Bachelor Thesis Accountancy

EFFECT OF THE AUDIT COMMITTEE CHAIRMAN'S GENDER ON THE AUDIT FEES

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I. INTRODUCTION

Gender diversity and the role of female leadership have become some of the most researched topics of the last decade. Leading some countries to even legalize a gender quota that requires a certain percentage of the board members to be female (Reddy & Jadhav, 2019). In 2017, Lai et al. found that companies with a gender-diverse audit committee would pay more audit fee then companies without a gender-diverse committee. From their research arose the topic if the gender of the audit committee's chairman alone could bear a significant impact on the audit fee amount. The audit fees are the costs made to the external auditor and can be a measure of how high of audit quality an company wants to receive (Carcello et al., 2002). Previous literature suggests that female leaders tend to be more risk-averse than male leaders (e.g., Martin et al., 2009). Ho (2014) also found that female leaders in accounting tend to be more accounting conservative than their male counterparts. These factors might influence how much chairs from different genders are willing to spend on the audit fee.

This paper will try to research what the influence of the audit committee chairman's gender is on the amount spent on audit fees. This will be examined by looking at the amount of audit fees paid by US companies over the year 2021.

This research question is important because it adds to existing literature by investigating an exploratory area posed in the paper of Lai, Srinidhi, Gul & Tsui. This research is also useful for companies who want to select a chairman with a certain profile and characteristics. The audit committee constitutes a crucial corporate governance mechanism, particularly in the oversight of the financial reporting process (Tanyi & Smith, 2014) while the chairman of the committee carries the biggest responsibility for financial reporting failures and determines essentially the effectiveness of the audit committee (Bromilow & Keller, 2011). This makes it very important for companies to choose the right person for the role.

To examine the hypotheses, a regression analysis will be used with the gender of the chairman as dummy variable with value 0 or 1. Control variables will be added based on the results of the study from Huang (2014). The data will be gathered from the Orbis database, Audit Analytics, Compustat and BoardEX.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Audit committees were first created in North-America after multiple fraud cases around 1950. After some major collapses from equity funding companies, the NYSE, New York Stock Exchange, made it mandatory for American companies to have an audit committee in 1977 (Collier, 1996). The audit committee is a sub-committee of the board of directors that is tasked with all matters related to financial accounting and auditing (Spira, 1999). The audit committee is also positively associated with increasing the corporate governance of a company by increasing the prevention of fraud, making the internal audit better and providing greater independence from management (Turley et al., 2004).

The audit fee is determined by lots of factors and this has been researched for multiple decades now. One of the first studies to investigate auditing and the audit fee factor was Simunic (1980). He would lay the groundwork for the audit fee model and all its influencing factors. Since 1980, a lot more factors influencing audit fee would be added to his model and one of them was gender (Ittonen & Peni, 2011). Gender diversity became a topic widely researched in the last decade and multiple conclusions have been drawn since. Women are less likely to make financial misjudgements due to overconfidence than men are (Barber & Odean, 2001). They also tend to be more ethical and more likely to follow set rules within a company (Baldry, 1987). Furthermore, a group consisting of both males and females would come to higher level of solutions than groups with only males or females (Wood et al., 1985).

Gender can have a significant influence on the amount spend on audit fees. Research shows that this can happen from both the company side and the audit company side. Hardies et al. (2016) suggest that companies are paying a female audit fee premium to an audit company if the auditor was a female. They concluded that this might be happening due to gender differences in knowledge, qualities or just diversity. The female influence on the audit fee was also shown from inside the company. Female CEO's are associated with a higher willingness to pay more for an audit fee than male CEO's. This is likely because female CEO's want a higher audit quality and so they want to spend more on the audit fee (Huang et al., 2014).

The connection between audit fee and audit quality has been established as a positive one. An increase in audit fee would result in an increase in audit quality (Rahmina & Agoes, 2014). There are multiple reasons why an increase in audit fee increases the received audit quality. Firstly, if a company pays large fees to auditors, it increases the efforts made by the respective auditor. This results in a higher audit quality. Spending more on the audit fee also makes the

auditors more economically dependent on the company. This reduces the incentive to deliver bad audit quality as they otherwise could lose an important client (Hoitash et al., 2007).

