Bachelor Thesis

Differences in Audit Quality among Big 4 Auditors

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Date: 11-06-2010
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Number of Words: 6361
Abstract

The present study is an empirical study on the differences in audit quality among the Big 4 audit companies in the Netherlands, for the year 2008. Differences are investigated by measuring the discretionary accruals of public listed companies with one of the Big 4 audit companies as their external auditor. Further, this study also investigates the relationship between auditor size and audit quality. Results show no significant difference in quality among the Big 4 auditors. There seem to be some differences in the levels of accruals. However, there is no scientific evidence for them. Results also show no statistical evidence for a clear relationship between auditor size and audit quality.
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Chapter 1: Introduction

All public companies make financial reports. They do this to provide their stakeholders information on how the company is performing. Reasons for making these reports are a result of both laws and market mechanisms. External stakeholders, as investors or shareholders, need financial reports to make company-specific decisions. Shareholders for example have to choose whether they hold on to their stock, or sell them. Banks might use financial statements in decision making whether they will provide loans to a company.

Because stakeholders are dependant on the financial statements, it is important that they receive the right numbers. To assure this, companies make use of external auditors which gives an opinion about the accuracy of these financials. However, not every external auditor is equally skilled in detecting errors in financial statements. This makes it interesting to investigate differences in this quality between auditors or audit firms.

Several previous studies showed that there are indeed differences in audit quality. By investigating accruals, they found that some companies were performing significantly better than others. Studies also discovered some possible auditor characteristics that may influence this performance. An example of these characteristics is auditor size (Francis and Yu, 2009; DeAngelo, 1981b). This factor will influence the expertise of audit firms, which will eventually lead to differences in audit quality.

Most studies on audit companies see Big N audit firms as a homogeneous group. They only look at differences between this group of Big N audit firms and the rest of non-Big N audit firms. Few of the studies examined the differences among the Big 4 audit firms. None of them where looking at the Dutch market. Therefore this study will give an insight on the differences in audit quality of the Big 4 audit firms in the Netherlands (Ernst&Young, KPMG, PricewaterhouseCoopers and Delloite).
This study’s research question will be as follows:

*To what extend is there a difference in the audit quality among the Big 4 audit companies in the Netherlands? (For the year 2008)*

This research will investigate audit quality by measuring accruals. For calculating accruals, this paper will use the financial results of all public listed companies with one of the Big 4 auditors as their external auditor. The accruals provide a good indication about the level of earnings management. Since higher audit quality reduces earnings management, accruals will be used as an estimator for this audit quality. Additional to the accruals measures, audit firms’ size will be investigated to find possible explanations for the different outcomes in audit quality.

Results of this study might be useful to companies for auditor-related decision making. Possible differences in quality outcomes might influence auditor selection choices. Also the Big 4 audit firms themselves may value this research because they get more insight on their performance related to their rivals.

First part of this study exists of studying the existing literature. Auditing and audit quality will be explained on basis of earnings management and accruals. This part also describes some characteristics of audit firms that might influence the audit quality. The hypothesis to be tested will be provided to give an answer to the research question. The second part consists of how the research will be done and how the data will be gathered. The last part will discuss the expected outcomes, the impact of results and possible constraints of the research.
Chapter 2: Background and Hypothesis

2.1 Introduction
This chapter provides several background information on the subjects investigated within this paper. First, the reason for auditing and the process of auditing is explained. Next, the concept of audit quality is further initiated. Third, this chapter explains the relationship between auditor size and audit quality. Finally, all of the scientific background leads to the hypotheses of this paper.

2.2. The Value of Auditing
When looking at the differences in audit quality between firms, the first thing you have to know is what is specifically meant by auditing and audit quality. Auditing is the process of giving an opinion about the accuracy and reliability of a company’s financial report. Because stakeholders of the company have to rely on financial reports in decision making, these reports need to give a true and fair view of the reality. The higher the quality of financial information, the better stakeholders can judge the company’s situation, and the better they can respond to this. The degree of quality of this financial information is called earnings quality.

