et al (2016)</i>	Gender	Risk taking	CEO	Other	Both	Europe	Transitions from male to female CEOs are associated with significant reductions in corporate risk-taking.	
<i>Dyreg et al (2010)</i>	Individuals	Tax Avoidance	CEO, CFO, Vice President Board	Other	Common	US	Individuals have an effect on Tax Avoidance, gender not found to be significant	<i>gender & accounting decisions</i>
<i>Chen et al (2017)</i>	Diversity	Tax avoidance		Other	Common	US	Diversity negatively associated with tax avoidance	
<i>Francis et al (2014)</i>	Gender	Tax aggressiveness	CFO	Other	Common	US	female CFOs are less tax aggressive	
<i>Barua et al (2010)</i>	Gender	Accrual Quality	CFO	Other	Common	US	Female CFOs lower performance-matched absolute discretionary accruals and lower accrual estimation errors	
<i>Srinidhi et al (2011)</i>	Gender	Earnings Quality	Female participation on Board	Other	Common	US	More female participation exhibits higher earnings quality	
<i>Ran et al (2015)</i>	Gender	Accounting information quality	Board	NA	Civil	China	Female supervisors are consistent drivers of improved accounting information quality	
<i>Peni & Vähämaa (2010)</i>	Gender	Earnings management	CEO, CFO	AACF	Common	US	Female CFOs use more income-decreasing discretionary accruals = more conservative	
<i>Liu et al (2016)</i>	Gender	Earnings management	CFO	Other	Civil	China	New females manage down earnings in first years on the job	
<i>Gull et al (2017)</i>	Gender	Earnings management	CEO, CFO	Other	Civil	French	Female directors manage earnings less	
<i>Francis et al (2015)</i>	Gender	Conservatism	CFO	BTM, NA	Common	US	Female CFOs more conservative	
<i>Ho et al (2015)</i>	Gender	Conservatism	CEO	AACF	Common	US	Female CEOs more conservative	<i>gender & conservatism</i>

6 HYPOTHESIS DEVELOPMENT

The literature review provided proof that risk aversion is a determinant for accounting conservatism. Furthermore, women are found to be more risk averse, both generally and as financial professionals. This risk averseness is reflected in accounting decisions and thus affects a company's financial reporting. The purpose of this thesis is to examine if gender has an explanatory power, i.e. and effect on accounting conservatism in Finnish listed firms. More specifically, if a woman in a high position will have a positive relationship with accounting conservatism, i.e. be a determinant. The following part will develop which gender variables are chosen to reflect a woman in a high position and as such represent the main hypotheses of the thesis.

The literature distinguishes between unconditional and conditional conservatism. As covered in chapter 4.3 conditional conservatism is induced because of the power of debt market and corporate governance effects. Unconditional on the other hand is driven by taxation, regulation and litigation and is thus not anticipated to be affected in the same rate by gender. However, unconditional conservatism has been found to be more pronounced in civil law countries (Garcia, Osma and Penalva 2005). Based on these uncertainties, the main hypotheses are divided into sub hypothesis to distinguish between conditional and unconditional conservatism. (Garcia, Osma and Penalva 2009; Mora and Walker 2015; Ball et al. 2002; Giner and Rees 2001; Garcia Lara and Mora 2004; Garcia et al 2005; Ball et al 2008; Ruch and Taylor 2015; Naeg and Masca 2015)

As described in chapter 5 two prior papers have researched the relationship between the two same constructs as this thesis. Ho et al. (2015) used women as CEO as their gender variable, while Francis et al. (2015) used women as CFO. The CEO has especially in the Nordic model a far-reaching authority to manage the business of a company according to Lekvall (2014). The tasks of the CEO are so comprehensive and crucial to the success of the company that the CEO can be considered to have a substantial impact on accounting decisions made by the company. Ho, Li, Tam and Zhang (2015) found in their study on US companies that female CEOs has a positive correlation with accounting conservatism. The expectation is that the same effect will hold for a Finnish setting and thus the first hypothesis is the following:

H1a: There is a positive relationship between women as CEO's and conditional accounting conservatism

H1b: There is a positive relationship between women as CEO's and unconditional conservatism

Francis et al. (2015) reason in their study that the CFO has the most direct impact on accounting decisions and holds the primary responsibility of financial reporting/accounting. Hence, also CFOs are included as a gender variable in this thesis to test the relationship in a Finnish setting.

H2a: There is a positive relationship between women as CFO's and conditional accounting conservatism

H2b: There is a positive relationship between women as CFO's and unconditional conservatism

The board has been described as the centre of the decision control system of an organisation (Fama and Jensen 1983). Through that control the board monitors the top managers that lead to various rates of corporate governance mechanism. Prior literature show results that weak corporate governance structures will lead to more conservative accounting to mitigate the agency problem (Watts 2003; Ahmed and Duellman 2007; LaFond and Watts 2008). The boards in the Nordic model and in Finland are considered very strong and thus the expected relationship between board and conservatism is negative (Lekvall 2018; The Finnish CG Code 2015). Therefore, regardless of the genders effect the both H3a and H3b are formed to have a negative relationship.

H3a: There is a negative relationship between the rate of women on boards and conditional accounting conservatism

H3b: There is a negative relationship between the rate of women on boards and unconditional conservatism

However, women on boards have been found to have a positive impact on e.g. tax aggressiveness and earnings quality in a US setting (Srinidhi, Gul and Tsui 2011; Francis et al. 2014). This thesis has earlier in the theory chapters tied the critical mass theory to conservatism. The aim is put that relationship to the test. The expectation is that the more women on boards the less the negative relationship will be, especially in boards where the magic-rule is fulfilled (in board with three women or more). Thus, the last hypothesis is formed:

H3c: The more the women on boards, the less negative the relationship

To summarize, the three gender variables of this thesis are women as CFO, women as CEO and women as percentage of the board. CFOs and CEOs are expected to have a positive relationship with accounting conservatism. While the rate of women on boards is expected to have negative relationship. However, the more the women the less negative

the relationship is expected to be. Conditional and unconditional accounting conservatism are tested for separately.

7 RESEARCH DESIGN

The following chapter will present this thesis research design. First, describing the sample selection process. Secondly, by presenting the variables used and finally presenting descriptive statistics.

7.1 Sample selection

Finland's primary stock exchange is owned and operated by Nasdaq Nordic Ltd. Finland and has a main regulated market and a minor secondary regulated market. However, because of the secondary markets low rate of significance (both in relative number of companies and market capitalisation value Lekvall 2014) only the main market companies will be included in this thesis.

A seven-year time frame is chosen, 2010-2017. The initial population represents all Finnish companies that have been listed during this time-frame resulting in a total sum of 169 companies is this an unbalanced panel-data. The problem of survival bias is therefore not a problem in this thesis. Following Francis et al. (2015) and Ho et al. (2015), financial, insurance and real estate companies (SIC codes 6000-6999) are excluded from the population of stock listed companies. This represents the initial sample.

Data for gender variables is gathered manually from annual statements. Financial and accounting and data is gathered from Thomson Reuters, Eikon. Further excluded are companies with insufficient accounting/financial data as well as companies that are primarily listed in other countries. This results in a final unbalanced panel-data sample of 127 firms or 786 firm-year-observations. Table 6 summarises the sample process:

Table 6 Summary of sample process

<i>Steps</i>	<i>Sample size</i>
All Finnish publicly listed companies during 2010-2017	169 companies
Excluding financial, insurance and real-estate companies	145 companies
Excluding companies that are not primarily listed on the Finnish stock exchange	133 companies
Gathering gender data manually and financial data from Thomson Reuters Eikon	
Excluding companies with unobtainable financial, accounting or gender data	127 companies, 786 firm-year observations

7.2 Variables

The dependent variable in this thesis is accounting conservatism. The independent variable is represented by three different gender variables. The variables will now be presented more thoroughly.

7.2.1 Accounting conservatism

As stated, measures used in the accounting conservatism literature varies a lot both in choice of measure and implementation. Example for this is found in the two prior papers researching the relationship between gender and conservatism. Francis et al. (2015) chose unconditional conservatism and Ho et al. (2015) chose conditional conservatism as their prioritised measures. Neither, further develop why they decided upon the prioritisation.

As summarized in chapter 4, the strand on accounting conservatism can be divided as in table 8 into two categories. The Nordic corporate governance setting is based on civil law (LaPorta et al 1997; Goergen 2012) and it has been found that unconditional conservatism is higher in these countries (Lara and Mora 2004). However, it has been said that unconditional conservatism more so exists because of legislative and taxation factors (Mora and Walker 2015). Hence, the decision to use more conservative accounting would not be affected by the choice of the manager but more so because of legislative. Since this thesis aims to capture the effect of the gender of the manager(s) and board members, the primary measure for conservatism will represent conditional conservatism. Further, the preference of contracting parties (especially banks) for conditional conservatism is of high significance in the Nordic bank-based model. These factors together support the argument to use measures identified to measure conditional conservatism. These are, as reviewed in this thesis, the asymmetric timeliness measure by Basu (1997) and the asymmetric-accruals-to-cash-flow measure by Ball and Shivakumar (2005).

Table 7 Summary of the duality of the accounting conservatism

<i>Operationalization of conservatism</i>	<i>Basu (1997)</i>	<i>Feltham and Ohlson (1995)</i>
Asymmetric timel. vs bias valuation	Asymmetric timeliness	Bias valuation
Conditional vs Unconditional	Conditional	Unconditional
News-dependent vs independent	News dependent	News independent
Earnings vs balance-sheet	Earnings	Balance-sheet
Contracting vs valuation	OK from valuation and contracting perspective	OK for only contracting perspective
Measures	AT, AACF	MBT/BTM, NA, HR
Law	Common	Code/Civil
Countries	UK, US	Continental Europe (Nordic)

The measure by Ball and Shivakumar (2005) will be applied because of two reasons. Firstly, because severe criticism towards the Basu (1997) measure that according to Mora and Walker (2015) might even require reworking of proof on conditional conservatism. Secondly, because the measure by Ball and Shivakumar (2005) does not experience simultaneity problems between accruals and cash flows compared to reported problems between earnings and stock returns in the Basu (1997) measure (Wang, Hogartaigh and Zijl 2008). Further supporting the implementation of the measure is the fact that Ho et al (2015), that researched CFO gender and accounting conservatism, also used the measure by Ball and Shivakumar (2005).

As described in chapter 4.2.2 the AACF measure is based on the following regression and as such reveal which components that were gathered in the sample selection process to be able to calculate the variables:

$$AAC_t = \beta_0 + \beta_1 DCFO_t + \beta_2 CFO_t + \beta_3 DCFO_t * CFO_t + \varepsilon_t$$

AAC_t : Accruals measured as Δ inventory + Δ Debtors + Δ other current assets – Δ Creditors – Δ Other current liabilities – Depreciation. CFO_t : Cash-flow for period t. $DCFO_t$: Dummy variable that is set to 0 if $CFO_t \geq 0$, and is set to 1 if $CFO_t < 0$.

Further, in accordance with discussion about measures used in the literature by Wang, Hogartaigh and Zijl (2009), unconditional conservatism will be tested for as a robustness analysis. The three possible alternatives for unconditional conservatism has been reviewed in this thesis: book-to-market by Beaver and Ryan (2000), negative accruals measure by Givoly and Hayn (2000) and hidden reserves measure by Penman and Zhang (2002).

As the hidden reserves measure by Penman and Zhang (2002) would require a lot of manual handling, that measure will not be applied to this thesis. Moreover, the book-to-market measure would not provide further insight compared to the measure provided by Givoly and Hayn (2000) since the latter is more sophisticated and less noisy. Hence, the negative accruals measure by Givoly and Hayn (2000) will be applied in this thesis to test for conditional conservatism.