The reason that female CEO's desire a higher audit quality than male CEO's is explained by the fact that females tend to be more risk-averse than males (Huang et al., 2014). In an experiment conducted by Borghans et al. (2009) they found that women react more favourable to ambiguous situations then men. This means that women are more prone to distrust situations that are not entirely clear to them or do not have complete control over. Female CEO's would be willing to spend more on the audit fees as it grants them more control and knowledge over everything that goes on within the company.

Although the CEO and chairman of the audit committee both fulfil leadership roles, their views on the audit fee might not be the same. Female CEO's increases the amount of audit fee paid while the presence of female audit committee members leads to a reduction of the audit fee paid. Companies with female audit committee members are more likely to have stronger internal control systems so they deem that external auditing is less necessary (Aldamen et al., 2016). The audit company controls for how risky a client is by looking at the internal control systems the client has in their company. Audit companies will increase the demanded audit fee significantly if they deem the internal control systems of a client very weak. This happens because companies with low internal control have a higher risk of containing errors within their audit (Hogan & Wilkins, 2008).

The notion that women desire on average more stronger internal control than men is supported by research from Chen et al.(2016). In their study they found that companies with female audit committee members have less internal control issues compared with companies that only have men in these positions. This effect would already be notable with only the presence of one female member.

The chairman of the audit committee oversees the audit committee and is naturally a part of it. Therefore, the results of this study are expected to be line with the findings by Aldamen et al. (2016). The hypothesis for this paper will be:

H1: Firms with a female chairman of the audit committee pay lowers audit fees than firms with a male chairman.

III.METHOD

This study will use variables found to be significant in the research from Huang (2014) in affecting the audit fees. They will be tested for by using a regression analysis. The data will be gathered from the Orbis database, Audit Analytics, Compustat and BoardEX. The audit fees are from the year 2021.

This leads to the following equation:

$$LnFEES = \alpha + \beta_1 ACCGender + \beta_2 ACCAge + \beta_3 LnAssets + \beta_4 ROA + \beta_5 Complexity + \beta_6 ACSize + \beta_7 CEOGender$$

The dependent variable in this equation is the natural logarithm for the audit fees found on Audit Analytics. The variable of interest is the ACCGENDER. This stands for the gender of the audit committee chairman and will be examined with the use of a dummy variable. Companies with a female chair of the audit committee will have a value of "1" and the value will be "0" if the chair is a man. It can be concluded that female audit committee chairs are associated with lower audit fees if this variable has a negative coefficient.

The control variables chosen for this study are based on the findings done by Huang in 2014. LnAssets stand for the natural logarithm of the assets and is included because having more assets is associated with having a higher audit fee (Raghunandan, 2006). ROA stands for the return on assets and is usually associated with having a negative influence on the amount spent on audit fees (simunic, 1980). The control variable ACSIZE will be used to measure the size of the audit committee from a firm reported on BoardEX. It is found that bigger audit committees results in more money spend on the audit fees (Vafeas & Waegelein, 2007). The firms complexity will be measured by taking the square root of the amount of business segments a company has reported on Compustat (Simunic, 1980). More complex companies are associated with having higher audit fees (Simunic, 1980). The Gender of the CEO was found by Huang (2014) to be positively significant in effecting the audit fees and is also a variable related to gender diversity. A score of "1"will be given if a company has a female CEO and a score of "0" if a company has a male CEO. Lastly, the control variable of the age of the audit committee chairman will be measured for. Young people are more prone to taking risk then older people and therefore this influences the amount they are willing to spend on audit fees (Albert & Duffy, 2012).

Table 1: Discription of used variables in the regression model

Variable	Description
$LnFees$	Natural logarithm of the audit fees
$ACCGender$	Gender of the audit committee chairman, "1" if they are female and "0" if they are male
$LnAssets$	Natural logarithm of the assets
$ACSize$	Number of audit committee members found on BoardEX
ROA	Return-on-assets
$ACCAGE$	Age of the audit committee chairman
Complexity	Measured by taking the square root of the total segments of a company
CEOGender	Gender of the CEO, "1 if they are female and "0" if they are male

IV. SAMPLE SELECTION

Table 2 shows the sample selection process used in this study. The Orbis databased contained data on 16041 listed US companies. Most of these companies had no data on the audit committee chair so 13230 companies were deleted from the initial sample. Companies that had no data on the audit fees in Audit Analytics were also deleted from the sample. Consequently, 134 companies got removed from the sample. Furthermore, companies that had missing values on one or more control variables used in this study got also removed. Firstly, 264 companies were removed for missing data on Compustat. Secondly, 158 companies were removed for missing data on BoardEX. Finally, 112 companies were removed for missing financial data.