For preparing financial reports there are some accounting standards, named the Generally Accepted Accounting Principles (GAAP). They provide guidelines for the way of which items have to be reported. Nowadays also the International Financial Reporting Standards (IFRS) are used. These IFRS standards are mandatory for European listed companies.

After the financial reports are internally prepared, the external auditor must give assurance about the reliability of the information in these reports. Important, this does not mean that they have to be completely free of errors. Because company’s financial statements are incredibly large, it is way too costly to examine all numbers. That is why auditors have basic standards for the process of controlling the financial statements. These standards are known as the Generally Accepted Accounting Standards (GAAS).

Within the guidelines of reporting there is still some room left to interpret numbers. That is why people may have different thoughts or opinions about financial issues. For
example, the company being audited and the auditor might have a different opinion about a certain account. Or audit companies might respond differently on certain financial issues. These are all reasons why differences in audit quality arise.

2.3. Audit Quality

Previous papers have used several definitions of audit quality. Velury et al. (2003) described audit quality as ‘the degree to which the underlying economics of a business are reflected in the financial reports’. DeAngelo (1981) defines audit quality as ‘the chance that an auditor detects an error in the accounting system of a company and then afterwards reports about this error.’

Earnings Management

Looking at the definition of audit quality used by Revsine et al. (2005), first some insight is needed on how economics in the financials can be influenced by managers. One of these ways is earnings management by managing reported accruals. As a definition, Healy and Wahlen (1999) state that ‘earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.’ This means that within the guidelines of GAAP or IFRS management influences the way of reporting financials numbers. Managers may choose to account some future expenses or incomes in advance or account these incomes or expenses later on to influence current year’s earnings. Reason for managing earnings according to Becker et al. (1998) is that ‘managers have the incentives to ‘adjust’ earnings to maximize firms and/or managers wealth.’ For example managers use earnings management to avoid small negative earnings and instead report small positive earnings. Another example is that sometimes managers get rewarded for levels of earnings. When the company performs just a little below the level needed for managers to receive a bonus, managing earnings might be a solution to still win this bonus. Another way of earnings management is by ‘adjusting’ earnings to reduce variances in inter-period earnings (Chaney et al. 1996).
Earnings management influences the company’s accruals. By accruals is meant the earnings or expenses which are recognized and reported for a certain period, but which are not yet received or paid in terms of cash flows. Accruals are divided in two parts: normal (non-discretionary) accruals and abnormal (discretionary) accruals. There is always some level of normal accruals existing while not all revenues and costs are received or paid right away. However, discretionary accruals are expenses or revenues which are not normally taken in a certain period and for which the cash is not yet paid or received. Observing the levels of discretionary accruals will provide a good indication on the quality of financial statements.

When reported earnings are influenced it will be more difficult for the companies’ stakeholders to get a clear view on the actual companies’ performance for a particular year. They do not always have the expertise to understand the complexity of the financials, so earnings management may mislead stakeholders about the companies’ financial situation. Therefore, it is up to the external auditor to control the financial statements on whether they give an accurate view on the firms’ real economic performances. The better the quality of an audit, the more earnings management is restricted and the less discretionary accruals exist.

2.4. Auditor Size and Audit Quality
As discussed before, accruals are used as an indicator for accounting quality. The higher companies’ abnormal accruals are, the lower the quality is. However, not only the variances in quality are of interest, but also the reasons for these differences have great importance. Therefore it is important to investigate the possible differences between audit firms that have consequences for auditor quality.

One of these is auditor size. According to Francis et al. (1999) ‘larger offices are expected to have more expertise in detecting and deterring aggressive earnings management behavior’. That is why they could provide a higher level of audit quality. This assumption is supported by the study of Francis and Yu (2009). They argued that audit quality would be higher at larger offices because of larger in-house experience in administering audits. Through this larger amount of in-house experience the auditors
would be more capable in detecting errors in the financial statements of public listed companies.

Another reason, following the study of DeAngelo (1981) is that larger audit companies perform higher audit quality because they have ‘more to lose’ when failing to report misstatements in the clients’ financial records. By ‘more to lose’ is particularly meant the loss of reputation. Because the impact of reputation damages is larger for big audit companies, they have the incentives to put more effort in their audits. This will result in higher audit quality.