The variable is calculated based on the original measure by Givoly and Hayn (2000) and scaled as Francis et al (2015) and the components are opened up below. The total accruals are scaled with assets and multiplied with -1 to ease and increase the interpretation:

$$\text{Negative accruals} = \left(\frac{\text{total accruals}}{\text{total assets}} \right) * -1$$

Total accruals: Operating + nonoperating. Operating Accruals: $\Delta \text{Accounts Receivable} + \Delta \text{Inventories} + \Delta \text{Prepaid Expenses} - \Delta \text{Accounts Payable} - \Delta \text{Taxes Payable}$
 Nonoperating Accrual: $\text{Total Accruals (before depreciation)} - \text{Operating accruals}$

As a summary, asymmetric-accruals-to-cash-flow measure is used as a variable for accounting conservatism, specifically conditional conservatism. The negative accruals measure is used as a robustness analysis to also test for unconditional conservatism. These actual regression models and the expectations for them will be further described in chapter 8 Methodology.

7.2.2 Gender variables

As reasoned in the hypothesis development in chapter 6, the three gender variables used in this thesis are; (1) Women as CEO, (2) Women as CFO, (3) Rate of women on boards.

The names of the CEO and CFOs are gathered manually from annual reports. Hence, no gender classification is provided as such, but manually coded to dummy variables based on the names given and on pictures in annual reports. As a result, there is a chance that the gender has been coded as woman even though the individual classifies themselves as something else. Also, this thesis does not include non-binary or third genders. However, the effect of the possible misrepresentation is determined to be non-significant. Both the dummy variable woman as CEO (WCEO) and woman as CFO (WCFO) is coded in the same way.

The total amount of board members for each firm-year observation and the number of women of those boards are gathered manually from annual reports. Based on that the percentage of women is calculated for each firm-year. In addition, three dummy variables are included to represent the theory on critical mass and the U-format proposal by Joecks, Pull and Vetter (2013). (1) dummy has the value of 1 if women represent under 10% and 0 if not. (2) dummy has the value of 1 if women represent more than 10% but under 30% and 0 if not. (3) Dummy has the value of 1 if women represent 30% or more and 0 if not.

As advised by Ghauri and Grønhaug (2005), a detailed plan of the coding process is drafted and implemented to enhance the reliability of the collected data. Steps included is that the variables are gathered in their original format. Meaning, that the name of the CEO and CFO is gathered instead of only gathering a F for female and M for male. The gender is simultaneously classified as F or M during the data gathering, but double checked once more after the data gathering process by checking the classification matches the name. Only afterwards dummies of 1 and 0 are created. Same tactic is used for the rate of women on boards. The percentage is not gathered, but instead the total amount of board members and the total amount of female board members.

7.2.3 Control variables

The choice of control variables is based on Francis et al. (2015) and Ho et al. (2015) and further developed based on prior literature to gain a more in-depth understanding of the phenomenon accounting conservatism. Following Francis et al. (2015) and Ho et al. (2015) size, growth, leverage and industry are controlled for.

Leverage becomes of interest as it could be assumed that if leverage ratios are high, debtholders will demand more accounting conservatism since they prefer timelier recognition of losses according to the contracting perspective (Ruch and Taylor 2015). The initial rationale for this comes from the agency theory between debt and equity. As both Francis et al (2015) as well as Ho et al (2015) do, the leverage ratio is calculated by dividing total long-term debt with total assets.

Industry is controlled for by coding the GICS classification into nine dummies (1-9) Garcia, Osma and Penalva (2009) found that both conditional and unconditional conservatism is increased when there is a higher litigation risk. Ho et al. (2015) and Francis et al. (2015) both control out specific industries with higher litigation risk (biotechnology, computer equipment, electronics, retailing, computer services).

However, different legislatures differ significantly from each other. Further, the amount of companies represented in each industry in Finland is smaller than in the US. Therefore, I will not implement a narrow industry control but control all industries separately. As a result, possible relationships between any of the industries and accounting conservatism provides foundation for further discussion.

The control variables are further extended to develop a better understanding of the Finnish setting. Firstly, data on whether a company has an audit committee or not is gathered. A dummy is coded where 1 represents that the company has an audit committee and 0 that the company does not. This way the effect of the audit committee is controlled for as it could either increase or decrease accounting conservatism. On the one hand, an audit committee is motivated to ensure conservatism since high quality earnings are perceived to be parallelised with high quality audit committee work (Suitana 2015). On the other hand, audit committee is a corporate governance mechanism, and as discussed in chapter 4.2.2 stronger corporate governance can also lead to less accounting conservatism (Chi, Liu, Wang 2009). Secondly, while gathering the data for gender variables from the annual statement, the birth-year of both the CEO and the CFO is also gathered. Hence, controlling for the possibility that age affects the rate of accounting conservatism more so than gender (Francis et al. 2015). Lastly, to be able to capture year-fixed effects such as possible extreme legislative or economic changes that affects the rate of accounting conservatism, year-dummies are included as well. The variables are summarized in table 8.

7.2.4 Variables summary

Table 8 Summary of variables

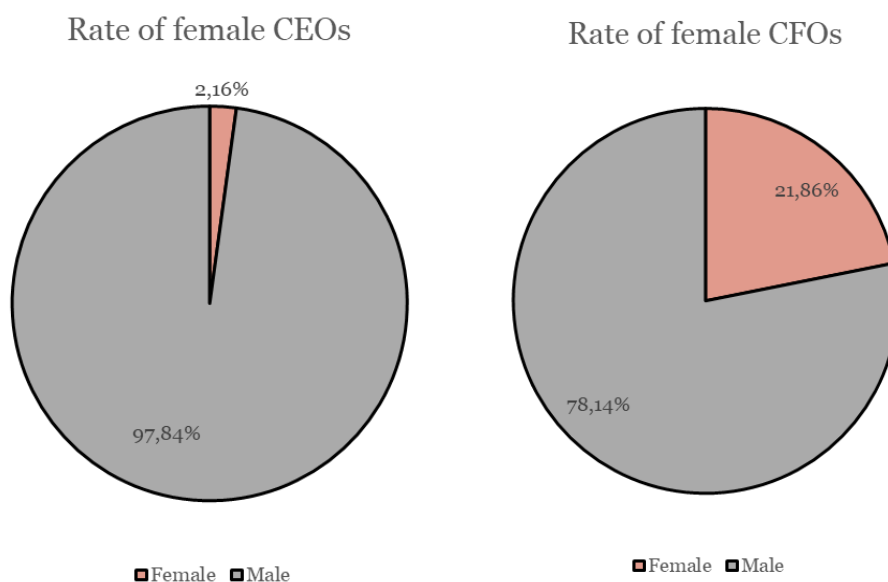
<i>Variable</i>	<i>Definition</i>
AACF	Accruals-to-cash-flow-measure
NA	Negative accruals measure
WCEO	Women as CEO. Dummy with the value of 1 if woman
WCFO	Women as CFO. Dummy with the value of 1 if woman
WBOARD	Rate of women on boards (%)
WBOARD10	Dummy with the value of 1 if under 10% women
WBOARD1030	Dummy with the value of 1 if over 10 % but under 30 % women
WBOARD30	Dummy with the value of 1 if over 30 % women
AUDCOM	Dummy with the value of 1 if the company has an audit committee
CEOAGE	The age of the CEO
CFOAGE	The age of the CFO
SIZE	Natural log of total assets at end of fiscal year
GROWTH	Sales growth as the percentage of annual growth in total sales
LEV	Leverage as the total long-term liabilities divided by total assets
Energy	Dummy with the value of 1 if in the energy industry
Industrials	Dummy with the value of 1 if in the materials industry
Materials	Dummy with the value of 1 if in the industrials industry
Concusmer Disc.	Dummy with the value of 1 if in the consumer discretionary industry
Consumer Stap.	Dummy with the value of 1 if in the consumer staples industry
Health Care	Dummy with the value of 1 if in the health care industry
IT	Dummy with the value of 1 if in the information technology industry
Commun. Servic.	Dummy with the value of 1 if in the communication services industry
Utilities	Dummy with the value of 1 if in the utilities industry
YEAR2010	Dummy with the value of 1 the year 2010
YEAR 2011	Dummy with the value of 1 the year 2011
YEAR 2012	Dummy with the value of 1 the year 2012
YEAR 2013	Dummy with the value of 1 the year 2013
YEAR 2014	Dummy with the value of 1 the year 2014
YEAR 2015	Dummy with the value of 1 the year 2015
YEAR 2016	Dummy with the value of 1 the year 2016
YEAR 2017	Dummy with the value of 1 the year 2017

7.3 Descriptive statistics

This thesis has now given an overview over the sample selection, the data collection process and the variables that later form the regression equations that will be presented in the next chapter. Before moving to that, descriptive statistics will be presented from a more general point of view. Actual distributions of the sample will be covered after. Focus of this section will be on the independent variables, i.e. gender variables. The data set of this thesis is highly unique because of two reasons. Firstly, because of how difficult it is to obtain the data. Manual collection is the only opportunity since databases such as BoardEx and Orbis severe incompleteness. Secondly, because of the long-stretching time-frame. As a result, the descriptive data of this thesis on its own represents interesting insight from a societal and statistical perspective. Therefore, a broader overview and analysis than what one would expect from a master thesis will be given of the data and is justified based on earlier mentioned arguments. Since the aim of the thesis is to research the effect of gender on accounting conservatism, it is relevant to understand if and in what way gender diversity is present. The Corporate Governance Code reviewed in chapter 3.2.3 gives little insight of what is to be expected and non-academic sources about statistics on women in high top positions vary in figures. As such this chapter alone contributes to the society, its stakeholders as well as gives international context about the gender diversity in Finland.

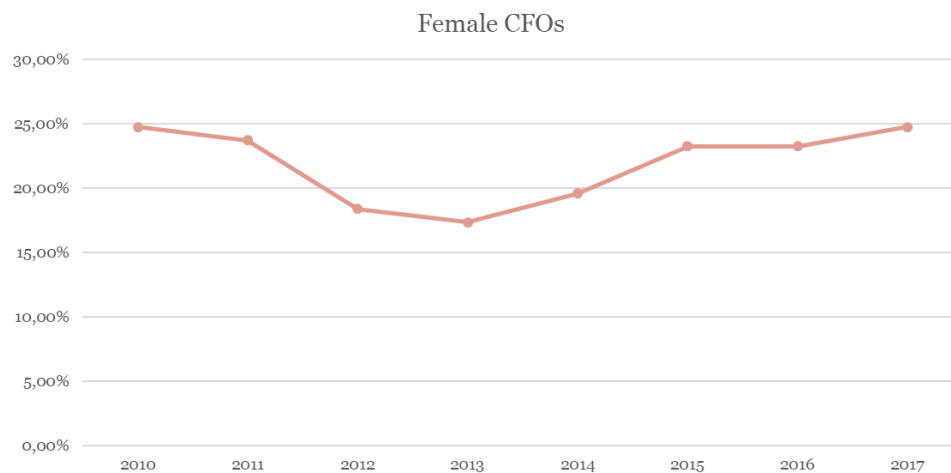
Firstly, looking at CEO and CFOs vacancies the figure clearly describes the differences of distribution of the two vacancies. Of all the samples CEOs only 2,2 % are women and 97,8% are men. Interestingly however women represent 21,8% of all CFO vacancies (and men 78,14%) which represents a clear difference. While the lack of women as CEOs form a limitation on the study going forward, the rate of women as CFOs is high enough to possibly provide some results.

