

The relationship between social ties and quality of financial oversight

An analysis of German firms listed on the Frankfurt Stock Exchange

Abstract:

This study investigates the relationship between social ties and quality of financial oversight. Social ties between CEO's, CFO's and the audit committees in Germany were gathered and used in a quantitative analysis. Earnings management and audit effort were used as proxies for quality of financial oversight. The empirical results indicate that friendship ties and advice ties between the CFO and audit committee decreases the level of audit effort. Moreover, friendship ties and advice ties between the audit committee and CEO do not have a significant negative effect on audit effort. Furthermore, the quantitative analysis of discretionary accruals indicates that friendship ties and advice ties between the CEO, CFO and audit committee members are not associated with earnings management.

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Table of contents

1. Introduction	3
2. Literature review	5
3. Methodology.....	9
3.1 Dependent variable.....	9
3.2 Independent variables.....	10
3.3 Control variables	11
3.4 Data sample	11
3.5 Method	15
3.5.1 Model specification	16
4. Results	17
4.1 Accruals analysis.....	17
4.2 Audit fee analysis	24
4.3 Endogeneity.....	28
5. Conclusion.....	30
6. Bibliography.....	32
Appendix 1: Overview of control variables	35
Appendix 2: Pearsons correlation matrix	36

1. Introduction

Corporate scandals such as Enron revealed that independence and integrity of board members and external auditors is something to be aware of (Elson & Gyves, 2003). The failure of internal and external controls encouraged the Sarbanes-Oxley (Sox) act in the U.S., which aims to improve the integrity and independence of board and audit committee members (Elson & Gyves, 2003). The Sox act prohibits auditing firms from receiving large fees and rendering nine non-auditing services. Furthermore, the Sox act and NASDAQ listing standards require the board of directors and audit committee's to consist of independent directors (Elson & Gyves, 2003; Hwang & Kim 2012). The New York Stock Exchange, Amex and NASDAQ classify directors as independent if familiar and financial ties with the Chief Executive Officer (CEO) are absent (Hwang & Kim, 2009). The underlying assumption that motivated the independence requirement is that independent directors are more effective in disciplining management (Bruynseels & Cardinaels, 2014).

Directors comply with the independence requirement issued by the New York Stock Exchange, Amex and NASDAQ if they neither have familial nor financial ties with the CEO (Hwang & Kim, 2009). However, the regulatory independence requirement did not include social ties (Bruynseels & Cardinaels, 2014; Hwang & Kim 2012). Social ties arise when the CEO and a director graduated from the same university, have overlapping prior or current employment, and if the directors are involved in other activities such as leisure clubs (Bruynseels & Cardinaels, 2014). Moreover, Bruynseels & Cardinaels (2014) make a distinction between friendship ties and advice ties. Friendship ties are formed through other activities such as leisure clubs and advice ties are formed through education and overlapping prior employment or current employment (Bruynseels & Cardinaels, 2014). Bruynseels and Cardinaels (2014) use earnings management, audit fees, going-concern issues, restatements of financial statements and internal control deficiencies as proxy variables for financial oversight quality. They find that friendship ties reduce the quality of financial oversight, whereas advice ties do not have a significant effect on the financial oversight quality.

According to La Porta et al (2002) a few legal families exist around the world: Common Law, German/Scandinavian Civil Law and French Civil Law. Legal rules that protect outside investors from appropriation vary widely across these legal families. Common Law provides the strongest investor protection for both creditors and shareholders (La Porta et al, 2002). Countries that employ this legal family are the United States, Great Britain, Australia and

Canada. German/Scandinavian Civil Law falls in between because it provides better legal protection for creditors compared to Common Law, but offers less protection to outside investors. The judicial explanation for the differences is that laws in German/Scandinavian Civil Law countries are made by legislators and not by judges which is the case with Common Law countries (La Porta et al, 2002). For this reason it is not possible for Civil Law judges to go past the statutes and to apply a “smell test”, which is used to determine if insiders are unfair to outside investors. As a result courts and judges do not intervene in Civil Law countries if insiders find a way to expropriate from outsiders that is not explicitly forbidden.

Institutional differences can also be found within U.S. and European accounting standards. Since 1, January, 2005 the European Parliament mandated that every country in the European Union needed to apply International Financial Reporting Standards (IFRS) with regards to financial statements (Cahan & Emanuel, 2011). The U.S. did not converge to IFRS and mandates that U.S. Generally Accepted Accounting Principle (GAAP) need to be applied to financial statements. The fundamental difference between U.S. GAAP and IFRS is that the first is rules-based and the latter is principle based. This implies that companies that have to comply to U.S. GAAP have more precise rules for preparing financial statements (Cahan & Emanuel, 2011).

Institutional differences between the U.S. and the European Union may affect the quality of financial oversight, because insiders from Civil Law countries are only obliged to the law and not to what is fair/unfair for outside shareholders. Hence, insiders from Civil Law countries have more opportunities to reduce the quality of financial oversight within boundaries of the law to mislead or expropriate from outsiders. Furthermore, the differences between U.S. GAAP and IFRS also exaggerate that firms who fall under U.S. jurisdiction have more strict rules that apply to preparing financial statements and that they have less legal opportunities to mislead stakeholders by managing earnings.

The first aim of this study is to investigate the relationship between social ties and quality of financial oversight within the European Union. More specifically, it investigates the effect of social ties within a Civil law country that applies IFRS to financial statements. The reason for choosing a Civil law country is that the existing scientific literature focuses on the United States/Common Law. Moreover, this study investigates social ties, CEO's and CFO's from German firms that are listed on The Frankfurt Stock Exchange.

The second aim of this study is to investigate the effect of social ties between the audit committee and the Chief Financial Officer (CFO). Bruynseels & Cardinaels (2014) focus on social ties between the CEO and audit committee and did not investigate the influence of social

ties between the CFO and audit committee. They conclude that “[a] detailed look at the connections between CFOs and the audit committee can provide insights as to when CFO’s can exercise their influence on the audit committee” (Bruynseels & Cardinaels, 2014 p 142). This motivated the following research question:

“How do social ties between the CEO, CFO and the audit committee influence the quality of financial oversight in a civil law country that applies IFRS?”

The scientific contribution of this study is twofold. The first contribution is that the effect of social ties is investigated in Germany, which is a civil law country. This is a contribution, because the effect of social ties in civil law countries has not been investigated within the scientific literature. The second contribution is that this study takes social ties between the CFO and audit committee into account. This is a contribution because scientific literature currently does not provide insights into the effect of CFO and audit committee social ties.

Finally, the paper contributes to practice by informing shareholders, nominating and governance committees in German on the relationship between social ties and financial oversight quality. Nominating and governance committees in Germany might benefit from this study, because it provides evidence for the influence of different social ties between the CEO, CFO and audit committee on financial oversight quality. This information might be beneficial for nominating committees that nominate CEO’s and CFO’s.

The remainder of this this is structured as follows: In ‘Chapter 2’ a literature review is conducted from which hypothesis are derived, ‘Chapter 3’ elaborates on the research method, ‘Chapter 4’ discusses the empirical results, and in ‘Chapter 5’ a conclusion is drawn.

2. Literature review

An audit committee in the United States consists of board members, is established by the board of directors, and its purpose is to watch over the financial reporting process (Beasley et al, 2009). In the United States the NASDAQ listing standards and the Sox act of 2002 require all audit committee members to be fully independent. The underlying assertion of the regulatory change is that independent directors improve the financial reporting process (Hwang & Kim, 2012).

For German firms it is common to have a two-tier board structure with an executive management board and a non-executive supervisory board (Carl, et al 2015). Within the two-tier structure it is not possible for a director to be on the supervisory board and on the management board at the same time. The management board is accountable for making decisions about day-to-day business, whereas the supervisory board advises, controls and appoints the management board but cannot make decisions about day-to-day business. Moreover, the supervisory board has the authority to establish the audit and nominating committee. German corporate governance codes (GCGC) require that an adequate number of directors on the supervisory board is independent. Independent means that the supervisory board member does not have business or family relations to the company that could result in a conflict of interest. In addition, the GCGC also requires that one supervisory board member qualifies as a financial expert, which means that the board member has expertise in accounting or auditing.