When investigating audit quality related to auditor size, most studies make distinctions between Big N and non-Big N audit companies. This is because Big N companies are distinctly larger than more local audit firms. Big N companies are seen as a homogeneous group where no distinction is made between the companies. For example, the studies of Palmrose (1988) and Feroz et al. (1991) which investigated the frequency of audit firms sued, only made the comparison between Big 4 and Non-Big 4 audit firms. No further research was done among the Big 4 audit companies. One of the other studies using the same distinction is this of Becker et al. (1998). This study examined the relationship between audit quality and earnings management. They found that Big N audit firms in the US where performing a higher audit quality than Non-Big N audit companies.

Although most studies make no distinctions among the Big N, there are also some studies which do make this distinction. For example, Francis and Yu (2009) investigated differences in audit quality between the multiple offices of Big 4 accountants as a consequence of office size. In their investigation they used both going-concern reports and accrual measurements as indicator for audit quality. Results showed that larger Big N offices show a higher number of going-concern reports issued. These reports were also more accurate in terms of predicting the probability that a company would get bankrupt in the next period. Furthermore, they showed lower abnormal accrual, which indicates better control on earnings management. When looking at smaller Big 4 offices they found less accuracy of going-concern reports and higher abnormal accruals. Important in this paper is the way of measuring office size. Both total audit fees received and number of
clients are used as an indicator for auditor size. They found that when using total audit fees as a proxy for auditor size, the results were much more robust than when the number of clients was used. Because of this difficulty in measurement choice, it is hard to say how large this effect will actually be.

The study of Francis and Yu (2009) has some similarity with several earlier studies. One of them is the study of DeAngelo (1981b), suggesting that audit quality is based on the market share of an audit firm, where companies with higher market share are better in monitoring clients’ financial statements and have higher expertise comparing to other auditor suppliers. The article of Fung (2005), which is based on this study, also explains differences in audit quality between the Big 5. It showed that PricewaterhouseCoopers and Ernst & Young had a significantly higher number of clients in the US than the other Big 4 companies. When further looking at the audit quality of the audit companies, she found that PWC and E&Y, the two largest companies within the research sample, also provided the highest quality. In addition, the study found that the larger companies PWC and E&Y were asking for a higher fee for their audit report. Possible reason for these results is that larger audit companies have more risks when they are faced with audit failures and are therefore providing a higher audit quality and charge a higher fee.

A third study investigating auditor size differences and quality is the research of Ashbaugh and Warfield (2003). They investigated auditor dominance in the German market. Difference was made between companies with more credit stakeholders and companies with closely held stock by family blockholders. Results showed that companies with credit stakeholders were more likely to hire a dominant auditor. Because credit stakeholders are dependent on the financial information, they demand for a high quality. And since dominant audit companies are associated with higher audit quality (DeAngelo, 1981b), credit stakeholders are demanding such dominant auditor.

Although several studies investigated differences in audit quality among the Big N audit firms, it lacks research on differences in audit quality among the Big 4 audit companies for the Netherlands. This study will provide more information on these differences.
As described above, previous studies suggest that there are differences in audit quality between audit firms. That is why this study will use the following hypothesis:

**Hypothesis 1:** *There are significant differences in audit quality between the Big 4 audit firms.*

Several studies showed the relationship between auditor size and audit quality. It is expected that larger audit companies will provide a higher level of audit quality. This leads to the second hypothesis:

**Hypothesis 2:** *The larger a Big 4 audit firm is the higher the audit quality it will provide.*
Chapter 3: Research Methodology

3.1. Introduction
The main question of this paper is whether there are differences in audit quality between the Big 4 auditors in the Netherlands. And if these differences occur, what are possible reasons for this?

Earnings management is a way for managers to influence the companies’ earnings. Because an auditor controls the accuracy of the financial statements, good audits will reduce the level of earnings management of companies. Therefore, multiple studies use the companies’ level of earnings management to investigate audit quality. To calculate the level of earnings management they use the companies’ accruals (DeAngelo, 1981; Jones, 1991).

First, this chapter discusses the research model which used within this paper. Next, the data sample to be investigated is introduced.