Figure 5 Distribution of women in CEO and CFO vacancies



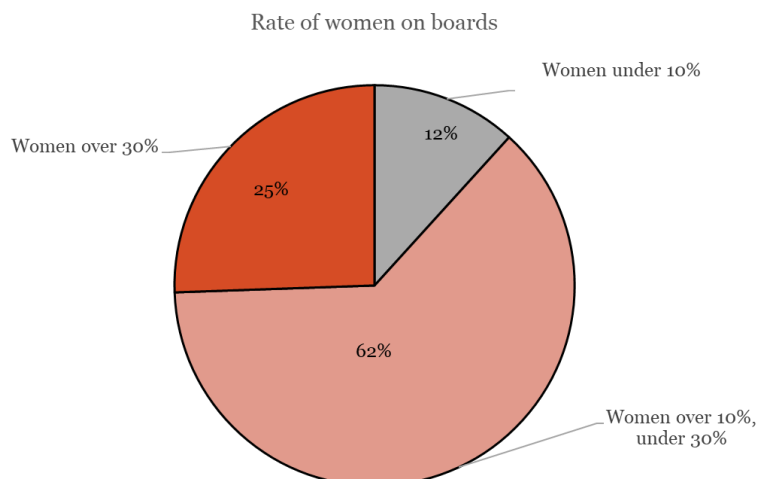
Continuing, an overview over the amount of CFO through time (2010-2017) shows that the number of female CFOs in the sample has stayed between 17-25% with peaks in 2010 and 2017 (25%). The rate is decreasing between 2010 with a min value in 2013 (17%) after which the rate is again increasing towards 2017. The highest yearly increase is in 2015 with a 21% increase.

Figure 6 The rate of female CFOs through time



Secondly, an overview of the rate of women on boards is presented. This categorisation is based on the same categorisation as the dummies in the thesis, that are derived from the critical mass theory and coded in the data collection process. The descriptive statistics show that 12% of the boards have under 10% women. The most, representing 62% of the sample, have between 10% but under 20% women on the board. Lastly, 25 % of the sample has over 20% women represented on the board.

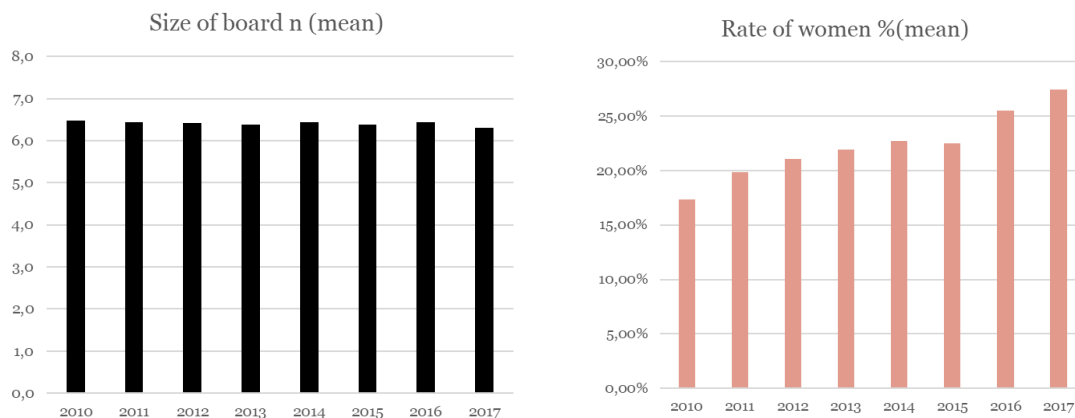
Figure 7 The rate of women on boards



For these numbers to have a context, an analyse of the size of the boards are made. The statistics show that the size of the board has through time (2010-2017) stayed fairly the same – between 6-7 members. Meaning that most of the samples firm (the category women over 10%, under 30% have the absolute number of two (2) women on their boards. The companies with over 30% have the absolute number of three (3) or higher thus confirming that the dummies in this thesis is comparable to the critical mass theory.

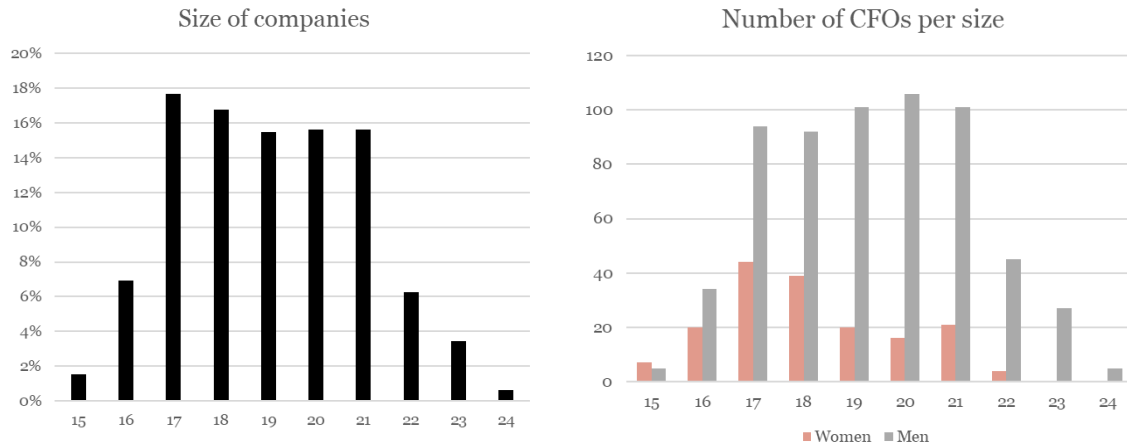
To provide further insight, an overview of the mean rate of women on boards through time is provided. Interestingly, even though size of the Finnish boards has stayed the same, the rate of women has steadily increased with a clear jump in 2016. As presented in the chapter 3.2.2 gender diversity, the new corporate governance code from 2015 was enforced 1.1.2016 meaning that publicly listed companies needed to strive for a gender balance (=comply) or explain and most companies increased their rate of women by an absolute number of one (1) in this year.

Figure 8 The progression of board size and gender diversity in Finnish publicly listed firms 2010-2017.



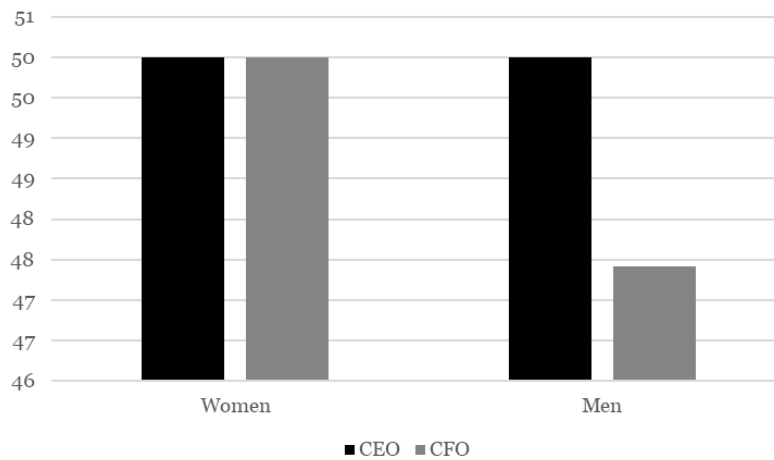
Further, an overview of the size of the publicly listed firms in Finland is presented. The analysis is made on the variable for size used in the thesis – log of total assets for easier interpretation. The analysis show that the size follows a normal distribution. Since women as CEOs represents such a small rate a further analysis on how the gender of the CEOs are distributed is not of interest. However, an analysis of the distribution of CFOs provide interesting insight. As the diagrams show, the distribution of the female CFOs is skewed to the smaller firms while the distribution of male CFOs is skewed to the larger firms.

Figure 9 Distribution of size of companies and CFO gender per size



Looking closer at the average age of CEOs and CFOs the statistics show that the average age for female CEOs is the same (note only 2,2 % female CEOs) as for male CFOs. Compared to the CFO vacancies where male CFOs are on average 3 years younger than female CFOs

Figure 10 Average age of CEOs and CFOs



To summarize, the rate of women in CEO positions is only 2,2 % during the 7-year time frame. The rate of women in CFOs positions is significantly higher (21,9 %) with an increasing trend. The average board size during 2010-2017 is 6-7 which of women are two, in most companies. A significant increase was noted in 2016, perhaps due to the implementation of the new corporate governance code as explained in chapter 3.2.3. Female CFOs are young then male CFOs and they generally have positions in smaller companies.

7.4 Distribution of sample

Moving forward, the next part will more thoroughly present the distribution of the sample. Several outliers were identified through scatter plot diagrams and confirmed through a first run of the distribution of the sample. As a result, a decision was made to winsorize the data at a 1% since outliers would decrease the validity of the research model and reliability of the result. The following variables were winsorized: the components of the ACCF measure, the negative accruals measure, growth and leverage. After winsorizing all variables are observed to follow more or less a normal distribution curve without outliers, providing a solid foundation for further analysis with the help of measures of central tendency, dispersion and higher moments. These measures for the sample are presented in table 9 and interpreted next.

The table shows that the value of accruals is -0.05 with a median of -0,04. This is in accordance with prior literature both regarding the actual values as well as the fact that the accruals are negative. Francis et al. (2015) use another research model that build on the effect of transition from a male CFO to a female CFO. Therefore, the comparison on the descriptive statistic is not as compatible as with Ho et al. (2015). Ho et al. (2015) presents a mean value of accruals of -0,06 and median -0,055. Showing that, the descriptive statistic in this thesis has values close to prior studies. Accruals being negative is also consistent with prior studies (Ball and Shivakumar 2006; Basu 1997; Givoly and Hayn 2000).

Also consistent with prior literature is the values for cash flows. The mean and median value for cash flows is 0,07. The proportion of negative operating cash flow in the sample (DCFO) is 23%. The fact that only 23 % have negative cash flows is consistent with authors such as Givoly and Hayn (2000), since most companies achieve positive cash flows from operations. The mean value for the negative cash flows is -0,03 (DCFO*CFO). Ho et al. (2015) reported a mean value for cash flows (CFO) of 0,117 which is slightly higher, but their proportion of negative cash flows were only 5,3%. This could be preliminary proof that the settings are different and therefore support the contribution of this thesis.

Both accruals and cash flows have high kurtosis and are skewed. However, the mean for accruals are negative while cash flows are positive, which is in accordance with the accruals and cash flows moving hand in hand but in opposite directions. Moreover, the values for skewness show that both accruals and cash flows are indeed skewed and that

accruals are skewed more to the right (e.g. positive values) and cash flows more to the left (negative values). Both of these things indicate that there might be differences in rates of positivity of accruals and negativity of cash flows, which is the basic premise of conservative accounting (Basu 1997; Ball and Shivakumar 2005).

Somewhat worrisome is the low value (-0,03) and rate of variance (0,03) with the combination of a high kurtosis (9,88) in the negative accruals measure. As such it indicates that most of the values are packed close to zero. This might limit the NA models' possibilities to pick up any explanatory power. However, no affirmative conclusions are drawn at this point.

As most of the gender variables are dummies, the measure of dispersion and higher moments does not give added value. These variables are therefore earlier presented with the help of graphs. To summarise, 2% of the samples chief executives are women (WCEO) and 22% of the samples chief financial officers (WCFO). The mean for rate of women on boards (WBOARD) is 22%. Median, as defined as the observation that is located halfway between the smallest and largest observation is 20%, which is very close to the mean, supporting that most of the Finnish listed firms has 20% of women on their boards. The low variance of only 2%, and the low kurtosis of only 3% supports this and confirms that the variable follows as normal curve. The positive skewness of 20% show that the sample is more skewed to the left meaning that even though there exists a max value of 67% women on boards, more observations are packed to the lower rates. The nominal variables, the board dummy's skewness further supports.

Some observations about the control variables are noteworthy. The descriptive statistics show that 57 % of the firms have an audit committee. A further analysis (figure 10) shows the progression of audit committee during 2010-2017. The mean for the years 2016 and 2017 is 63,5% compared to the mean of 53,5% for the years 2010-2015. Showing that the implementation of the new corporate governance 2015 (implementation date 1.1.2016) had somewhat of an impact but still more than a fourth of the companies choose to explain instead of complying. This in combination with the development of female CFOs as described in the previous chapter contributes with information to the legislative makers.