Germany compared with the United States does not have the requirement that all audit committee members need to be independent. However, since June 2016 the 8th company directive of the European Commission is in effect which requires that the majority of the audit committee members is independent (Pricewaterhousecoopers, 2014). Thus, the European Union is converging a supervisory board structure where the majority of directors on the audit committee is independent.

The independence requirement for audit committee members that was issued by the New York Stock Exchange, Amex, NASDAQ, and the 8th company directive, did not include social ties. Research suggests that social ties lead to mutual understanding, which fosters personal connections that can influence the judgement of audit committees (Hwang & Kim, 2012). An audit committee cannot be considered fully independent if social ties are present (Bruynseels & Cardinaels (2014). Furthermore, social ties between the audit committee and the CEO can hamper the functioning of the audit committee (Bruynseels & Cardinaels, 2014). When social ties are present managers engage more in earnings management and audit committees pre-approve lower levels of audit effort (Bruynseels & Cardinaels, 2014). Thus, more social ties lead to a decrease in quality of financial oversight.

Healy & Wahlen (1999) define earnings management as: *“Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to either mislead some stakeholders about the true underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers”* (Healy & Wahlen, 1999 p 368). Thus, earnings management occurs when managers

strategically influence the bottom line of financial statements. It is noted that earnings management is not illegal, however investors might raise questions. According to Braam, et al (2013) there are two ways to manage earnings, these are accruals and real earnings management.

Firstly, managers can engage in accruals earnings management by choosing reporting methods that do not reflect the firms true economic performance (Healy & Wahlen, 1999). Accruals are the differences between net income before extraordinary items and cash flows from operations. Accruals earnings management happens through managing the discretionary accruals. Managers are not able to influence nondiscretionary accruals. Examples of discretionary accruals that are managed

Secondly, managers can engage real-earnings management by deviating from normal business practices. For instance, managers can engage in real earnings management by offering customers a discount at the end of the fiscal year and shipping the orders before the end of the fiscal year. Real earnings management compared to accruals earnings management is considered as more expensive and more difficult to detect (Braam et al, 2013). Furthermore, real earnings management has direct cash flow consequences and a higher likelihood of having a negative impact on the firms long-term economic performance

The CFO has the responsibility to prepare financial reports and after the Sox act was passed he is legally liable for the accuracy of the financial statements (Geiger & North, 2006). Jiang, Petroni and Wang (2010) study the association between earnings management and equity incentives of CEO's and CFO's. They find that CFO's have an independent influence on earnings management and that the equity incentives of CFO's are stronger associated with earnings management, than the equity incentives of CEO's. Given that the CFO has an independent influence on earnings management it is plausible that social ties between the CFO and the audit committee decrease the quality of financial oversight. However, this assertion has been studied within the relevant scientific literature. Given that it is theoretically plausible that social ties between the CEO, CFO and audit committee reduce the quality of financial oversight the following hypothesis is formulated:

H1: As the proportion of social ties between the audit committee, CEO and CFO increases, the audit committee's quality of financial oversight decreases.

Scientific literature makes a distinction between advice networks and friendship networks (Bruynseels & Cardinaels, 2014). Advice networks are characterized by links between specialists that share similar views based on education. Within this network the information flow consists of important work-related matters such as the accuracy of financial statements. Furthermore, it is assumed that advice networks do not foster close friendships (Bruynseels & Cardinaels, 2014).

Friendship networks are formed through charities, leisure clubs, golf clubs and so forth. These networks are characterized by connected individuals who share long-lasting relationships and are situated in the same demographic/social landscapes. Such networks provide more discretion to discuss issues that are too controversial to discuss with persons from advice networks (Bruynseels & Cardinaels, 2014).

A friendship tie between the CEO and the audit committee members leads to less effective monitoring of the financial reporting process (Bruynseels & Cardinaels, 2014). The underlying idea is that Audit committee members are less critical if they share a friendship tie with the CEO. Moreover, social ties formed through friendship networks are positively associated with earnings management and negatively associated with audit effort (Bruynseels & Cardinaels, 2014). The relationship between friendship ties and audit effort is negative, because an increase in the proportion of directors tied through other activities decreases the level of audit effort and increases earnings management (Bruynseels & Cardinaels, 2014). In addition, there is no negative relationship between advice ties, earnings management and audit effort, since ties established through employment and educational ties do not lead to a decrease in earnings management and the level of audit fees (Bruynseels & Cardinaels, 2014).

Given that ties based on friendship networks will decrease the financial oversight quality more than ties based on advice networks the following hypothesis is formulated:

H2: The proportion of social ties based on friendship networks decreases the quality of financial oversight, more than the proportion of social ties based on advice networks.

3. Methodology

This section elaborates on the data sample, independent variables, dependent variables control variables, research method and the model specification.

3.1 Dependent variable

The dependent variable of this study is quality of financial oversight (QFO). Quality of financial oversight is an theoretical construct and two common proxies are used to measure quality of financial oversight. The proxies for quality of financial oversight are earnings management and audit effort.

Earnings management

Earnings management is a proxy for quality of financial oversight and theory suggests that earnings management can be measured with different models (Dechow, Sloan & Sweeney, 1995). The jones model and modified jones model use firm-specific parameters to estimate discretionary accruals which reflects the level of earnings management (Bartov, Gul & Tsui, 2000). Both models relax the assumption of constant nondiscretionary accruals. The modified jones model has the most power in discovering earnings management (Dechow, Sloan & Sweeney, 1995).

The difference between the modified jones model and the regular jones model is that the latter does not incorporates revenues as discretionary accruals (Dechow, Sloan & Sweeney, 1995). Dechow, Sloan and Sweeney (1995) elaborate that the modified jones model builds on the assumption that it is easier to manage earnings via recognition of credit sales, than via recognition of cash sales. Moreover, this assumption leads to an earnings management estimation that is not biased towards zero.

This study uses the cross-sectional variant of the modified jones model to measure earnings management, because it controls for firm-specific factors and estimates discretionary accruals that are not biased towards zero. More specifically, the estimated level of earnings management obtained from the modified jones model will be used as dependent variable in the accruals model. Data necessary for estimating the level of earnings management (DA) is obtained from the Thomson Eikon database.

Audit effort

The second proxy for quality of financial oversight is the level of audit effort. Audit effort is measured by the level of audit fee's (Abott et al, 2003; Bruynseels & Cardinaels, 2014). The relationship between audit fee's and quality of financial oversight is based on the idea that the audit committee is legally responsible for hiring the auditor and determines the level of audit coverage. Moreover, a higher level of audit coverage reflects a higher level of assurance (Abott et al, 2003). In addition, audit committee's without friendship ties and at least one financial expert and independent members are positively associated with the level of audit fee's (Bruynseels & Cardinaels, 2014). Thus, audit committee characteristics are associated with the demand for audit and assurance services.

A natural logarithm of audit fee's (LNAF) is used to measure the level of audit effort, which serves as the dependent variable in the audit fee model. Data necessary for estimating the level of audit fee's is obtained from Thomson Eikon.

3.2 Independent variables

The independent variables are social ties between the CEO, CFO and the audit committee. Social ties is a fixed variable because is not possible to 'undo' a social tie. More specifically, social ties are measured as a ratio (i.e. by dividing the number of socially tied audit committee members with the total number of audit committee members). According to Bruynseels & Cardinaels (2014) it is important to differentiate between three different social ties which can be found in the Board Ex data base.

A previous employment tie (EMPLOY) exist when two directors have the same previous employer. Present employment ties arise when the CEO or CFO and audit committee member share a board membership at an external organization. Moreover, for previous and current employment ties a date restriction is necessary (Bruynseels & Cardinaels, 2014). This implies that the two directors need to have overlapping start and end dates at the company otherwise the employment tie will be excluded. In addition, EMPLOY is measured by dividing the number of audit committee members that have a previous or current employment ties with the total number of audit committee members.