Table 2: Sample selection process

Initial sample Orbis database	16041
Less: missing ACC data	(13230)
Less: missing audit fees data	(134)
Less: missing data Compustat	(264)
Less: missing data BoardEX	(158)
Less: missing financial data	(112)
Final sample	2043

V. RESULTS

As the statistics in table 3 show, 26.7 percent of the companies in this study have a female audit committee chairman. This is a lot higher than the percentage of female CEO's which is only 6.9 percent. This indicates that female audit committee chairman are more likely to appear compared to female CEO's. These differences are supported by the research done by Smith et al. in 2007. They concluded that the last big step to become CEO of a company is very difficult for women, especially if they have children. The average age of the audit committee chairman is approximately 64 years old. This is in accordance with the study of Albert & Duffy (2012) as older people tend to be less risk-taking and know more about the company then younger people. This study looks at the audit fees paid in 2021 from all of the companies. The average ROA was 4 percent negative on average for all the companies measured. This could be due to the effects of the corona crisis from 2020 and not all companies having recovered from that yet (De Vito & Gómez, 2020).

Table 3: Descriptive statistics

Variable	**Mean**	**Median**	**Minimum**	**Maximum**	**Std. Deviation**
LnFees	2692619	1411433	9000	59400000	4348613
ACCGender	0.267	0	0	1	0.442
ACCAge	63.57	64	25	92	8.460
LNAssets	8987526	1068441	296743	420549000	35992969
ROA	-4.183	1.687	-82.897	71.575	21.793
Complexity	2.024	2.000	1	5.745	0.815
ACSize	8.430	8.000	1	17	2.766
CEOGender	0.069	0	0	1	0.254

Table 4 presents the univariate analysis of all the variables used in the set. The differences between companies that have a male audit committee chairman and female audit committee chairman were being tested for. The mean audit fees of companies with male ACCs are lower than those of companies with a female ACC in the used sample. These differences are significant as $p \leq 0.05$. A big contributor to that difference might be due to the big differences between the assets means. Firms with male ACCs have lower average assets than firms with female ACCs in the used dataset. Looking at the p-value ($p \geq 0.05$) it cannot be fully said that these differences are highly significant. Assets are known to increase the audit fee (raghunandan, 2006) and the difference in means between male and female ACC firms Assets is around 2.1 million. This could also affect the differences in audit fees averages. Female audit committee chairs are younger than male audit committee chairs in the used sample. This difference in age is found to be highly significant as ($p \leq 0.001$). These difference in age could also influence the audit fees paid as younger people are more likely to want to spend less on the audit fees than older people (Albert & Duffy, 2012). Firms with female ACCs in the dataset have a lower ROA, are more complex, have a smaller committee and less chance of having a female CEO than firms with a male ACC. However, these differences are often very small and are not found to be significant.

Table 4: Univariate Analysis

Variable	**ACC=male (N=1499)**	**ACC=female (N=544)**	**Mean difference**	**T-test**	**p-value**
LnFees	2545528	3075730	530202	-2.442	0.015
ACCAge	64.73	60.63	-4.102	9.724	0.000
LnAssets	8411664	10518103	2106438	-1.171	0.095
ROA	-4.031	-4.522	-0.490	0.442	0.103
Complexity	2.698	2.762	0.0604	-0.414	0.125
ACSize	8.61	8.14	-0.470	0.903	0.352
CEOGender	0.0708	0.0669	-0.00383	0.290	0.562

Table 5 presents the Pearson-correlation test performed on all the variables to test for significant correlation between the variables. As is shown in the table, the depended variable LnFees seems to be positively correlated with the ACCGender. This implies that a female audit committee chair tends to increase the amount spend on audit fees. The value of this correlation is 0.054. All other control variables seem to correlate significantly with the dependant variable of audit fees. Notable is that the variable ROA seems to positively correlate with the amount spend on audit fees while previous literature would suggest that the ROA would have a negative impact on the audit fees (Simunic, 1980). The test variable, ACCGender, only correlates significantly with the audit fees and the age of the audit committee chairman. This suggests that the gender of the audit committee chairman does not influence the other control variables used in this study. The negative correlation with age could be explained by the fact that female ACCs are on average younger than their male counterparts.