Figure 11 **Audit committee progression 2010-2017**

<i>Audit committee</i>							
2010	2011	2012	2013	2014	2015	2016	2017
51 %	53 %	52 %	53 %	53 %	59 %	64 %	63 %

The growth% of the sample varies from -100% to 123%. However, the mean for growth is only 4% and the median 3%. The low variance (0,06) and the high kurtosis (7,53) indicates that most of the sample's values are packed around the mean. The positive skewness further supports. From the two prior papers studying gender variables and accounting conservatism, Francis et al. (2015) computes both growth and size. Therefore, a comparison of the mean values is possible to shed some light into the difference in settings and population. The mean for growth in the study by Francis et al. (2015) is around 20%. Providing interesting insight about the differences in growth rates of a firm in a Finnish setting compared to a US setting. Comparing the size, the mean log for the firms in Francis et al. (2015) sample is around 7.

Finally, the mean for leverage is 16%. Note however that it is only long-term leverage divided by total assets as this gives to the authors knowledge a better view of the debt to actual providers of capital and is in accordance with prior literature. 37% of the companies represent a firm in a litigious industry and statistics for the years show that even though the data is an unbalanced panel data, the observations are equally distributed over the years with 12-13%. The rate of companies per industry vary with Energy and Utilities represents the smallest rate and Materials together with IT the highest rate. This gives a good premise for year-fixed effects to be captured, in case of existence.

Table 9 Descriptive statistics after winsorising²

<i>Variable</i>	Min	Max	Mean	Median	Std.	Variance	Skewness	Kurtosis
ACC	-76,17	3,03	-0,16	-0,04	2,74	7,51	-27,30	757,51
CFO	-3,09	75,28	0,18	0,07	2,71	7,34	27,24	755,57
DCFO	0,00	1,00	0,23	0,00	0,42	0,18	1,26	-0,42
DCFO*CFO	-3,09	0,00	-0,04	0,00	0,15	0,02	-12,34	226,04
NA	-3,20	76,12	0,07	-0,04	2,74	7,51	27,29	757,49
WCEO	0,00	1,00	0,02	0,00	0,15	0,02	6,59	41,53
WCFO	0,00	1,00	0,22	0,00	0,41	0,17	1,36	-0,14
WBOARD	0,00	1,00	0,22	0,20	0,13	0,02	0,42	1,42
WBOARD10	0,00	1,00	0,12	0,00	0,32	0,10	2,41	3,80
WBOARD1030	0,00	1,00	0,62	1,00	0,49	0,24	-0,48	-1,77
WBOARD30	0,00	1,00	0,25	0,00	0,43	0,19	1,15	-0,69
AUDCOM	0,00	1,00	0,57	1,00	0,50	0,25	-0,28	-1,93
CEOAGE	33,00	64,00	50,64	51,00	5,52	30,42	-0,37	-0,16
CFOAGE	31,00	65,00	47,98	48,00	6,27	39,33	0,07	-0,25
SIZE	15,13	24,53	19,56	19,47	1,95	3,79	0,16	-0,74
GROWTH	0,00	26,40	1,11	1,03	1,12	1,26	17,79	363,21
LEV	0,00	2,29	0,16	0,14	0,15	0,02	4,91	55,92
Energy	0,00	1,00	0,01	0,00	0,11	0,01	8,71	74,09
Industrials	0,00	1,00	0,10	0,00	0,29	0,09	2,76	5,63
Materials	0,00	1,00	0,38	0,00	0,49	0,24	0,52	-1,74
Consumer Disc.	0,00	1,00	0,11	0,00	0,32	0,10	2,47	4,09
Consumer Stap.	0,00	1,00	0,07	0,00	0,25	0,06	3,42	9,70
Health Care	0,00	1,00	0,06	0,00	0,24	0,06	3,72	11,87
IT	0,00	1,00	0,20	0,00	0,40	0,16	1,51	0,27
Commun. Servic.	0,00	1,00	0,06	0,00	0,25	0,06	3,54	10,56
Utilities	0,00	1,00	0,01	0,00	0,11	0,01	9,20	82,88
YEAR2010	0,00	1,00	0,12	0,00	0,33	0,11	2,29	3,27
YEAR2011	0,00	1,00	0,12	0,00	0,33	0,11	2,29	3,27
YEAR2012	0,00	1,00	0,12	0,00	0,33	0,11	2,28	3,19
YEAR2013	0,00	1,00	0,12	0,00	0,33	0,11	2,28	3,19
YEAR2014	0,00	1,00	0,12	0,00	0,33	0,11	2,29	3,27
YEAR2015	0,00	1,00	0,13	0,00	0,33	0,11	2,26	3,11
YEAR2016	0,00	1,00	0,13	0,00	0,33	0,11	2,26	3,11
YEAR2017	0,00	1,00	0,13	0,00	0,34	0,11	2,23	2,96

N=786

² As the max values were so severe descriptive statistics before winsorizing would not have added any value to this thesis as the max values could be because of errors in the data collection process. The descriptive statistics before winsorizing is attached in the APPENDIX for reference.

8 METHODOLOGY

In this chapter an overview of the methodology will be given to shine light on the process that lead to the results described and discussed in the next chapter. First, the regression equations will be presented. Based on these equations the estimation methods were chosen and the arguments for them will be presented. Lastly, as a total of 13 regressions were run for the ACCF-model, an overview of this process is given that ultimately lead to the final regression equations listed below.

8.1 Regression models

Regressions are used to analyse in what way the movements of the independent variables affect the movements of the dependent variable (Brooks 2008). Hence, when used correctly it can give explanations about relationship between variables. The aim with this thesis is to study if gender has an effect on accounting conservatism, i.e. the relationship between these two variables. OLS is one of the most common methods to do so and will thus be used in this thesis (Brooks 2008). The regression models of this thesis are constructed based on 1) the variables described in chapter 7) and 2) on the purpose of this thesis. The baseline regression for both equations has the following structure:

$$\text{Accounting conservatism} = f(\text{gender variables, control variables, fixed effects})$$

Where the asymmetric-accruals-to-cash flow (ACCF) has the following main regression equation:

$$\begin{aligned} ACC = & \alpha_0 + \beta_1 DCFO + \beta_2 CFO + \beta_3 DCFO * CFO + \beta_4 WCFO + \beta_5 DCFO * WCFO \\ & + \beta_6 CFO * WCFO + \beta_7 DCFO * CFO * WCFO + \beta_8 WCEO + \beta_9 DCFO \\ & * WCEO + \beta_{10} CFO * WCEO + \beta_{11} DCFO * CFO * WCEO + \beta_{12} WBOARD30 \\ & + \beta_{13} DCFO * WBOARD30 + \beta_{14} CFO * WBOARD30 + \beta_{15} DCFO * CFO \\ & * WBOARD30 + \beta_{16} AUDCOM + \beta_{17} CEOAGE + \beta_{18} CFOAGE \\ & + \beta_{19} AUDCOM + \beta_{20} SIZE + \beta_{21} GROWTH + \beta_{22} LEV \\ & + \beta_{23-29} INDUSTRY \text{ FIXED EFFECT} + \beta_{30-36} YEAR \text{ FIXED EFFECT} + \varepsilon \end{aligned}$$

And the negative accruals (NA) model has the following:

$$\begin{aligned} NA = & \alpha_0 + \beta_1 WCFO + \beta_2 CEO + \beta_3 WBOARD + \beta_4 BOARD30 + \beta_5 AUDCOM + \beta_6 CEOAGE \\ & + \beta_7 CFOAGE + \beta_8 AUDCOM + \beta_9 SIZE + \beta_{10} GROWTH + \beta_{11} LEV \\ & + \beta_{12-18} INDUSTRY \text{ FIXED EFFECT} + \beta_{19-25} YEAR \text{ FIXED EFFECT} + \varepsilon \end{aligned}$$

In the ACCF-model, CFO (β_2) represents positive cash flows, i.e. gains and DCFO*CFO (β_3) represents negative cash flows, i.e. losses. The underlying relationship provided by Ball and Shivakumar (2005) is that 1) The lower the correlation between accruals and positive cash flows, the slower gains are recognised. 2) The higher correlation between accruals and negative cash flows, the faster losses are recognised. Meaning, that when accounting conservatism exists, positive correlation between cash flows and accruals is greater for losses than in gains. Therefore, the more negative coefficient for cash flows β_2 and positive coefficient for negative cash flows β_3 , the more conservatism. Adding gender variables as interaction variables gives the following final form. Of interest becomes then not only how positively correlated β_2 is, but the same expectation applies for β_6 , β_{10} and β_{14} representing each gender variable. The same applies for the expectation of β_3 , β_7 , β_{11} and β_{15} but for a negative correlation.

Next moving on to the expectations for the NA-model. Givoly and Hayn (2000) proved that 1) nonoperating accruals decrease in accounting conservatism. 2) Operating increase in accounting conservatism. Therefore, the more negative accruals a firm has, the more accounting conservatism. The NA measure has been scaled and inverted in this thesis to easy interpretation. Meaning that the more positive correlations between the variables, the more negative accruals, i.e. the more accounting conservatism.

8.2 Estimation methods

Based on the regression models presented, as well as the characteristic of the data set in this thesis, the estimation methods are chosen. Starting with the characteristics of the data, the definition of balanced panel data is data where all companies have the same number of observations (Brooks 2008; Gujarati & Porter 2009). Even though as stated in the descriptive statistics, the observations are close to equally distributed per year, the amount of observation per companies varies. Hence, the data in this thesis represents an unbalanced panel data. According to theory, there are four possible estimation methods for panel data: pooled OLS, fixed effects least square dummy variable (LSDV) model, fixed-effect within-group mode and random effects model (REM) (Gujarati & Porter 2009).

The main problem with the LSDV model is that it is not sufficient enough in a research design with many dummy variables. One reason for this is that it does not capture the impact of unchanged variables over time such as gender that is present in this research

design. As a result, the intercept absorbs all possible heterogeneity in the independent variables. (Gujarati & Porter 2009)

The same underlying problem is present in the pooled OLS model. Possible options left are the fixed effect model and the random effects model, which is one of the most highly debated questions in econometrics (Gujarati & Porter 2009). Usually, the Hausman test is used to distinguish between the two models. The logic with the Hausman test is that the null hypothesis is the random effects model and if it is rejected, the fixed effects model should be applied since the random effects model is not appropriate. However, as Bell and Jones (2015, pp.138) points out, "it is problematic if the test is only viewed in the terms of fixed effects and random effects and not in terms of what is actually going on in the data". In accordance with this I have followed the guidelines by Gujarati & Porter (2009) in determining analytically which estimation model is better, rather than only estimating based on the Hausman test. The main arguments for applying the random effects model by Gujarati & Porter (2009) is the following:

- (1) if the number of time series (t) is large and the number of cross-sectional units (n) is small the difference in the values of the parameters estimated will not differ significantly between fixed effects model and random effects model. (Gujarati & Porter 2009). The time-frame might not be large compared to several other studies made, but the N is significantly smaller than in prior studies made. Thus it can be argued that this criteria is fulfilled.
- (2) The fixed effects assume that β is fixed and is appropriate if it is strongly believed that the sample is not random drawings from a larger sample. Since almost no other firms besides the bank- and insurance industry has been dropped from the total population and thus the sample resembles closely the total population of Finnish stock listed firms during the time-frame it can be argued that this criterion is fulfilled. (Gujarati & Porter 2009)
- (3) The fixed effects model does control for time-invariant variables such as gender but cannot estimate them directly. However, most of previous studies in the field with similar research design characteristics gender as the independent variable, have used the fixed effect model. Examples of this is the study conducted by Niskanen et al. (2011) on Finnish data as well as the two prior studies on gender and accounting conservatism references extensively in this thesis, Ho et al. (2105) and Francis et al. (2015). In line with prior studies, the regression models are run

without the fixed effects to test if the results vary depending on the panel estimation specifications. (Gujarati & Porter 2009)

Moreover, the Hausman test confirms the choice for the fixed effects model for both the negative accruals model as well as the asymmetric-accruals-to-cash flow model. In both cases the null hypothesis is rejected on a 5 % level and the fixed effects is preferred.