An educational tie (EDUC) is formed when two directors graduated or attended at the same university. For educational ties no date restricting will be imposed, because it is assumed that alumni-network is long-lasting. Moreover, EDUC is measured by dividing the number of audit committee members that have educational ties with the total number of audit committee members.

When two directors are members of attended at the same non-profit association (e.g. leisure club, country club or charity) an other activities tie (OTHER) is established. Board Ex Europe often includes unknown date for other activities of directors. Bruynseels & Cardinaels (2014) emphasize that most membership at clubs, charities and golf clubs last for multiple years. Therefore, no data restriction will be imposed on other activities ties. Furthermore, OTHER is measured by dividing the number of audit committee members that have a other activities tie with the total number of audit committee members.

EDUC, EMPLOY and OTHER were measured separately for the CEO, CFO which led to six social variables (EDUCCEO, EDUCCFO, EMPLOYCEO, EMPLOYCFO, OTHERCEO, OTHERCFO). These social variables are used to determine their individual effects on the dependent variable. Subsequently, the three distinct social ties were aggregated and divided by the total number of audit committee members to create two aggregated social variables (ALLCEOTIES, ALLCFOTIES). The aggregated social variables reflect the total proportion of audit committee members that are connected with the CEO or CFO through education, employment and other activities.

3.3 Control variables

To control for governance factors and economic characteristics that influence quality of financial oversight this study uses 11 common control variables that were used by Bruynseels & Cardinaels (2014) & Klein (2002). The control variables that were used to control for governance factors are: CEO tenure (TENURE), CEO chairmanship (CHAIR), board size (BOARDSIZE), Independent directors (INDEP), number of financial experts on the audit committee (FINEX), number of directors on the audit committee (ACSIZE). Furthermore, common control variables to control for economic characteristics are added, these are: Big four auditor (BIG4), lagged market to book ratio (LAGMTB) and if the company faced consecutive losses in the last two years (LOSS). Finally, to control for industry and year specific factors year (YEAR) and industry dummies (INDUSTRY) are added. Appendix 1 provides an overview of control variables, how they will be measured, and from which source the data is obtained.

3.4 Data sample

Listed firms from the Frankfurt Stock Exchange will be used as data sample. The Frankfurt Stock Exchange is number 10th on the largest stock exchanges (measured by market-capitalization) and encompasses high-cap (DAX), medium-cap (MDAX), low-cap (SDAX),

and technical (TDAX) firms. This study covers all firms listed on the aforementioned Frankfurt Stock Exchange indices in the years 2010 – 2015 under the condition that full Thomson Eikon and Board Ex data could be obtained. Moreover, no databases other than Thomson Eikon and Board Ex were used for this study.

The time period that is chosen for this sample is 2010 – 2015. The reasoning behind this choice is that since June 2016 the 8th company directive of the European Commission is in effect. The 8th company directive requires that the majority of the audit committee members is independent (previously at least one) (Pricewaterhousecoopers, 2014). During this period, German firms were not fully adapted to 8th company directive. However, it would be possible that CEO's of German firms made changes to the audit committee by replacing directors with familial- or financial ties to the CEO with socially tied independent directors to comply with the 8th company directive. Thus, this time period is interesting because it reflects the effect of audit committee social ties in the ex-ante period of the mandatory audit committee reform requirements that were imposed by the 8th company directive.

Consistent with Bruynseels & Cardinaels (2014) this study excludes financial firms (SIC codes 60-67). The reason for excluding financial firms is that their financial statements are different compared to non-financial firms. For example, most financial institutions such as banks usually do not have the balance sheet item 'Net receivables'. Net receivables are necessary for calculating the level of earnings management. For this reason, it is not possible to measure the level of earnings management for financial firms. Financial institutions are also more likely face other earnings management incentives, than other two-digit SIC code groupings (Ayers, Jiang, and Yeung, 2006). Thus, all financial firms were removed from the sample.

Board Ex Europe covers firms from the DAX, MDAX, TDAX and SDAX in the fiscal period 2010 – 2015. This study only covers firms for which complete Thomson Eikon and Board Ex data is available. This implies that firm-years will be excluded from the sample if Board Ex does not report an audit committee, CFO, or CFO at the fiscal year-end. After removing all firm-years without Board Ex and Thomson Eikon data the sample consists of 368 firm-years. These firms-years are used to estimate the accruals and audit fee model, which were mentioned earlier in the dependent variables section. Table 1.2 gives the distribution of the 368 firm-years amongst the accruals model and the audit fee model for the years 2010 - 2015.

Table 1.2 indicates that the accruals model and audit fee model do not contain all 386 firm-years. The audit fee model could not cover all of the firm-years, because some firms did not have full audit fee data. The accruals model could not include all firm-years, because

industries other than services and manufacturing were excluded from the accruals model. The reason for excluding these firms is that the accruals model requires at least 10 observations for each industry (Dechow, Sloan & Sweeny, 1995).

The distribution of the 386 firm-years by two-digit SIC code grouping is given in table 1.2 The accruals model contains a total of 286 firm-years and the audit fee model contains 356 firm-years.

Table 1.1: Firm-years distribution

<u>Year</u>	<u>Accruals Model</u>		<u>Audit Fee Model</u>	
	<u>Observations (n)</u>	<u>Percent</u>	<u>Observations (n)</u>	<u>Percent</u>
2010	39	14%	47	13%
2011	44	15%	55	15%
2012	49	17%	59	17%
2013	50	17%	61	17%

Table 1.2: Firm-years distribution by industry

<u>Two-digit SIC code grouping:</u>		<u>Accruals Model</u>		<u>Audit Fee Model</u>	
		<u>(n)</u>	<u>Percent</u>	<u>(n)</u>	<u>Percent</u>
	Agriculture, forestry and				
01-09	fishing	0	0%	0	0%
10-14	Mining	0	0%	4	1%
15-17	Construction	0	0%	0	0%
20-39	Manufacturing	196	69%	208	58%
	Transportation,				
40-49	Communications, Utilities	0	0%	42	12%
50-51	Wholesale Trade	0	0%	14	4%
52-59	Retail trade	0	0%	2	1%
70-89	Services	90	31%	86	24%
91-99	Public Administration	0	0%	0	0%
Total		286	100%	356	100%

Manufacturing firms encompasses 69% of the accruals model, whereas the services firms cover 31%. Moreover, manufacturing firms cover 58% of the audit fee model, whereas services firms encompass 24%.

In short, table 1.3. indicates that manufacturing and services industries are by far the largest industries for which complete Board Ex and Thomson Eikon data was available. It is noted that the audit fee model covers a larger variety of industries and that two-digit SIC code grouping 01-09, 15-17, and 19-19 are not included in the accruals and audit fee models. The reason for not including those industries is because Board Ex or Thomson Eikon did not cover complete firm-year data.

The Board Ex Europe database covers names of past and present employers, the institutions where board directors graduated and the degree that was obtained. Through analysis of Board Ex 160 CEO and audit committee ties were established for the entire sample. In addition, 79 ties between the CFO and Audit committee were found in Board Ex. Table 1.3 presents an overview of all audit committees that are socially tied to the CEO or CFO.

Table 1.3 shows that 9% of all the audit committee members have a social tie with their CEO. Bruynseels and Cardinaels (2014) find that 17% of all audit committee members have a social tie with their CEO. Thus, it is noted that the proportion of socially tied directors in this dataset is smaller compared with the proportion of socially tied directors that was found by Bruynseels & Cardinaels (2014). Especially, ties established through other activities.

Table 1.3 indicates that 4% of the audit committee members have a social tie with the CFO. Thus, it shows that CFO's compared to CEO's are less connected with the audit committee. More specifically, CFO's compared to CEO's have a smaller proportion of ties with the audit committee established through education, employment and other activities. These findings are consistent with Krishnan, et al (2011) who finds that CFO's compared to CEO's are not as much connected to the board of directors.