Table 5: Pearson correlation-matrix

Variable	**LnFees**	**ACCGender**	**ACCAge**	**LnAssets**	**ROA**	**Complexity**	**ACSize**	**CEOGender**
LnFees	1	0.054*	0.073*	0.753**	0.197**	0.339**	0.208**	0.218*
ACCGender	0.054*	1	-0.214**	0.26	-0.10	-0.06	-0.12	-0.07
ACCAge	0.073*	-0.214**	1	0.66**	0.116**	0.100**	0.040	0.011
LnAssets	0.753**	0.26	0.66**	1	0.112**	0.153**	0.171**	-0.115**
ROA	0.197**	-0.10	0.116**	0.112**	1	0.237**	0.099*	0.189*
Complexity	0.339**	-0.06	0.100**	0.153**	0.237**	1	0.092*	-0.02
ACSize	0.208**	-0.12	0.040	0.171**	0.099*	0.092*	1	0.035
CEOGender	0.218*	-0.07	0.011	-0.115**	-0.189*	-0.02	0.035	1

**= correlation is significant at 0.05 level (2-tailed)*
***= correlation is significant at 0.01 level (2-tailed)*

Table 6 shows the results for the linear regression analysis used to test for the connection between the Audit committee chair gender and the audit fees. The regression model is significant as the F-value= 663.79 with a p-value of 0.000. The Adjusted R^2 of the model is 0.605. This means that the variables used in the model explain for 60.5 percent of the variances observed in the model. The variable researched in this study, ACCGender, is positive and significant with $p = 0.020$. The positive and significant coefficient value of 0.033 indicates that firms with female audit committee chairs spend 3.3 percent more on the audit fees than firms with male audit committee chairs. The same can be said of the of the control variable CEO gender. Firms with female CEO's spend 7.2 percent more on the audit fees then firms with male CEO's. This is line with the findings of Huang(2014).

The control variable 'age of the audit committee chairman' was not found to be significant in the regression model. The control variable ROA turned out to have a positive influence on the amount spend on audit fees. This is against the predicted influence it would have in the study. However, the value is still considered significant in the model. The other control variables showed no strange values and were all significant in their predicted directions.

Table 6: Regression analysis results

Model Variable	**Predicted significane**	**Coefficient**	**p-value**
ACCGender	±	0.033	0.020
ACCAge	+	0.018	0.240
LnAssets	+	0.740	0.000
ROA	-	0.115	0.000
Complexity	+	0.128	0.000
ACSize	+	0.077	0.010
CEOGender	+	0.072	0.015
Model F		663.79	0.000
Adjusted R^2		0.605	

VI. CONCLUSION

In this study, the association between the gender of the audit committee chair and the amount spend on audit fees is investigated. Prior research was not widely available on the subject of the audit committee chairman and its connection with the audit fees. It was found that female audit committee members could reduce the amount spend on audit fees (Aldamen et al., 2016). Based on that earlier finding the hypotheses was created that a female audit committee chairman would also reduce the amount spend on audit fees.

Using a sample of 2043 companies from the Orbis database, a significant positive interaction was found between the amount spend on audit fees and the gender of the audit committee chair. The results from the regression model suggests that a female audit committee chair would increase the amount spend on audit fees. Consequently, the hypotheses of this study will be rejected. It could be that the effect of the gender of the audit committee works similarly like that of the CEO. Previous research found that female CEO's are willing to spend more on the audit fees than male CEO's. However, this is only a suggestion that needs further research to back it up.

This research is subject to multiple limitations. Firstly, this study only looks at one year. The year from this study was 2021 as it had the most recent data on all the companies. Having data on all the variables for the companies over multiple years would generate more accurate results. Secondly, our model only explained roughly 60 percent in variances between values. This means that 40 percent of the variance remains unexplained in this study. A bigger study with more control variables would therefore give more validation to the results. Third, this study contained only listed financial firms, the results might not be applicable to unlisted firms or firms in other sectors. Even with these implications, the study still adds value to the existing literature. Research on the audit committee chairman is lacking so this study helps fill in that literature gap. Furthermore, it also adds to all the previous research done on gender diversity within firms.

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