The building block of the OLS is the equal spread, equal variance assumption. Meaning that OLS is only efficient when it can be assumed that the variables have equal variance and equal spread (Gujarati & Porter 2009). To check if the sample fulfils this criterion, heteroscedasticity needs to be checked for. Meaning that we check if Y (accounting conservatism) corresponds differently to different X values (gender), in other words, not all Y values corresponding to the X values are equally important (Gujarati & Porter 2009). The null hypothesis for heteroscedasticity is homoscedasticity. If the null hypothesis is rejected, heteroscedasticity is present. Gretl provides the tests Breush-Pagan Godfrey, Koenker-Basset and White's test. All three are run and confirm the same results on a 1 % significance level – that heteroscedasticity is present for all tests.

As explained above, in cases where heteroscedasticity is present, this criterion for OLS is not fulfilled. Hence, the OLS estimators are not sufficient enough to capture those variances and results might be misleading if no further actions are taken. White's heteroscedasticity corrected standard errors, i.e. robust standard errors mitigate this problem. As heteroscedasticity is present in the sample of this thesis, robust standard error option in Gretl is chosen when running the regressions.

Besides heteroscedasticity, multicollinearity is another possible threat to the underlying assumption of the OLS. The reason is that if multicollinearity exists, i.e. the independent variables are not independent amongst each other, it will deteriorate any conclusions made based on the results from the regression. Meaning, that if i.e. gender and leverage are highly correlated it becomes difficult to distinguish which one actually affects conservatism since they will change in unison and as a result multiplies each other's effects. As a result, small changes will have a large effect on the model and thus reduce the precision of and therefore the validity, i.e. how well the model measures what it is supposed to. As Kmenta (1986) defined it, multicollinearity is not something one can test for since it is a question of degree and not kind. Hence, we test for the degree of multicollinearity the sample of this thesis. The Pearson's correlation test is run and shows results reported in table 10. Based on the results from the correlation matrix some

decisions are made before conducting the actual regressions. These are summarized below, but first, the results from the correlation matrix is presented and discussed. The results can be found in table 10.

The threshold applied for multicollinearity when analysing the results from the correlation matrix is 0,8. Year and industry fixed effects are not included in the correlation matrix. The only multicollinearity problem is between the variable NA and ACC as well as CFO and NA. Note that this is not a problem going further since negative accruals and the components of the ACCF-model (Accruals, Cash flows and corresponding dummies) will never be included in the same model. Furthermore, it confirms that the variable accruals and negative accruals are very close to being mirror variables and strengthens the made decisions of using the NA model as a robustness analysis. The correlations that will never be in the same model are in cursive.

The correlations that are close to 0,8 are bolded in black. The first multicollinearity risk is among accruals and cash flows. However, as the theory, literature review and research design has presented we know that accruals and cash flow will move with a high correlation in opposite directions. Thus, the aim with asymmetric accruals to cash flow is not to distinguish *if* they move in different directions with a high correlation but more so *how* asymmetrically i.e. if there exists accounting conservatism or not. Since multicollinearity does not affect the precision of prediction, which is the aim, the high rates of multicollinearity are not a problem in this case (Gujarati & Porter 2009). Same argument applies to the proportion of negative cash flows (DCFO) with cash flows (CFO).

However, a possible multicollinearity threat is present between the board percentage and the dummy board variable WBOARD30. It is also present between the WBOARD1030 and the WBOARD30 dummy variables. A way to mitigate the problem according to theory is to drop one or several variables that correlate (Ghauri and Grønhaug 2005). However, no hesitated decisions were made at this point, but more so gave guidance when running the regressions. To verify the actual multicollinearity threats in the regression models, the VIF tests were applied after every regression to ensure that the multicollinearity was on an accepted level before reporting any results. More about this in the next chapter 8.3.

Multicollinearity does not only guide one when making decisions about the regression models but gives also primary results for what can be expected going forward. Some observations will be presented but no conclusions about causal relationships will be made. As earlier stated, the correlations between accruals and cash flows as well as the rest of the components of the measure are accordance with literature that gives a good premise for the ACCF-model. No significant correlation between the gender variables and the accounting conservatism variables, besides the board, are present. However, as the ACCF model builds on interaction variables no conclusions will be made yet. Several variables have a significant correlation with the ACCF measure components: size, leverage, growth, litigious industry, and WBOARD30 dummy. Somewhat alarming is the fact that negative accruals does not have any significant correlation with any other variables besides growth. However, the possibility that a nonlinear relationship exists, that only will be revealed with regressions, is noted.

As explained in Chapter 7 research design, the data has been winsorized after discovering several outliers. The arguments for that our data is normally distributed and the appropriateness of the OLS model for other parts has been made earlier in this chapter. However, the Spearman's correlation test is run and compared to the results from the Pearson's to confirm this. The results show that the same variables are significantly correlated with each other, the signs are in the same directions and the actual values differ only slightly. Confirming that the results obtained by the Pearson's correlation hold. This means that it is further confirmed that we have no outliers disturbing the sample before going forward to the regressions and that the assumption of that the linear relationship between the variables hold.

Table 10 Pearson correlation

	ACC	CFO	DCFO	DCFO* CFO	WCFO	WCFO	WBOARD	NA	WBOARD D10	WBOARD D1030	WBOARD D30	AUDCO M	CFOAGE	CFOAGE	SIZE	GROWTH	LEV	
ACC	1																	
CFO	-0,777***	1																
DCFO	,461**	-0,613**	1															
DCFO*C FO	-0,471**	,713**	-0,588**	1														
WCFO	0,005	-0,037	0,042	-0,059	1													
WCFO	-0,031	0,016	0,021	0,005	,091*	1												
WBOARD	0,033	0,031	-0,114**	,106**	-0,001	0,058	1											
NA	(-0,903**)	(,779**)	(-0,458**)	(,522**)	-0,006	0,028	-0,024	1										
WBOARD D10	-0,031	-0,041	,110**	-0,097**	0,02	-0,026	-0,640**	0,011	1									
WBOARD D1030	-0,003	0,02	-0,003	-0,006	-0,007	-0,045	-0,270**	-0,002	-0,459**	1								
WBOARD D30	0,041	-0,003	-0,072*	0,069	0,005	,075*	,766**	-0,021	-0,210**	-0,737**	1							
AUDCON	0,032	-0,006	-0,048	,077*	-0,162**	-0,012	,321**	-0,007	-0,200**	-0,092**	,220**	1						
CFOAGE	0,035	0,029	-0,065	0,057	-0,019	-0,032	,206**	0,012	-0,181**	-0,014	,133**	,183**	1					
CFOAGE	-0,013	-0,013	-0,006	-0,011	,171**	0,054	,127**	0,02	-0,073*	-0,038	,083*	0,05	,097**	1				
SIZE	,074*	0,035	-0,180**	,222**	-0,247**	-0,074*	,375**	0,012	-0,314**	-0,052	,245**	,591**	,345**	,116**	1			
GROWTH	,257**	-0,120**	0,012	0,055	-0,022	-0,023	0,061	-0,213**	-0,021	-0,038	,071*	0,004	-0,05	-0,100**	0,029	1		
LEV	-0,091*	-0,018	-0,001	0,038	-0,077*	,078*	-0,007	,070*	0,047	-0,119**	,079*	,127**	0,06	,116**	,158**	-0,054	1	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

() = never in the same model

8.3 Process of the main model

Next the process of what led to the final regression equations for the ACCF Model will be described. Note that the regression equations listed in chapter 8.1 are the finalized versions and this is just a process description for possible future reference. For both the ACCF model and NA model, the YEAR2010 and Utilities were dropped from the beginning to mitigate the problem of dummy traps. When analysing the VIFs two changes were made. Firstly, the industry-dummies showed too high values for collinearities and therefore the dummy with the highest value (Industrials) was dropped that led to the regression equation totalling in 7 industry variables. Secondly, as recognized based on the correlation matrix, the gender dummies (WBOARD10, WBOARD1030, WBOARD30) and WBOARD (as percentage) had too collinearity values. The decision to drop WBOARD10 and WBOARD1030 was made. However, the VIFs for WBOARD were still very high (>9) indicating problems with multicollinearity. Comparing this to the WBOARD30 VIFs that were on an acceptable level of <5 . The decision to drop variable WBOARD and continue only with the dummy WBOARD30 in the multivariate regression analysis was made. Reasoning it with the following arguments. 1) The WBOARD dummy is a much noisier variable as it's a percentage. 2) WBOARD30 represent the "magic"-number according to the critical mass theory as explained in Chapter 3.2.3. 3) The Adjusted R-Square for WBOARD30 was slightly higher showing a better fit of the model.

A total of 13 regressions were performed based on the ACCF-model of which 9 were univariate regression analysis and 4 were multivariate regression analysis. The aim with this was more so to be able make conclusions about the explanatory power that the variables had and compare them to each other. Additionally, Adjusted R-square provides a benchmark going further to the multivariate regression analysis. Note that this thesis does not interpret Adjusted R-square as the absolute truth about the actual fit of the model. However, it is useful as a benchmark when comparing the separate univariate regression models since all other things remain the same. To begin with ACCF regression is run without any independent, control or fixed effects. Thereafter all the independent and control variables besides age and the year-and industry effects were run separately without control or fixed effects, i.e. univariate regression analysis were made for WCFO, WCEO, WBOARD, WBOARD30, AUD, SIZE, GROWTH and LEV and their corresponding cash flow-interaction variables.

When analysing the univariate results, three things were of interest. 1) The change in the Adjusted R-square. An increase or decrease as increase would mean that the added variables explain more than what cash flows do on their own and decrease would mean that the fit of the model is worse. 2) Is the coefficient corresponding beta2 ($X \cdot CFO$) significantly positive, and if, is it less than in Model 1 (are gains reported slower). 3) Is the coefficient corresponding beta3 ($X \cdot CFO \cdot DCFO$) significantly negative, and if, is the more than in Model 1 (losses are reported faster).

The regression run with SIZE showed too high VIF values and therefore the decision was made not to use cash flow interaction variables but instead just use SIZE as a control variable in the multivariate regression analysis. This will be later discussed in limitations (Chapter 10).

Going forward to the multivariate analysis the following things were in focus. 1) What is the effect on the adjusted R-square. 2) In what way will the results change compared to the univariate analysis. Based on this background information, the results will be presented and discussed next.

9 RESULTS

This chapter is divided into three chapters. First, presenting and analysis the results obtained on conditional conservatism from the asymmetric-accruals-to-cash-flow-model (ACCF). The results are discussed one main hypothesis at a time, i.e. one gender variable at a time. Univariate and multivariate regression results are presented per gender variable. Followed by a discussion on validity and reliability. Secondly, presenting and analysing the results obtained on unconditional conservatism from the negative accruals model (NA). Only one regression was run for the NA model as the purpose of the model was to induce a robustness analysis for conditional conservatism and see if the second parts of the main hypothesis also hold. Thirdly, the results from the additional analysis is presented and discussed.

9.1 Conditional conservatism

To provide a benchmark for how much cash flows by themselves explain in the ACCF model in the Finnish setting, a univariate regression is run without any independent, control or fixed effects. The results are shown in the univariate regression analysis table, model, hereafter called the base-model. The reported adjusted R-square is 61,1% which functions as our benchmark going forward when comparing the fit of the model for the independent variables. Furthermore, it is of interest to verify that the basic premise of the ACCF model is intact as intended by Ball and Sivakumar (2005). Beta2 (CFO) has a negative relationship with accruals on a 1% significance level. Meaning, that in year with positive cash flows (profit), accruals are offset by 82% for the whole sample. Beta3 (CFO*DCFO) has a positive relationship with accruals, on a 10% significance level. Meaning, that in year with negative cash flows (losses), accruals are offset by 30% for the whole sample. According to this the whole sample would still report gains faster than losses and thus the aim with the univariate regression is fulfilled and is in accordance with prior literature (e.g. Ho et al 2015; Francis et al. 2015).