The last column of table 1.3 presents the proportion of firms that have a social tie between at least one audit committee member and the CEO or CFO. The column shows that 31% of the firms have at least one social tie between the audit committee and the CEO. In addition, 16% of the firms within the sample have at least one tie between the audit committee and CFO. Moreover, it is noted that the fiscal years 2013 -2015 contain a smaller proportion of socially tied audit committees compared with the fiscal years 2010 – 2012. This implies that German firms did not appoint more socially connected directors in the years 2013 – 2015.

Table 1.3: Socially tied Audit Committees

Year	2010	2011	2012	2013	2014	2015	Total:
Number of audit committee directors:	227	286	295	297	320	324	1749
Proportion of directors with social ties to the CEO (ALLCEOTIES):	10%	10%	11%	9%	8%	7%	9%
Proportion of directors with social ties to the CFO (ALLCFOTIES):	4%	3%	5%	5%	5%	5%	4%
Proportion of directors connected with the CEO through:							
Current or Previous Employment (EMPLOYCEO):	6%	6%	7%	6%	6%	5%	6%
Education (EDUCCEO):	2%	2%	2%	2%	2%	2%	2%
Other activities (OTHERCEO):	2%	2%	2%	1%	1%	1%	1%
Proportion of directors connected with the CFO through:							
Current or Previous Employment (EMPLOYCFO):	1%	2%	3%	3%	3%	3%	2%
Education (EDUCCFO):	2%	1%	2%	1%	2%	1%	1%
Other activities (OTHERCFO):	0.4%	0.3%	0.7%	0.3%	0.3%	0.3%	0.4%
Proportion of audit committees with social ties:							
Proportion of audit committees that have a social tie with the CEO (i.e. ALLCEOTIES = ≥ 1):	40%	38%	32%	25%	28%	24%	31%
Proportion of audit committees that have a social tie with the CFO (i.e. ALLCFOTIES = ≥ 1):	14%	14%	16%	17%	18%	16%	16%

3.5 Method

Multiple entities will be followed through time ($T = 6$ years) which implies that data sample consists of panel data. The motivation for using panel data is that following economic entities through time allows for a deeper understanding. Firstly, because economic entities are not rigid and change over time. Secondly, panel data analysis can be used to determine how large a specific effect is and how it develops over time. Finally, multiple measurements control for random measurement errors. (Rademakers, 2016)

3.5.1 Model specification

$$\begin{aligned} QFO_{it} = & \beta_0 + \beta_1 TIES_{it} + \beta_2 SIZE_{it} + \beta_3 TENURE_{it} + \beta_4 CHAIR_{it} \\ & + \beta_5 INDEP_{it} \beta_6 FINEX_{it} + \beta_7 LN TA_{it} + \beta_8 BIG4_{it} + \beta_9 MTB_{it} \\ & + \beta_{10} LOSS_{it} + \epsilon_{it} \end{aligned}$$

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4. Results

4.1 Accruals analysis

This section gives an explanation of the modified Jones model that was used to estimate discretionary accruals. Subsequently the results of the accruals model are presented and elaborated.

Modified Jones model

The dependent variable of the accruals model is discretionary accruals (DA). The modified Jones model is used to estimate discretionary accruals (DA), which is a proxy for earnings management. Four steps need to be completed to estimate discretionary accruals (DA) for firm *i* in year *t*. The first step of the modified Jones model is to calculate total accruals for firm *i* in year *t* with equation (1):

$$TA_t = \frac{(\Delta CA_t - \Delta CL_t - \Delta Cash_t - Dep_t)}{(A_{t-1})} \quad (1)$$

Where:

TA = Total accruals scaled by lagged assets in year *t*

Δ CA= Change in current assets in year *t*

Δ CL= Change in current liabilities in year *t*

Δ Cash = Change in cash and cash equivalents in year *t*

Δ Dep = Depreciation and amortizations expenses in year *t*

A_{t-1} = Total assets in year *t*-1

According to Cohen, et al (2008) equation (1) can be rewritten into equation (2).

$$TA_{it} = Net\ income - cash\ flow \quad (2)$$

Where:

Net income = Net income before extraordinary items and discontinued operations

Cash flow = Operating Cash flows from continuing operations

The second step is to conduct a regression analysis for each year and two-digit SIC code industry grouping in the sample. Each regression analysis results in obtaining three firm-specific parameters which are used to control for firm- and industry specific factors. The accruals model covers 2 industries and 6 fiscal years. A total of 12 ordinary least squares regressions was conducted, which lead to a total of 36 estimated firm-specific parameters. Moreover, the firm-specific parameters were obtained by regression analysis of model (3).

$$\frac{TA_t}{A_{t-1}} = a_1 \left(\frac{1}{A_{t-1}} \right) + a_2 \left(\frac{\Delta REV_t}{A_{t-1}} \right) + a_3 \left(\frac{PPE_t}{A_{t-1}} \right) + \varepsilon_t \quad (3)$$

Where:

TA = Total accruals in year t

At-1 = Total assets in year t-1

Δ Rev = Change in revenues in year t

PPE = Gross property plant and equipment in year t

$\alpha_1, \alpha_2, \alpha_3$ = Firm-specific parameter in year t

ε = Error term

The third step is fitting the firm-specific parameters into equation (4).

$$\frac{NDA_t}{A_{t-1}} = \alpha_1 \left(\frac{1}{A_{t-1}} \right) + \alpha_2 \left(\frac{\Delta REV_t - \Delta REC_t}{A_{t-1}} \right) + \alpha_3 \left(\frac{PPE_t}{A_{t-1}} \right) \quad (4)$$

Where:

NDA = Nondiscretionary accruals in year t

PPE = Gross property plant and equipment in year t

At-1 = Total assets in year t-1

Δ Rev = Change in revenues in year t

Δ Rev = Change in net receivables in year t

$\alpha_1, \alpha_2, \alpha_3$ = Firm-specific parameters

The final step is to estimate discretionary accruals (DA) with equation (5).

$$DA_t = TA_t - NDA_t \quad (5)$$

Where:

DA = Discretionary accruals in year t

TA = Total accruals scaled by lagged assets in year t

NDA = Nondiscretionary component of total accruals in year t

After obtaining discretionary accruals for each firm-year the accruals model (1) is estimated, which is based on Bruynseels & Cardinaels (2014).

$$\begin{aligned} DA_{it} = & \beta_0 + \beta_1 TIES_{it} + \beta_2 ACSIZE_{it} + \beta_3 CEOTENURE_{it} + \beta_4 CHAIR_{it} \\ & + \beta_5 INDEP_{it} + \beta_6 FINEX_{it} + \beta_7 LNTA_{it} + \beta_8 BIG4_{it} + \beta_9 LAGMTB_{it} \\ & + \beta_{10} LOSS_{it} + \beta_{11} GROWTH + \beta_{13} LTDTA_{it} + \beta_{14} YEAR_{it} \\ & + \beta_{15} INDUSTRY_{it} + \epsilon_{it} \end{aligned} \quad (1)$$

Where:

DA = Discretionary accruals

TIES = ALLCEOTIES, ALLCFOTIES, EDUCCEO, EDUCCFO, EMPLOYCEO, EMPLOYCFO, OTHERCEO and OTHERCFO

ACSIZE = The number of directors on the audit committee

FINEX = The number of audit committee members that classify as a financial expert

CEOTENURE = The number of years that a director is CEO

CHAIR = 1 if the CEO is chairman, 0 if he is not t

BOARDSIZE = The number of individual directors

INDEP = The number of independent board members

LNTA = Natural logarithm of total assets

LTDLA = Long-term debt scaled by lagged total assets

LAGMTB = Market to book ratio in year t-1

GROWTH = Growth in net income

BIG4 = Dummy variable that is 1 if the auditor is one of the BIG-4 firms, 0 if not.

LOSS = Dummy variable that is 1 if a firm faced two consecutive years of negative net income, 0 if not

INDUS = Dummy variable for two-digit SIC code industry grouping.

YEAR = Dummy variable for year

The Pearson Correlation matrix for the accruals model is tabulated and added to appendix 2. The matrix contains three independent variables whose correlation is above 0.6. These variables are LNTA and BOARDSIZE. The correlation between LNTA and BOARDSIZE is 0.70 and is therefore not classified as high (≥ 0.8). Removing LNTA or BOARDSIZE did not lead to a positive change in the p-values, adjusted R-squared and coefficients. Moreover, the correlation between ACSIZE and BOARDSIZE is 0.67. Again, removing one or the other did not lead to a significant improvement of the model. Given that BOARDSIZE, LNTA and ACSIZE are not highly correlated the classical assumption of no perfect collinearity amongst independent variables is not violated and the choice was made to keep the variables in the accruals model. In addition, the p-value of the Breush-Pagan test is 0.00, which implies that heteroskedasticity is absent.

Empirical results

The descriptive statics of the accruals model are presented in table 1.3. The table shows that the average level of discretionary accruals is negative and that the median of discretionary accruals is negative as well. The mean number of CEO ties is 3% and the mean value of CFO ties is 1,5%. Moreover, the average board positions held at firms within the accruals sample is 15.811 and the median value of board positions held is 15. The descriptive statistics of the accruals model show that the average CEO tenure is 6.21 years and the median value of CEO tenure is 5 years. In addition, the statistics indicate that the CEO is chair in 59% of the firms and that 22% of the board of directors is designated as independent. Furthermore, the average number of audit committee members is 4.5 and approximately 10% of the audit committee is

designated as financial expert. 94% of the firms is audited by the Big-4. Finally, the statistics show that, net income growth is 26% on average, lagged book-to-market ratio is 2.3 on average, and that 5% of the firms within the accruals model encountered two years of consecutive losses.

Table 1.4: Descriptive statistics Accruals Model (N=286)

<u>Variable :</u>	<u>Mean :</u>	<u>Median :</u>	<u>St. dev. :</u>
<i>DA</i>	-0.026	-0.02	0.07
<i>ALLCEOTIES</i>	0.031	0.00	0.06
<i>ALLCFOTIES</i>	0.015	0.00	0.04
<i>EDUCCEO</i>	0.024	0.00	0.11
<i>EMPLOYCEO</i>	0.057	0.00	0.12
<i>OTHERCEO</i>	0.013	0.00	0.12
<i>EDUCCFO</i>	0.014	0.00	0.05
<i>EMPLOYCFO</i>	0.027	0.00	0.06
<i>OTHERCFO</i>	0.004	0.00	0.03
<i>BOARDSIZE</i>	15.881	15.00	5.78
<i>INDEP</i>	0.221	0.00	0.73
<i>CHAIR</i>	0.591	1.00	0.49
<i>CEOTENURE</i>	6.717	5.00	6.55
<i>ACSIZE</i>	4.577	4.00	1.70
<i>FINEX</i>	0.103	0.00	0.21
<i>GROWTH</i>	0.264	0.04	8.55
<i>LAGMB</i>	2.307	2.04	1.46
<i>LTDTA</i>	0.167	0.15	0.14
<i>LNTA</i>	14.535	14.40	1.60
<i>BIG 4</i>	0.941	1.00	0.24
<i>LOSS</i>	0.056	0.00	0.23

The accruals model (1) is based on Bruynseels & Cardinaels (2014) and is estimated with two separate models. The difference between the two models is that the first includes the aggregated measures ALLCEOTIES, ALLCFOTIES and the latter includes three distinct social ties EDUC, EMPLOY, OTHERCEO. The two models are used to test *H1* (with model 1) and *H2* (with model 2).

The results of model 1 and model two are presented in table 1.5.

Table 1.5 Accruals model (dependent variable = DA)

	Expected sign	<u>Model 1</u>		<u>Model 2</u>	
		<u>Coefficient</u>	<u>t-value</u>	<u>Coefficient</u>	<u>t-value</u>
Intercept		-0.051	-0.92	-0.0480794	-0.84
<i>ALLCEOTIES</i>	+	0.027	-0.97		
<i>ALLCFOTIES</i>	+	0.001	0.15		
<i>EDUCCEO</i>	+			-0.020	-0.47
<i>EMPLOYCEO</i>	+			-0.072	-1.53
<i>OTHERCEO</i>	+			0.104	1.10
<i>EDUCCFO</i>	+			-0.020	-0.22
<i>EMPLOYCFO</i>	+			0.066	0.84
<i>OTHERCFO</i>	+			-0.080	-0.47
<i>BOARDSIZE</i>	?	0.001	0.39	0.000	0.34
<i>INDEP</i>	-	0.001	0.19	-0.002	-0.23
<i>CHAIR</i>	+	-0.003	-0.43	-0.003	-0.30
<i>CEOTENURE</i>	+	0.002	2.33**	0.002	2.48**
<i>ACSIZE</i>	?	0.001	0.29	0.000	0.08
<i>FINEX</i>	-	0.022	0.96	0.026	1.12
<i>LNTA</i>	-	0.000	-0.05	0.001	0.02
<i>LTDLA</i>	-	-0.084	-2.29**	-0.084	-2.28**
<i>LAGMB</i>	?	0.005	-1.55	-0.005	-1.63
<i>GROWTH</i>	+	0.001	2.29**	0.001	2.28**
<i>LOSS</i>	?	0.001	0.03	-0.001	-0.04
<i>BIG 4</i>	-	0.017	0.68	0.014	0.57
<i>Industry dummy</i>		Yes		Yes	
<i>Year Dummy</i>		Yes		Yes	
<i>Observations (n)</i>		286		286	
<i>Adjusted R-squared</i>		0.07		0.08	

Significant results (two-tailed) are denoted as: * ($p \leq 10\%$), ** ($p \leq 5\%$), and *** ($p \leq 1\%$).

Model 1 indicates that the aggregated social tie measures ALLCEOTIES (Coeff. = 0.027, $p = 0.33$) and ALLCFOTIES (Coeff. = 0.001, $p = 0.88$) do not have a significant positive relationship with earnings management (DA). This means that audit committees with more social ties to the CEO and CFO do not engage more in earnings management.

H1 predicts that as the proportion of social ties between the CEO, CFO and audit committee increases, the financial oversight quality decreases. *H1* is not rejected as a result of finding no significant association between ALLCEOTIES, ALLCFOTIES and earnings management. This finding is consistent with prior literature suggesting that ALLCEOTIES do not have a significant effect on earnings management (Bruynseels and Cardinaels, 2014).

H2 predicts that friendship ties between the CEO, CFO and audit committee decrease the quality of financial oversight more, than advice ties. Surprisingly, model 2 shows that OTHERCEO (Coeff. = 0.104, $p = 0.27$) and OTHERCFO (Coeff. = 0.066, $p = 0.64$) do not have a significant positive relationship with earnings management. *H2* cannot be rejected, because the relationship between OTHERCEO, OTHERCFO and earnings management is not significant. This is not consistent with prior literature that finds that ties established through other activities have a significant and positive relationship with earnings management (Bruynseels & Cardinaels, 2014). A possible explanation for this finding is that the data sample for this study compared with Bruynseels & Cardinaels (2014) contained a very small proportion of friendship ties that could be established through other activities.

Model 1 indicates a significant positive relationship between earnings management and CEOTENURE (Coeff. = 0.002, $p = 0.021$), which is also significant in model 2 ($p = 0.014$). CEO's with longer tenure are therefore associated with a higher level of earnings management. This finding is consistent with prior research suggesting that CEO's manage earnings in their last year of service to increase their final pay-off (Zhang & Ashiq, 2014).