9.1.1 *The effect of female CEOs*

From the prior papers referenced, Ho et al. (2015) used women as CEO as their gender variable when researching genders effect on accounting conservatism and found a significant relationship for US firms. The main argument for that CEOs have an impact on accounting decision is made based on the scope and power that the manager has (Ho et al. 2015). This thesis hypothesized that this effect would also hold in the Finnish setting since CEOs in the joint Nordic Model have far-reaching authorities to manage the

business (Lekvall 2014). The preliminary results based on the univariate regression show that women as CEOs have a significant positive relationship with accounting conservatism on a 5% level. They offset accruals in times of profit by 0,28 and in times of losses by 1,60. Thus, a clear asymmetry exists in how fast gains versus losses are reported. Both values are also significantly different from the values for the whole sample, confirming that the gender of the CEO has explanatory power of accounting conservatism. This is also confirmed by significant results from the multivariate regression analysis where the women report gains at a rate of 0,23 and losses at a rate of 1,13. The results are in accordance with results from Ho et al (2015).

However, as presented in the descriptive statistics, only 2,16% of all CEOs are women. Hence, the reliability of the results regarding the effect of female CEOs on conditional accounting conservatism is low. This is confirmed by comparing the threshold adjusted R-square from the base model with the one reported in Model 3, the univariate regression analysis for WCEO. The adjusted R-square increase by only 1 % which confirms that the female CEOs in this research design has explanatory power, but very little, over conditional accounting conservatism. The risk of endogeneity problems is estimated to be high. Statistically, the hypothesis H1 is confirmed but no economic significance is confirmed.

Table 11 **The effect of women as CEOs on conditional conservatism**

<i>Hypothesis</i>	<i>Confirmed</i>
H2a There is a positive relationship between women as CEO's and conditional accounting conservatism	x

9.1.2 The effect of female CFOs

Compared to the rate of CEOs in the sample, female CFOs are represented much better in the sample. Of all CFO vacancies, women represent 21,86%. On a general level, CFOs are expected to have an even greater effect on conditional conservatism than CEOs as the CFO has the most direct impact on accounting decisions and holds the primary responsibility of financial reporting/accounting (Francis et al. 2015). The literature review in chapter provides vast proof of how the gender specially of CFOs has affected accounting decisions in the form of less tax aggressiveness, better accounting quality and more conservative earnings management strategies (Francis et al. 2014; Barua et al 2010.; Liu et al. 2017). Based on the univariate regression analysis, female CFOs are

found to report losses at the rate of 0,812 at a 5 % significance level. Regarding how fast gains are reported, no significant relationship is found even though the coefficient is as it should (-0,23). However, it is mostly the beta3 that is of interest when confirming accounting conservatism. The results from the multivariate regressions confirm this, by reporting similar results as the univariate, losses are reported on a 5 % significance level at the rate of 0,716. These results hold through all models. Furthermore, at all times the coefficients are larger than in the regression results from the base model that represent the whole sample. The results on female CFOs hold through all ACCF Models and as such it is confirmed that the effect the CFOs gender on conditional conservatism is positive. Results provided by Francis et al. (2015) in a US setting is thus confirmed in a Finnish setting which can be argued to represent the Nordic setting. As the Finnish setting is clearly different from the US setting as described in the theory of this thesis these results have an international contribution on accounting conservatism in a bank-based, strong corporate governance model.

The reliability of the results is argued to be strong as the number of women in the sample is high enough. Also, because of the fact that both in the univariate model (65%) as well as in the main model (69%) the Adjusted R-Squares are on such a high level. As such the H2a is confirmed.

Table 12 **The effect of women as CFOs on conditional conservatism**

<i>Hypothesis</i>	<i>Confirmed</i>
H2a There is a positive relationship between women as CFO's and conditional accounting conservatism	x

9.1.3 The effect of the rate of women on boards

Boards with women over 30% are found to have a significant relationship regarding how fast they report losses. The rate reported in the univariate regression analysis is -1,74 and in the main model -0,569. This relationship is according to our hypothesis, i.e. negative. Hence, it indicates that less accounting conservatism is used. Moreover, this is in line with the discussion in chapter 4.2.2 about whether accounting conservatism is a substitute or a complement to accounting conservatism. As discussed, according to the substitute perspective, weak corporate governance structures lead to more conservative accounting (Watts 2003; Ahmed and Duellman 2007; LaFond and Watts 2008). The complementary perspective views conservatism as a result of better governance where

companies with strong governance reports bad news timelier (Gacria, Osma and Penalva 2009). As Lekvall (2018) reports, boards in the Nordic countries represent strong boards. According to the results obtained by WBOARD30 there is preliminary proof that accounting conservatism is a substitute in the Finnish Corporate Governance Model rather than a complement. Contributing to the literature regarding the complement versus substitute perspective as covered in chapter 4.2.2. As such the H3a is confirmed. Whether or not more women lead to more conservative, i.e. the true effect of the rate of women on boards, is further analysed later in the chapter Additional Analysis

Table 13 **The effect of women on boards on accounting conservatism part 1**

<i>Hypothesis</i>	
H3a	There is a negative relationship between the rate of women on boards and conditional accounting

9.1.4 Validity and reliability

First, the reported R-squares are compared to analyse in what way they develop in which model. Since the Adjusted R-square increases for all the univariate Models 2-9 it is concluded that adding variables explains more than only cash flows by themselves and thus the risk of cash flows explaining all changes is omitted.

The aim with conducting univariate regression analysis for the control variables as well is to understand the underlying effects that they might have on the multivariate model. At the same time, the preliminary results are used to validate the main research model implemented. If the control variables show the relationships that are expected, i.e. have explanatory power over accounting conservatism, the arguments made in chapter 7.2.3 to control for these are confirmed to be correct.

Firstly, the Audit Committee variable have coefficients similar to WBOARD30 suggesting that as a corporate governance mechanism it leads to less conservatism. However, none of the ACCF model components in the univariate regression have a significant relationship and thus no conclusions can be made. However, in the main model audit committee has a significantly negative coefficient, suggesting that it more so has a relationship with accruals rather than cash flows.

Secondly, size is found to lead to less conservatism, which is in accordance with results by e.g. Ho et al (2015). The argument made is that bigger companies have better

corporate governance resulting in less accounting conservatism. However, in the main model the relationship is the reverse with accruals. This could possibly be explained by the descriptive statistics for size where the variance is high. As such, the risk that this thesis has not controlled sufficiently enough for the effect of size is considered a reality and thus a limitation.

Thirdly, growth has a positive relationship (significance level 5%) with accruals, which indicates that the higher the rate of growth the more accruals are made which indicates conservatism. This is supported by a positive coefficient for reporting losses of 1,146 on a 10% significance level, suggesting that losses are reported faster the faster a firm is growing. This is in line with results provided by prior studies where younger firms are observed to have more accounting conservatism (Khan and Watts 2007; LaFond and Roychowdry 2008).

A similar relationship is found regarding leverage as with growth. Higher leverage ratios lead to losses being reported faster on a 5% significance level. This is in accordance with the contracting perspective discussed in chapter 4.2.1 that is derived from the agency problem of debt and equity discussed in chapter 2.2 where contracting parties have asymmetric payoffs. To recap, banks will always prioritise bad news reporting over good news reporting since good news does not increase the payoff to the bank (Ruch and Taylor 2015). Therefore, it is logical that there is no significant relationship found for reported profits but only for reporting losses.

Age variables of the CEO and CFO has in no model any significant relationships with coefficients to zero. The conclusion drawn is that CEO and CFO age does not have explanatory power over accounting conservatism as hypothesized in earlier chapters. Alternatively, the research design was not constructed well enough for them to have explanatory power.

From the fixed-effects the industry communication services have a positive relationship with accruals on a 10 % significant level. One main reason for this could be because of how the accruals is calculated. Since communication services have significantly lower inventory values, it affects the total accruals measure. The years 2015-2017 also have significantly positive relationships with accruals with an increasing trend 2015-2017. What the reason for that is, remains unexplored since it could be a result of many factors such as e.g. the implementation of the new corporate governance code or changes in the economic environment.

Since the Adjusted R-square increased when control variables were added (from 66 % to 69%) and the results of the independent variable remained the same, it is argued that the purpose of the control variables have been fulfilled and further strengthen the validity of the model.

Supporting this is the result from the multivariate regression analysis made only for the independent variables (WCFO, WCEO, WBOARD30) without any control or fixed effect variables. The results are the same as in the univariate regression models with adjusted R-square of 66%. Further, two of three gender variables are also combined in different combinations (not shown in the results table) confirming that all combinations have lower R-square than when all gender variables are combined (<66%). However, all three combinations still have higher R-squares compared to any of the univariate regression results confirming that the model explains more when the variables are combined then separately, further validating the research model.

To summarize, Female CFOs and CEOs are found to have a positive relationship with conditional accounting conservatism, i.e. use more. The results on the effect of the CFO are argued to be valid and reliable. The results on the effect of the CEO is argued to statistically be significant and thus the hypothesis is confirmed, but the results are analysed not have a high enough validity. Boards are found to have a negative relationship with accounting conservatism but not further conclusions about the effect of rate of women on boards are made at this stage. Both growth and size have a positive relationship with accruals. Further, audit committee and leverage have a negative relationship with accruals. This is in accordance with prior literature covered in chapter 5.2 e.g Barua (2010) and Peni and Vähämaa (2010) researching accrual quality and accruals. Next, the test for unconditional conservatism will be made as a robustness analysis.

Table 14 Univariate regression results (ACCF)

<i>Conditional conservatism. ACCF Model. Univariate regression analysis</i>									
Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
const	0,02	0,01	0,02	0,01	0,02	0,035***	-0,03	0,01	0,03
CFO	-0,815***	-0,754***	-0,780***	-0,969***	-0,823***	-0,928***	-1,349***	-0,787***	-0,759***
DCFO	0,01	0,00	0,01	0,049**	0,02	0,00	0,17	0,01	0,00
DCFO*CFO	0,296*	0,03	0,27	0,611***	0,420**	0,492**	3,778**	0,25	0,11
WCFO		0,038**							
DCFO*WCFO		0,01							
CFO*WCFO		-0,23							
DCFO*CFO*WCFO		0,812**							
WCEO			0,036*						
DCFO*WCEO			0,06						
CFO*WCEO			-0,282**						
DCFO*CFO*WCEO			1,648**						
WBOARD				0,00					
DCFO*WBOARD				-0,174**					
CFO*WBOARD				0,90					
DCFO*CFO*WBOARD				-1,72*					
WBOARD ₃₀					0,00				
DCFO*WBOARD ₃₀					-0,057*				
CFO*WBOARD ₃₀					0,11				
DCFO*CFO*WBOARD ₃₀					-0,717***				
AUDCOM						-0,04			
DCFO*AUDCOM						0,01			
AUDCOM*CFO						0,32			
DCFO*CFO*AUDCOM						-0,57			
SIZE							0,00		
DCFO*SIZE							-0,01		
CFO*SIZE							0,03		
DCFO*CFO*SIZE							-0,199**		
GROWTH								0,087**	
DCFO*GROWTH								0,091*	
CFO*GROWTH								-0,02	
DCFO*CFO*GROWTH								1,146*	
LEV									-0,05
DCFO*LEV									0,06
CFO*LEV									-0,42
DCFO*CFO*LEV									1,393**
Mean dependent var	-0,05	-0,05	-0,05	-0,05	-0,05	-0,05	-0,05	-0,05	-0,05
Sum squared resid	9,90	9,24	9,75	9,55	9,53	9,51	9,30	9,18	9,21
R-squared	0,610	0,644	0,624	0,632	0,632	0,633	0,641	0,646	0,645
S,D, dependent var	0,18	0,18	0,18	0,18	0,18	0,18	0,18	0,18	0,18
S,E, of regression	0,11	0,11	0,11	0,11	0,11	0,11	0,11	0,11	0,11
Adjusted R-squared	0,611	0,640	0,621	0,628	0,629	0,630	0,638	0,643	0,641
VIF	under 3	under 4	under 3	under 10	under 5	under 5	above 10	under 4	under 6

The table shows the coefficients and their significance levels as following:

* Significant on a 10% level, ** significant on a 5 % level, *** significant on a 1 % level