The relationship between LTDLA (Coeff. = -0.084, $p = 0.023$) and earnings management is negative and significant in Model 1. LTDLA (Coeff. = -0.084, $p = 0.024$) in model 2 is also negative and significant. The coefficient of LTDLA indicates that as the amount of long-term debt scaled by lagged total assets increases, earnings management decreases. Prior literature suggests that firms who aggressively manage earnings are associated with lower long-term debt ratios (Carter, 2013). The explanation is that financial institutions such as banks are less likely to issue a loan if a firm restates earnings. Thus, the finding of a negative association between LTDLA and earnings management is in line with prior literature

It is noted that in model 1 GROWTH (Coeff. = 0.001, p = 0.023) has a positive and significant relationship with earnings management. The relationship between GROWTH (Coeff. = 0.001, p = 0.023) and earnings management does not alter in Model 2 in. This finding indicates that as growth in net income increases, earnings management increases. Moreover, this finding is in line with prior literature, which finds that earnings management is higher in firms that experience high growth (AlNajjar & Riahi-Belkaoui 2001; Bruynseels & Cardinaels 2014).

The signs of other corporate governance and control variables in the accruals model were in line with Bruynseels & Cardinaels (2014). These variables will not be discussed in detail, because their relationship with earnings management was not significant.

4.2 Audit fee analysis

The audit fee model (2) is based on Bruynseels & Cardinaels (2014) and is used to estimate the influence of social ties on audit effort.

$$\begin{aligned}
 LNAF_{it} = & \beta_0 + \beta_1 TIES_{it} + \beta_2 ACSIZE_{it} + \beta_3 CEOTENURE_{it} \\
 & + \beta_4 CHAIR_{it} + \beta_5 INDEP_{it} + \beta_6 FINEX_{it} + \beta_7 LNTA_{it} \\
 & + \beta_8 BIG4_{it} + \beta_9 DA_{it} + \beta_{10} LOSS_{it} \\
 & + \beta_{11} GROWTH + \beta_{13} LIQ_{it} + \beta_{14} ROA_{it} + \beta_{15} INVREC_{it} \\
 & + \beta_{16} BM_{it} + \beta_{17} YEAR_{it} + \beta_{18} INDUSTRY_{it} + \epsilon_{it}
 \end{aligned} \tag{2}$$

Where:

LNAF = Natural logarithm of audit fee's

TIES = Social variables as defined in the accruals model

ACSIZE, FINEX, CHAIR, BOARDSIZE, INDEP = corporate governance control variables as defined in the accruals model and methodology

LNTA = Natural logarithm of total assets

DA = Total liabilities scaled by total assets

BM= Common equity scaled by market capitalization

LIQ = Current ratio

INVREC = Total inventories and net receivables scaled by total assets

BIG4 = Dummy variable, 1 if the auditor is one of the BIG-4 firms, 0 if not.

LOSS = Dummy variable, 1 if a firm faced two consecutive years of negative net income, 0 if not for

INDUS = Dummy variable for two-digit SIC code industry grouping.

YEAR = Dummy variable for year

The Pearson correlation matrix for the audit fee model is added to appendix 2. It contains three independent variables whose correlation is ≥ 0.6 . Consistent with the accruals model the independent variables *ACSIZE*, *LNTA* and *BOARDSIZE* show a suspicious correlation. Removing *LNTA* or *BOARDSIZE* led to a negative change in the p-values, adjusted R-squared and expected signs of coefficients. Given that *LNTA*, *ACSIZE* and *BOARDSIZE* are not highly correlated and removing does variables does not lead to significant improvement of the audit fee model the choice was made to keep them in the model. Furthermore, the classical assumption of no perfect collinearity amongst independent variables is not violated, because the correlations are not ≥ 0.8 . In addition, the p-value of the Breush-Pagan test indicated 0.00, which implies that heteroskedasticity is absent.

Empirical results

Descriptive statics of the audit fee model are presented in table 1.6. The statistics show that firms in the audit fee model have a current ratio of 1.9 on average, whereas the return on investment is 5% on average. On average sales grow with is 8% and the book to market ratio is 50%. The remaining descriptive statistics show similar results as the accruals model.

Table 1.6: Descriptive statistics Audit Fee Model (N=286)

<u>Variable</u>	<u>Mean</u>	<u>Median</u>	<u>St. dev.</u>
<i>LNAF</i>	7.408	7.18	1.48
<i>ALLCEOTIES</i>	0.030	0.00	0.12
<i>ALLCFOTIES</i>	0.014	0.00	0.03
<i>EDUCCEO</i>	0.024	0.00	0.10

<i>EMPLOYCEO</i>	0.054	0.00	0.12
<i>OTHERCEO</i>	0.011	0.00	0.04
<i>EDUCCFO</i>	0.014	0.00	0.06
<i>EMPLOYCFO</i>	0.024	0.00	0.08
<i>OTHERCFO</i>	0.003	0.00	0.02
<i>BOARDSIZE</i>	16.882	16.00	6.45
<i>INDEP</i>	0.204	0.00	0.66
<i>CHAIR</i>	0.595	1.00	0.49
<i>CEOTENURE</i>	5.528	4.00	4.79
<i>ACSIZE</i>	4.809	4.00	1.81
<i>FINEX</i>	0.106	0.00	0.19
<i>LNTA</i>	14.935	14.71	1.80
<i>DA</i>	0.561	0.59	0.18
<i>LOSS</i>	0.053	0.00	0.23
<i>GROWTH</i>	0.086	0.06	0.21
<i>LIQ</i>	1.936	1.55	1.53
<i>INVREC</i>	0.305	0.30	0.16
<i>BM</i>	0.569	0.45	0.43
<i>ROA</i>	0.053	0.05	0.07
<i>BIG 4</i>	0.952	1.00	0.21

Two separate models of audit fee model (2) are estimated to test *H1* and *H2*. Model 1 and model 2 are presented in table 1.7. Model 1 shows that *H1* cannot be not rejected for ALLCEOTIES (Coeff. = 0.598, $p = 0.45$), because ALLCEOTIES does not have a significant relationship with the level of audit effort. Surprisingly, model 1 indicates that ALLCFOTIES (Coeff = -3.305, $p = 0.04$) has a significant negative relationship with audit effort. This means that as the amount of all social ties between the audit committee and CFO increases, the level of audit effort decreases. Thus, *H1* is rejected for ALLCFOTIES and it is noted that social ties between the CFO and audit committee decreases the level of audit effort.

Model 2 of the audit fee model shows similar results as model 2 of the accruals model. However, in model 2 of audit fee model weak evidence is found that EMPLOYCFO (Coeff. = -0.003, $p = 0.08$) is associated with a lower level of audit effort. Moreover, the three distinct social ties EDUC (CEO/CFO) and OTHER (CEO/CFO) do not have a significant relationship with audit effort. These findings indicate that *H2* cannot be rejected.

Table 1.7: Audit Fee Model (dependent variable = LNAF)

	<u>Expected sign</u>	<u>Model 1</u>		<u>Model 2</u>	
		<u>Coefficient</u>	<u>t-value</u>	<u>Coefficient</u>	<u>t-value</u>
Intercept		-2.869	-4.43***	-2.809	-4.19***
<i>ALLCEOTIES</i>	-	-0.598	-0.74		
<i>ALLCFOTIES</i>	-	-3.305	-2.06**		
<i>EDUCCEO</i>	-			-0.404	-0.94
<i>EMPLOYCEO</i>	-			-0.003	-0.01
<i>OTHERCEO</i>	-			-0.225	-0.23
<i>EDUCCFO</i>	-			-1.141	-1.45
<i>EMPLOYCFO</i>	-			-1.279	-1.74*
<i>OTHERCFO</i>	-			-1.079	-0.62
<i>BOARDSIZE</i>	?	0.001	0.09	0.001	0.08
<i>INDEP</i>	+	0.165	2.25**	0.177	2.27***
<i>CHAIR</i>	-	-0.056	-0.68	-0.066	-0.78
<i>CEOTENURE</i>	-	0.005	0.58	0.005	0.62
<i>ACSIZE</i>	?	0.134	4.12***	0.135	4.04***
<i>FINEX</i>	+	-0.350	-1.46	-0.371	-1.52
<i>LNTA</i>	+	0.624	15.26***	0.620	14.52***
<i>DA</i>	+	0.324	0.95	0.319	0.92
<i>LOSS</i>	-	0.309	1.57	0.309	1.55
<i>GROWTH</i>	?	-0.205	-1.05	-0.194	-0.98
<i>LIQ</i>	-	0.037	0.99	0.037	0.97
<i>INVREC</i>	+	-0.628	-1.91*	-0.636	-1.90*
<i>BM</i>	-	0.037	0.33	0.024	0.21
<i>ROA</i>	-	-0.354	-0.52	-0.385	-0.56
<i>BIG 4</i>	+	0.404	1.65*	0.419	1.67*
<i>Industry dummy</i>		Yes		Yes	
<i>Year Dummy</i>		Yes		Yes	
<i>Observations (n)</i>		356		356	
<i>Adjusted R-squared</i>		0.76		0.76	

Significant results (two-tailed) are denoted as: * ($p \leq 10\%$), ** ($p \leq 5\%$), and *** ($p \leq 1\%$).

Model 1 shows that there is a significant positive relationship between INDEP (Coeff = 0.165, $p = 0.02$) and audit effort, this relationship is also found in model 2. This finding implies that as the proportion of independent directors increases the level of audit effort also increases. Moreover, the finding is consistent with prior literature suggesting that more independent board members are associated with a higher level of audit effort (Bruynseels & Cardinaels, 2014). Consistent with prior literature LNTA has a significant positive relationship with audit effort in model 1 and in model 2.

Strong evidence is found in model 1 that ACSIZE (Coeff. = 0.134, $p = 0.00$) has a significant positive relationship with audit effort. The relationship between ACSIZE and audit effort does not alter in model two. This implies that as the size of the audit committee increases, the level of audit effort also increases. Prior literature does not find an association between ACSIZE and financial reporting (Hoistash et al, 2009; Bruynseels & Cardinaels, 2014). It is noted that ACSIZE in this study has a positive relationship with audit effort.

Strong evidence is also found for the relationship between LNTA and audit effort in Model 1 (Coeff. = 0.624 $p=0.00$) and model 2 (Coeff. = 0.62, $p=0.00$). This means that as total assets increase, the level of audit effort also increases. This finding is consistent with Bruynseels & Cardinaels (2014) that find that total assets have a positive relationship with audit effort.

The audit fee model provides weak evidence for a positive relationship between BIG4 and audit effort. This implies that firms that are audited by the BIG4 have a higher level of audit effort. This finding is in line with Bruynseels & Cardinaels (2014) that also find a positive and significant relationship between BIG4 and audit effort. Moreover, the undiscussed variables in the audit fee model show similar results as the accruals model. These variables indicate that there is no significant relationship with dependent variable. However, with one exception which is INVREC. In model 1 and model 2 strong evidence for a negative relationship between INVREC and audit effort is found. This finding is not consistent with prior literature where a significant positive association between INVREC and audit effort is found (Bruynseels & Cardinaels, 2014)

4.3 Endogeneity

Bruynseels & Cardinaels (2014) emphasize that the association between social ties and proxy variables of financial oversight raises endogeneity concerns. Endogeneity concerns are raised because it is possible that only directors with social ties are willing to take up a board position in a firm with poor quality of financial oversight. The accruals model and audit fee model are re-estimated with lagged social ties (i.e. ALLCEOTIES, ALLCFOTIES,

EDUCCEO, EDUCCFO, EMPLOYCEO, EMPLOYCFO, OTHERCEO and OTHERCFO) to control for endogeneity. It was not possible to control for endogeneity in the fiscal year 2010, because social tie data was not gathered for 2009. After controlling for endogeneity, it was noticed that the coefficients and t-values of the accruals model did not show a significant change. Thus, endogeneity is not a concern for the accruals model.

After re-estimating the audit fee model with lagged social tie variables, it was noticed that ALLCFOTIES (Coeff. = 0.25, $p = 0.165$) and EMPLOYCFO (Coeff. = 0.04, $p = 0.64$) were no longer significant. This indicates that endogeneity might be a problem for ALLCFOTIES and that socially tied CFO's might be the only persons who are willing to take-up the position of CFO at firms with poor quality of financial oversight. Bruynseels & Cardinaels (2014) also find that friendship ties were only marginally significant after controlling for endogeneity. An alternative explanation is that the exclusion of fiscal year 2010 leads to finding no significant effect of lagged social tie variables ALLCFOTIES and EDUCCFO. This assertion cannot be verified as no social tie data was gathered for the fiscal year 2009.

5. Conclusion

The aim of this study was to investigate the influence of CEO and CFO social ties on quality of financial oversight. This motivated the following research question:

How do social ties between the CEO, CFO and the audit committee influence the quality of financial oversight in a civil law country that applies IFRS?"

Subsequently, a literature review was conducted from which *H1* and *H2* were derived. *H1* and *H2* were designed to give an answer to the research question. *H1* predicts that as the proportion of all social ties between the CEO, CFO and audit committee increases, the quality of financial oversight decreases. In addition, *H2* predicts that friendship ties decrease quality of financial oversight more, than advice ties. Moreover, *H1* and *H2* were tested with two econometric models (i.e. the accruals model and audit fee model).

The accruals model indicated that *H1* could not be rejected for ALLCEOTIES and ALLCFOTIES, because no significant relationship with earnings management was found. Moreover, the accruals model shows that social ties established through friendship and advice networks do not have a significant relationship with earnings management, which led to not rejecting *H2*. In short, this means that social ties between the CEO, CFO and audit committee do not have a significant influence on earnings management.

Surprisingly, the results of the audit fee model show a significant negative relationship between ALLCFOTIES and audit effort. This implies that as the proportion of CFO and audit committee social ties increases, audit effort decreases. Thus, *H1* was rejected for ALLCFOTIES. Furthermore, weak evidence was found that employment ties between the CFO and audit committee decreases audit effort. This means that audit committees connected with the CFO through advice ties are more likely to decrease audit effort. Furthermore, the audit fee model did not show a significant relationship between friendship ties and audit effort. For this reason *H2* was not rejected. Moreover, it is noted that after controlling for endogeneity the aforementioned results were no longer significant.

The answer to the research question is that social ties have other consequences for financial oversight quality in Civil Law countries. For instance, the quantitative analysis shows that friendship ties and advice ties between the CEO and audit committee do not hamper the effectiveness of the audit committee in Germany. To conclude, in Germany the effectiveness of audit committees monitoring is hampered when social ties with the CFO are present.

This study also has its limitations. The first limitation is that only two industries were used for the accruals model. The reason for adding services and manufacturing industries only is that the other industries did not have 10 observations. The accruals model is therefore biased towards manufacturing and services industries. The second limitation is that model that controls for endogeneity did not include fiscal year 2010, because Board Ex data was not gathered for 2009. The final limitation is that the overall sample size (70 firms, 378 firm-years) is considered as small.

Future researchers that want to investigate the effect of social ties in Civil Law countries are advised to merge Germany with other Civil law countries (e.g. Scandinavia) to create a larger data sample. This will probably result in more industry observations and a higher variety of industries that can be included in accruals models.