Table 15 **Multivariate regression results (AACF and NA)**

Variable	Conditional				Unconditional
	ACCF. Multivariate				NA. Multivariate
	Model 10	Model 11	Model 12	Model 13	Model 14
const	0,01	-0,266***	-0,247***	-0,248***	-0,089
CFO	-0,732***	-0,689***	-0,684***	-0,809***	
DCFO	0,02	0,03	0,03	0,00	
DCFO*CFO	0,12	0,05	0,04	0,10	
WCFO	0,040**	0,036**	0,030**	0,030*	0,003
DCFO*WCFO	0,00	0,01	0,01	0,01	
CFO*WCFO	-0,24	-0,20	-0,21	-0,15	
DCFO*CFO*WCFO	0,780**	0,716**	0,711**	0,637*	
WCEO	0,040*	0,042**	0,055**	0,03	0,028
DCFO*WCEO	0,06	0,02	0,04	0,03	
CFO*WCEO	-0,333*	-0,224*	-0,279*	-0,13	
DCFO*CFO*WCEO	1,522**	1,129**	1,282**	1,002*	
WBOARD					0,019
WBOARD30	0,00	0,00	0,00	0,01	-0,006
DCFO*WBOARD30	-0,062*	-0,061**	-0,062**	-0,074**	
CFO*WBOARD30	0,05	0,02	0,03	-0,10	
DCFO*CFO*WBOARD30	-0,647**	-0,569**	-0,559**	-0,46	
AUDCOM		-0,022*	-0,019*	-0,064**	-0,009
DCFO*AUDCOM				0,05	
AUDCOM*CFO				0,36	
DCFO*CFO*AUDCOM				-0,23	
SIZE		0,012***	0,011***	0,012***	0,003
GROWTH		0,093***	0,098***	0,083**	-0,155**
DCFO*GROWTH				0,03	
CFO*GROWTH				-0,13	
DCFO*CFO*GROWTH				0,49	
LEV		-0,130***	-0,118***	-0,08	0,098
DCFO*LEV				0,06	
CFO*LEV				-0,45	
DCFO*CFO*LEV				0,77	
CEOAGE		0,00	0,00	0,00	0,000
CFOAGE		0,00	0,00	0,00	0,000
ENERGY		-0,03		-0,02	0,144
MATERIALS		-0,01		-0,01	-0,020
CONSUMER DISC.		0,00		0,00	-0,009
COSUMER STAP.		-0,01		-0,01	-0,001
HEALTHCARE		0,01		0,039*	0,043
IT		0,00		0,00	-0,004
COMMUN.SERVIC.		0,025**		0,025**	-0,036*
YEAR2011		0,01		0,01	-0,002
YEAR2012		0,00		-0,01	0,014
YEAR2013		0,00		0,00	-0,003
YEAR2014		0,00		0,00	0,024
YEAR2015		0,018*		0,019*	-0,001
YEAR2016		0,029**		0,027**	-0,026
YEAR2017		0,039**		0,037**	-0,024
Mean dependent var	-0,05	-0,05	-0,05	-0,05	-0,034
Sum squared resid	8,74	7,71	7,96	7,18	23,549
R-squared	0,66	0,70	0,69	0,71	0,074
S,D, dependent var	0,18	0,18	0,18	0,18	0,180
S,E, of regression	0,11	0,10	0,10	0,10	0,176
Adjusted R-squared	0,66	0,69	0,68	0,70	0,044
VIF	under 5	under 5	under 5	under 8	under 3

(Bolded) are Model 11 & 14 that are the main models following the regression equations as presented in chapter 8.1

The table shows the coefficients and their significance levels as following:

* Significant on a 10% level

** significant on a 5% level

*** significant on a 1% level

9.2 Unconditional conservatism

After the first round of regression an analysis of the VIFs show that the board dummies and most of the industry dummies have a too high of a VIF. Therefore, all board dummies besides the “magic rule”-dummy WBOARD30 is dropped which is in accordance with the ACCF model. From the industry dummies the dummy Industrials are dropped since it has the highest VIF as also the case in the ACCF model.

The only significant variables are the control variables sales growth and communications services. Sales growth is negatively correlated on a 5% significance level. The coefficient is -0,155 meaning that sales growth leads to less negative accruals by -0,155, i.e. more (positive) accruals. This is in accordance with the results obtained from the ACCF model. Communications services also have a slight negative relationship (-0,036) with negative accruals on a 10% significance level. Indicating that according to the NA method communication service companies have fewer negative accruals, i.e. more (positive accruals), also in accordance with the results obtained from the ACCF model. Since the NA model finds no significant relationships between the independent variables and because of its low Adjusted R-square (4,4%) it adds no further value or robustness to our results and cannot be argued to capture unconditional conservatism in a Finnish setting. Thus, all three hypothesis are rejected.

Table 16 **Genders effect on unconditional conservatism**

	<i>Hypothesis</i>	<i>Confirmed</i>
H1b	There is a positive relationship between women as CEO's and unconditional conservatism	no
H2b	There is a positive relationship between women as CFO's and unconditional conservatism	no
H3b	There is a negative relationship between the rate of women on boards and unconditional accounting conservatism	no

As covered in chapter 4.3 unconditional and conditional conservatism vary in ways. This help us in understanding why the results vary between the model for conditional and unconditional conservatism. First, conditional is transitory while unconditional has a consistent impact. The consistent impact is noticeable in the descriptive statistics where

negative accruals have a minimum variance, hence the negative accruals do not vary significantly in the sample. As such, the independent variables cannot statistically have an explanatory power since there is generally no variance in the negative accruals.

The other main reason for explanation is that conditional and unconditional are induced by different conditions where conditional is connected to the importance of debt markets and contracting perspective and unconditional is more so a product of local GAAP and tax regulations. Especially the Finnish Tax legislation is known to set the pace and ways to do accounting. This together with the effect of the local GAAP give little room for the traits and decisions by the manager such as gender to have an effect. Unconditional has as earlier covered been found to be more prominent in countries with less developed stock markets, such as the Nordic countries and as such Finland. The possibility that it is consistently high for Finland affects the ability of the negative accruals measure to capture conservatism and especially changes. This also leads to an explanation why the two prior studies have gotten results for unconditional conservatism and measures for unconditional conservatism has worked as a robustness analysis. The conclusion made is that the setting has an impact.

Furthermore, other prior studies have a less homogeneous population since they include a wider range of asset classes as well as both private and public companies. Since the Finnish stock listed companies needs to follow the exact same rules according to the local GAAP and Tax regulation as well as the IFRS there is little to no opportunity for unconditional conservatism to vary amount the thesis sample. While, when the prior studies have included also smaller companies and private companies, the possibilities for the companies to vary in the way they do balance sheet accounting, is possible.

As such, the thesis only provides proof of the fact that no significant relationship between gender and unconditional accounting conservatism is found.

9.3 Additional analysis

Three additional analyses are made to enhance the robustness of the results as well as give better understanding of the results.

Firstly, to test the ACCF-model a regression is run without the year and industry fixed variables (Model 12). No significant changes are apparent which confirms that the choice of estimation model is not the deciding factor of our prior results and hence confirm the arguments made in chapter 8 Methodology for the fixed-effects model.

Secondly, as the last test all the univariate models are combined and run in the same regression with both year- and industry fixed effects to test if any of the control variables would then take over explanatory power from the independent gender variables (Model 13). The results show that all things remain the same - none of the $X \cdot CFO \cdot DCFO$ variables for the control variables are significant. Further strengthening that this model actually captures the genders effect on accounting conservatism.

Thirdly, even though the decision was made to drop the WBOARD, a univariate regression is run separately and compared to the univariate regression made on WBOARD30. The aim with this is to put the Critical Mass theory to the test. Keeping in mind that the WBOARD had VIFs over 9 but under 10. 10 is deemed too high in some communities while the test itself in Gretl i.e warns about values above 10. WBOARD has an adjusted R-square of 62,8% and WBOARD30 has a slightly higher, 62,9%.

Results show than when comparing the results from Model 3 (WBOARD) and Model 4 (WBOARD30) the coefficient is less negative for WBOARD30. To be able to understand these results, one must remember that the mean for WBOARD as presented in the descriptive statistics was 22%. This gives interesting insight, meaning that most of the Finnish boards have 20% of women on their boards. These firms are (-) 1,72 not conservative while board with over 30% women are only (-) 0,7 not conservative.

Hence, the results suggest that boards with over 30% of women are more conservative than boards with only 22% which gives preliminary support for the critical mass theory. It also questions the earlier made conclusion about accounting conservatism only being a substitute for corporate governance in Finland since it could also be a complement. However, the endogeneity problem must be taken into account. Meaning, that based on these results one cannot determine if it is the fact that there are more women on the boards that lead to better corporate governance. Alternatively, the effect of more accounting conservatism according to the critical mass theory where women are able to induce more accounting conservatism as such without it necessarily indicating better corporate governance. As the method of analysis is simplified, the hypothesis is not rejected and as such no certain conclusions about the effect of the rate of women on boards is provided.

Table 17 The effect of the rate of women on boards

	<i>Hypothesis</i>	<i>Confirmed</i>
H3c	The more the women on boards, the less negative the relationship	no

10 CONCLUSIONS

The purpose of this thesis is to examine the effect of gender on accounting conservatism in Finnish listed firms. Accounting conservatism is paralleled with a corporate governance mechanism used by boards and thus represents a tool to mitigate the agency problem and thus also influence the decisions made by the manager. Not only is it a tool for shareholders, but all providers of capital such as banks and therefore also the agency problem between debt and equity is referenced in this thesis.

Accounting conservatism can take the non-excluding forms, both through asymmetric timeliness recognition as well as biased valuation. There exists also a distinction between conditional (news dependent) and unconditional (news independent) conservatism in the literature. Moreover, conservatism affects different users in different ways resulting in differences in preference for conservatism depending on the setting of the company (valuation versus contracting). Also, conservatism can be seen either as a complement or substitute for corporate governance. As a result, several different measures have been applied in the literature, resulting in five mostly applied measures. The asymmetric-accruals-to-cash flow model is chosen to measure conditional conservatism and the negative accruals model for unconditional conservatism and thus a robustness analysis based on a vast discussion about the measures held in chapter 4.4.6.

The main argument for why it is relevant to study the Finnish setting, is based on the joint Nordic corporate governance model presented by Lekvall (2014;2018). Distinctive for the Nordic corporate governance is that it is bank-based with usually a high concentration of ownership but a strong minority protection (Lekvall 2014). Hence it represents strongly a contracting setting, compared to the then prior studies.

Derived from the theory on risk-averseness, gender is tied to the strand from the theory on risk-averseness. A vast literature review is presented on the effect of gender on accounting decisions in general as well as the acknowledgement of two prior papers studying the same constructs as this thesis. The effect of gender is researched more specifically through three different avenues of women in high positions. Women as CEO and women as CFO are based on prior literature studying the same strand. The independent, women as a rate of the board, is introduced for the first time to the authors knowledge in the given context. The research model is constructed based on the critical mass theory. The thesis distinguishes between conditional and unconditional conservatism based on which the research model also is built upon.

The data for the research model is gathered from the time-period 2010-2017 on Finnish Stock listed companies. Gender variables are gathered manually, and accounting data is gathered from Thomson Reuters Eikon database. The final sample size is 786 firm-year observations and represents as such a unique dataset which contributes already as such with interesting insights provided in chapter 7.3

The relationship is tested with the fixed-effects model and regressions are run with OLS as is the most common method used to test a relationship. Since the aim with this thesis is to study if gender has an effect on accounting conservatism, i.e. the relationship between these two variables, OLS is deemed acceptable. The Both univariate and multivariate regression models are used to examine the relationship and the results compared to the hypothesis are summarized below.