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Appendix 1: Overview of control variables

<u>Governance factors</u>	<u>Measured with: (Bruynseels & Cardinaels, 2014 p 123)</u>	<u>Variable type</u>	<u>Data source</u>
CEO tenure	Number of years that the CEO has been in office	Ratio	BoardEx
CEO chairmanship	1 if the CEO is on the board, 0 if he is not	Dummy / Binary	BoardEx
Board size	Number of directors that are on the board	Ratio	BoardEx
Audit committee independence	Proportion of independent directors on the board	Ratio	BoardEx
Number of financial experts	Proportion of financial experts within the audit committee	Ratio	BoardEx
Audit committee size	The number of directors on the audit committee	Ratio	BoardEx
<u>Economic characteristics</u>			
Big four auditor	1 for big four auditor, 0 if no big four auditor	Dummy / Binary	BoardEx
Loss	1 if the firm has two years of consecutive losses, 0 if not	Dummy / Binary	Thomson Eikon
Market to book ratio	Shares outstanding multiplied with the stock price	Ratio	Thomson Eikon
<u>Year and industry</u>			
Year	Year dummy	Dummy / Interval	Year dummies
Industry	Industry dummy	Dummy / Categorical	Thomson Eikon

Appendix 2: Pearsons correlation matrix

		Pearson correlation matrix for the audit fee model																						
	ALLCEO TIES	ALLCFO TIES	EDUC CEO	EMPLOY CEO	OTHER CEO	EDUC CFO	EMPLOY CFO	OTHER CFO	BOARD CFO	SIZE CFO	INDEP CFO	CHAIR CFO	CEO TIES	CEO AC	FINEX CFO	LNTA CFO	DA CFO	GROWTH CFO	LTDIA CFO	INVREC CFO	BM CFO	ROA CFO	LOSS CFO	BIG 4 CFO
ALLCEO TIES	1.00																							
ALLCFO TIES	0.18	1.00																						
EDUCCEO	0.61	-0.10	1.00																					
EMPLOYCEO	0.74	0.34	0.00	1.00																				
OTHERCEO	0.32	-0.01	-0.06	0.11	1.00																			
EDUCCFO	-0.12	0.53	-0.06	-0.11	-0.01	1.00																		
EMPLOYCFO	0.31	0.77	-0.07	0.51	-0.04	-0.07	1.00																	
OTHERCFO	-0.02	0.23	-0.03	-0.06	0.14	0.06	-0.04	1.00																
BOARDSIZE	0.03	0.10	-0.15	0.04	0.13	0.06	0.13	0.06	1.00															
INDEP	-0.08	0.34	0.01	-0.10	-0.06	0.12	0.35	-0.04	0.19	1.00														
CEOCHAIR	-0.07	0.09	-0.17	0.06	0.00	0.06	0.03	0.10	0.06	0.07	1.00													
CEOTENURE	0.02	0.13	-0.09	0.11	0.02	0.29	-0.07	0.02	-0.21	0.08	0.08	1.00												
ACSIZE	0.06	0.09	-0.08	0.09	0.18	0.01	0.07	0.13	0.72	-0.13	0.05	-0.22	1.00											
FINEX	-0.03	-0.06	-0.04	-0.01	0.00	-0.02	-0.05	-0.04	-0.09	0.18	-0.17	0.17	-0.08	1.00										
LNTA	-0.06	0.03	-0.23	0.10	0.07	0.06	-0.02	0.07	0.75	-0.14	0.12	-0.12	0.58	0.07	1.00									
DA	-0.10	-0.12	-0.10	-0.03	-0.06	0.07	-0.22	0.10	0.39	-0.29	0.11	-0.15	0.33	-0.21	0.47	1.00								
GROWTH	0.02	-0.06	0.11	-0.07	0.01	-0.04	-0.05	0.04	-0.19	-0.04	-0.03	-0.01	-0.13	0.02	-0.15	-0.04	1.00							
LTDIA	0.02	0.16	0.01	0.04	-0.04	-0.02	0.23	-0.05	-0.32	0.21	-0.17	0.25	-0.25	0.30	-0.43	-0.63	0.08	1.00						
INVREC	-0.22	-0.05	-0.15	-0.11	-0.19	0.02	-0.08	0.07	-0.06	-0.05	0.12	0.05	-0.06	-0.23	-0.09	0.21	0.02	-0.11	1.00					
BM	0.10	0.06	-0.08	0.20	0.02	0.02	0.09	-0.08	0.15	-0.03	0.08	0.05	-0.18	-0.04	-0.09	0.02	-0.14	0.00	0.00	1.00				
ROA	-0.10	-0.10	-0.05	-0.06	-0.11	-0.05	-0.09	0.02	0.03	-0.21	0.05	0.02	0.04	-0.04	-0.02	-0.04	-0.13	0.21	-0.07	0.03	-0.33	1.00		
LOSS	0.01	0.04	-0.01	0.02	0.01	-0.06	0.11	-0.05	-0.06	0.17	0.04	-0.12	-0.07	-0.04	-0.09	-0.01	-0.09	0.05	0.05	0.26	-0.40	0.02	1.00	
BIG 4	-0.12	0.57	0.05	-0.24	0.06	-0.37	-0.42	0.03	0.04	-0.02	-0.08	-0.24	0.06	-0.12	0.12	0.14	0.14	0.01	-0.23	0.15	0.02	-0.03	0.05	1.00
Pearson correlation matrix for the accruals model																								
	ALLCEO TIES	ALLCFO TIES	EDUC CEO	EMPLOY CEO	OTHER CEO	EDUC CFO	EMPLOY CFO	OTHER CFO	BOARD CFO	SIZE CFO	INDEP CFO	CHAIR CFO	CEO TIES	CEO AC	FINEX CFO	LNTA CFO	DA CFO	GROWTH CFO	LTDIA CFO	LAGMB CFO	GROWTH CFO	LOSS CFO	BIG 4 CFO	
ALLCEO TIES	1.00																							
ALLCFO TIES	0.21	1.00																						
EDUCCEO	0.60	-0.09	1.00																					
EMPLOYCEO	0.73	0.37	-0.02	1.00																				
OTHERCEO	0.32	-0.01	-0.06	0.10	1.00																			
EDUCCFO	-0.11	0.50	-0.05	-0.11	-0.01	1.00																		
EMPLOYCFO	0.33	0.79	-0.07	0.53	-0.04	-0.07	1.00																	
OTHERCFO	-0.03	0.24	-0.03	-0.07	0.14	0.05	-0.01	1.00																
BOARDSIZE	0.00	0.16	-0.17	0.14	0.05	-0.01	0.15	-0.04	1.00															
INDEP	-0.08	0.36	0.02	-0.10	-0.06	0.12	0.37	0.04	0.10	1.00														
CEOCHAIR	-0.13	0.14	-0.22	0.01	0.00	0.17	0.01	0.12	-0.01	-0.21	1.00													
CEOTENURE	-0.04	0.03	-0.10	0.04	-0.03	-0.03	0.22	0.11	-0.01	0.10	0.20	1.00												
ACSIZE	0.02	0.13	-0.09	0.03	0.18	0.04	0.04	0.08	0.18	0.67	-0.12	-0.04	0.07	-0.23	1.00									
FINEX	0.00	-0.09	-0.04	0.02	0.01	-0.07	-0.04	-0.04	-0.14	-0.14	-0.04	0.07	-0.08	0.05	0.54	1.00								
LNTA	-0.05	0.06	-0.26	0.12	0.11	-0.07	-0.01	0.13	0.71	-0.13	-0.12	0.20	-0.01	-0.08	0.08	0.10	1.00							
LTDIA	-0.14	-0.03	-0.16	-0.05	-0.01	0.17	-0.14	-0.01	-0.01	0.01	-0.12	0.06	-0.02	-0.02	0.33	0.08	0.10	0.28	1.00					
LAGMB	-0.10	-0.05	0.07	-0.20	-0.03	-0.08	-0.02	0.02	0.00	0.05	-0.01	-0.02	-0.04	-0.04	-0.02	-0.02	-0.02	-0.07	-0.07	1.00				
GROWTH	-0.03	-0.01	-0.04	-0.01	-0.01	0.00	-0.01	0.00	-0.01	0.00	-0.01	0.07	-0.04	-0.04	-0.02	-0.02	-0.02	0.08	0.01	0.00	1.00			
LOSS	0.01	0.06	-0.01	0.01	0.01	-0.06	0.12	-0.03	-0.03	-0.07	0.19	0.01	-0.13	-0.13	-0.10	-0.03	-0.03	-0.14	-0.06	-0.09	0.02	1.00		
BIG 4	-0.13	0.06	0.06	-0.25	0.07	-0.42	-0.42	0.04	0.01	0.19	-0.09	-0.15	0.03	0.12	0.12	0.12	0.14	0.09	-0.04	0.02	0.05	0.06	1.00	