Table 18 **Summary of genders effect on accounting conservatism**

<i>Hypothesis</i>		<i>Conditional Unconditional</i>		
CEO	H1a & H1b	There is a positive relationship between women as CEO's and accounting conservatism	yes	no
CFO	H2a & H2b	There is a positive relationship between women as CFO's and accounting conservatism	yes	no
BOARD	H3a & H3b	There is a negative relationship between women on boards and accounting conservatism	yes	no
Rate of women on boards	H3c	The more the women on boards, the less negative the relationship	no	no

Female CFOs and CEOs are found to have a positive relationship with conditional accounting conservatism meaning that female CFOs and CEOs lead to more accounting conservatism. The results on the effect of the CFO are argued to be valid and reliable. The results on the effect of the CEO is argued to be statistically significant and thus the hypothesis is confirmed, but the results are analysed not have a high enough validity. However, it can be argued that the results from this thesis contribute on the possible benefits of having women in top positions since the relationship has economic significance that is beneficial to the stakeholders. As such, the thesis contributes internationally by providing results on the effect of the contracting perspective.

This is in accordance with the literature strand on risk-averseness of women. Boards are found to have a negative relationship with conditional accounting conservatism but no reliable proof of the effect of the rate of women on boards are concluded. As such the

critical mass theory cannot be confirmed in the context of accounting conservatism. Also, as the Nordic corporate governance model is known to be very strong. Since the women on boards (more analysed as the effect of generally strong boards) lead to less accounting conservatism, this thesis contributes to the discussion about whether accounting conservatism is a substitute or complement for corporate governance. Results indicate more proof for the substitute perspective.

To summarize, it is concluded that the gender of the CEO and CFO has an increasing effect on conditional conservatism in Finnish stock listed companies during the time-period 2010-2017.

10.1 Limitations

Even though the conclusions from this thesis are in accordance with prior literature the master thesis is subject to limitations.

Firstly, the sample used in the thesis is small compared to prior studies. Especially problematic is the low rate of female CEOs in the sample. As such, no conclusions about the CEO can be drawn and a larger sample is needed to verify the results about female CEOs.

Secondly, since the measures used in this thesis are calculated based on prior literature and accordance with similar research conducted on gender and accounting conservatism, the measures have the risk of having measurement errors (Barua et al 2010). There is also a slight risk that the measures are noisy since both consist of so many components.

Thirdly, even though the research model is conducted based on the same model as Ho et al. (2015) and thus follows the conventions of the literature, e.g. Francis et al. (2015) used a research model built on the gender change from a male to a female CFO. The author of this thesis recognises the strength of that research model compared to the model implemented in this thesis, however the decision was made to not implement that model since the low rates of female in top positions already were so few. As earlier stated also this problem could be mitigated with further manual data gathering.

Fourth, this thesis used only two accounting conservatism measures, one for conditional and one for unconditional. As Wang, Hogartaigh and Zijl (2009) argue, more measures would increase the reliability of the results but as data gathering was extremely time consuming for already these two measures, that was not possible for this thesis.

Finally, as in most studies, the endogeneity problem is present meaning that no affirmative conclusions can be made about if gender affects accounting conservatism or if women are chosen to top positions to induce more accounting conservatism. Lastly, as earlier mentioned the risk of this thesis not controlling for size should be noted and in future research more focus should be put on the size aspect

10.2 Suggestions for future research

The results from this thesis opens up several avenues for future research.

Firstly, the thesis is based on the Finnish setting and a natural progress from this would be to develop the model to include all Nordic countries. It can be argued as in chapter 3.2.2 and 3.2.3 that the rest of the Nordic countries would have similar results as Finland. However, only by conducting research this could be confirmed. It would also be of interesting to see if and in what way results from Norway would have an impact on accounting conservatism as a result of the 40% gender quota. Results from this thesis shows that boards have a negative relationship with accounting conservatism but at the same time, more women on boards induce more accounting conservatism. Hence, the Norwegian setting would put these results to the test. A Nordic setting would also enable a bigger sample size which could confirm the results of this thesis regarding the effect of the gender of the CEO on accounting conservatism.

Secondly, this thesis only includes public companies and a research on private companies would further enhance the understanding of accounting conservatism in the Nordic setting. This thesis provides results that are concluded to support both the complement and substitute perspective of accounting conservatism. As private companies use of corporate governance mechanisms differ in ways and extent compared to public companies, it would be interesting to see if accounting conservatism is more or less prominent compared to public companies as a substitute for corporate governance (Uhlener, Wright and Huse 2007; Habib, Ranasinghe and Huang 2018). If that would be the case, then the role of the genders effect on accounting conservatism would become even greater.

Thirdly, the methodology could be further developed to include several accounting conservatism measures. Also, the question about unconditional conservatism remains unanswered since this thesis provided no significant results for this and would require more attention in the future to be confirmed. If the sample size would be broadened to

include all Nordic countries, as mentioned above, it would also enable the application of the change effect model as more women would be included in the sample.

Finally, this thesis is to the authors knowledge the first that includes the rate of women on boards as an independent variable. As such it provides a benchmark for international studies to test the relationship and that way conclude if the preliminary results from this thesis holds and if they are dependent of the Finnish setting or not.

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APPENDIX 1 COMPANY LIST

<i>Company name</i>		
Affecto Oyj	Kotipizza Group Oyj	Soprano Oyj
Ahlstrom Oyj	Lassila & Tikanoja Oyj	SRV Yhtiöt Oyj
Ahlstrom-Munksjö Oyj	Lehto Group Oyj	Stockmann Oyj Abp
Alma Media Oyj	Lemminkäinen Oyj	Stora Enso Oyj
Amer Sports Oyj	Lännen Tehtaat Oyj	Suominen Oyj
Apetit Plc	Marimekko Oyj	Suominen Yhtymä Oyj
Asiakastieto Group Oyj	Martela Oyj	Takoma Oyj
Aspo Oyj	Metso Oyj	Talenom Oyj
Aspocomp Group Oyj	Metsä Board Oyj	Talentum Oyj
Atria Oyj	M-real Oyj	Tecnotree Oyj
Basware Oyj	Munksjö Oyj	Teleste Oyj
Biohit Oyj	Neste Corporation	Terveystalo Oyj
Biotie Therapies Oyj	Neste Oil Oyj	Tieto Oyj
Bittium Oyj	Nokia Oyj	Tiimari Oyj Abp
Cargotec Oyj	Nokian Renkaat Oyj	Tikkurila Oyj
Caverion Oyj	Nurminen Logistics Oyj	Tokmanni Group Oyj
Cencorp Oyj	Okmetic Oyj	Trainers' House Oyj
Componenta Oyj	Olvi Oyj	Tulikivi Oyj
Comptel Oyj	Oral Hammaslääkärit Oyj	UPM-Kymmene Oyj
Cramo Oyj	Oriola Oyj	Uponor Oyj
Digia Oyj	Oriola-KD Oyj	Vahto Group Plc Oyj
Digitalist Group Oyj	Orion Oyj	Vaisala Oyj
DNA Oyj	Outokumpu Oyj	Valmet Corporation
Dovre Group Plc	Outotec Oyj	Valoe Oyj
Efore Oyj	Panostaja Oyj	Viking Line Abp
Elecster Oyj	Pihlajalinna Oyj	Wulff-Yhtiöt Oyj
Elektrobit Oyj	PKC Group Oyj	Wärtsilä Oyj Abp
Elisa Oyj	Pohjois-Karjalan Kirjapaino Oyj	YIT Oyj
Etteplan Oyj	Ponsse Oyj	Yleiselektroniikka Oyj
Exel Composites Oyj	Proha Oyj	
Finnair Oyj	Pöyry Oyj	
Finnlines Oyj	QPR Software Oyj	
Fiskars Oyj Abp	Qt Group Oyj	
Fortum Oyj	Raisio Oyj	
F-Secure Oyj	Ramirent Oyj	
Glaston Oyj	Rapala VMC Oyj	
HKScan Oyj	Rautaruukki Oyj	
Honkarakenne Oyj	Raute Oyj	
Huhtamäki Oyj	Revenio Group Oyj	
Ilkka-Yhtymä Oyj	Robit Oyj	
Incap Oyj	Rovio Entertainment Oyj	
Innofactor Plc	Ruukki Group Oyj	
Kamux Oyj	Ruukki Group Oyj	
Kemira Oyj	Saga Furs Oyj	
Keskisuomalainen Oyj	Salcomp Oyj	
Kesko Oyj	Sanoma Oyj	
Kesla Oyj	Scanfil plc	
KONE Oyj	Siili Solutions Oyj	
Konecranes Oyj	Solteq Oyj	

APPENDIX 2 DESCRIPTIVE STATISTICS BEFORE WINSORIZING

<i>Variable</i>	Min	Max	Mean	Median	Std.	Variance	Skewness	Kurtosis
ACC	-76,17	3,03	-0,16	-0,04	2,74	7,51	-27,30	757,51
CFO	-3,09	75,28	0,18	0,07	2,71	7,34	27,24	755,57
DCFO	0,00	1,00	0,23	0,00	0,42	0,18	1,26	-0,42
DCFO*CFO	-3,09	0,00	-0,04	0,00	0,15	0,02	-12,34	226,04
NA	-3,20	76,12	0,07	-0,04	2,74	7,51	27,29	757,49
WCEO	0,00	1,00	0,02	0,00	0,15	0,02	6,59	41,53
WCFO	0,00	1,00	0,22	0,00	0,41	0,17	1,36	-0,14
WBOARD	0,00	1,00	0,22	0,20	0,13	0,02	0,42	1,42
WBOARD ₁₀	0,00	1,00	0,12	0,00	0,32	0,10	2,41	3,80
WBOARD ₁₀₃₀	0,00	1,00	0,62	1,00	0,49	0,24	-0,48	-1,77
WBOARD ₃₀	0,00	1,00	0,25	0,00	0,43	0,19	1,15	-0,69
AUDCOM	0,00	1,00	0,57	1,00	0,50	0,25	-0,28	-1,93
CEOAGE	33,00	64,00	50,64	51,00	5,52	30,42	-0,37	-0,16
CFOAGE	31,00	65,00	47,98	48,00	6,27	39,33	0,07	-0,25
SIZE	15,13	24,53	19,56	19,47	1,95	3,79	0,16	-0,74
GROWTH	0,00	26,40	1,11	1,03	1,12	1,26	17,79	363,21
LEV	0,00	2,29	0,16	0,14	0,15	0,02	4,91	55,92
Energy	0,00	1,00	0,01	0,00	0,11	0,01	8,71	74,09
Industrials	0,00	1,00	0,10	0,00	0,29	0,09	2,76	5,63
Materials	0,00	1,00	0,38	0,00	0,49	0,24	0,52	-1,74
Consumer Disc.	0,00	1,00	0,11	0,00	0,32	0,10	2,47	4,09
Consumer Stap.	0,00	1,00	0,07	0,00	0,25	0,06	3,42	9,70
Health Care	0,00	1,00	0,06	0,00	0,24	0,06	3,72	11,87
IT	0,00	1,00	0,20	0,00	0,40	0,16	1,51	0,27
Commun. Servic.	0,00	1,00	0,06	0,00	0,25	0,06	3,54	10,56
Utilities	0,00	1,00	0,01	0,00	0,11	0,01	9,20	82,88
YEAR ₂₀₁₀	0,00	1,00	0,12	0,00	0,33	0,11	2,29	3,27
YEAR ₂₀₁₁	0,00	1,00	0,12	0,00	0,33	0,11	2,29	3,27
YEAR ₂₀₁₂	0,00	1,00	0,12	0,00	0,33	0,11	2,28	3,19
YEAR ₂₀₁₃	0,00	1,00	0,12	0,00	0,33	0,11	2,28	3,19
YEAR ₂₀₁₄	0,00	1,00	0,12	0,00	0,33	0,11	2,29	3,27
YEAR ₂₀₁₅	0,00	1,00	0,13	0,00	0,33	0,11	2,26	3,11
YEAR ₂₀₁₆	0,00	1,00	0,13	0,00	0,33	0,11	2,26	3,11
YEAR ₂₀₁₇	0,00	1,00	0,13	0,00	0,34	0,11	2,23	2,96

N=786