3.2. Research Model
There are several different models for calculating accruals. The study of Dechow et al. (2009) shows several of these models. They all begin with calculating total accruals.

These will be measured as follow:

\[ TA_t = (\Delta CA_t - \Delta CL_t - \Delta Cash_t + \Delta STD_t - Dep_t)/A_{t-1} \]

Where
\[ \Delta CA = \text{change in current assets} \]
\[ \Delta CL = \text{change in current liabilities}. \]
\[ \Delta Cash = \text{change in cash equivalents} \]
\[ \Delta STD = \text{change in debt including current liabilities} \]
\[ \text{Dep} = \text{depreciation and amortization expense} \]
\[ A_{t-1} = \text{lagged total assets} \]

After measuring the total accruals each of the models use a different method for measuring the non-discretionary accruals.
The Healy Model (1985) predicts that systematic earnings management occurs every year, sometimes upward and sometimes downward. The model assumes that non-discretionary accruals are constant over time. Then, the mean total accruals of a large period will represent the non-discretionary accruals.

The DeAngelo Model (1986) is almost the same as the model of Healy. This model uses lagged total accruals as an estimator for non-discretionary accruals. It also assumes that non-discretionary accruals are constant over time. The difference between the two models is that the DeAngelo Model only looks at last years’ total accruals where the Healy Model uses a larger estimation period of several years.

The third model is the Jones Model (1991). Unlike the models of Healy and DeAngelo, this model does not assume that non-discretionary accruals are constant over time. This model controls for the effect of changes in the economic environment on the non-discretionary accruals. It controls for specific changes in revenue and property, plant and equipment.

The Modified Jones Model is almost the same as the previously discussed Jones Model. The only difference is that this modified model also controls for changes in net receivables.

The Industry Model, used by Dechow and Sloan (1991), assumes that changes in non-discretionary accruals are common over the whole industry of a particular firm. It therefore looks at the median of the whole industries’ accruals as a measurement for the firms’ non-discretionary accruals.

Results of the study of Dechow et al. (1995) showed that all models are a reasonable well specified test for accruals. When comparing the multiple methods, the Modified Jones Model seemed to perform a bit more accurate, so a regression analysis would be best for investigating discretionary accruals. The formula of this Modified Jones Model is added in the Appendix A1. However, this paper will use the DeAngelo Model. It is less complex than other models and it needs only a relative short time schedule of financial data. There is no regression needed in this model. Furthermore, it only needs the companies’ total accruals and assets for a period of two years and does not need a lot of extra information like revenues, and net receivables. Although the study of Dechow et al. (1995) concluded that the Modified Jones Model is the most accurate,
differences in the results between the multiple models are very small. The model of DeAngelo still provides a well specified test for accruals.

For measuring the non-discretionary accruals conform the DeAngelo Model, the following formula will be used:

\[ NDA_t = TA_{t-1} \]

Where

\[ NDA_t \] = estimated non-discretionary accruals
\[ TA_{t-1} \] = total accruals scaled by lagged total assets of the year \( t-1 \).

After measuring the total accruals and non-discretionary accruals the discretionary accruals will be calculated. This is done by subtracting the non-discretionary accruals from the years’ total accruals. The outcomes of these discretionary accruals will give an estimation of audit quality. According to the model of DeAngelo (1986), high audit quality comes with discretionary accruals close to zero. Because both results further below zero as results further above zero indicate earnings management and lower audit quality, the results on discretionary accruals will first be transformed into absolute values. Then the mean absolute discretionary accruals will be calculated per Big 4 audit company. This will lead to an accurate way of comparing the accruals.

Next step is to compare the means of the four audit firms by using a One-Way Anova test, which provides a general overview of possible differences in means between the groups of auditors. If the significance level of this test is below 0.05 (5%), this means that there is significant evidence for differences in quality between groups. If the significance level is above 0.05, there is no evidence for saying that there are any differences in accruals between the Big 4 audit firms. After using the One-Way Anova test, an Independent Sample T-test will provide further information on particular differences in means. This test will examine the differences in audit quality by comparing the means for each of the combinations of auditors (e.g. KPMG – Deloitte).

Accruals measures are an accurate way of measuring audit quality. Although several studies also use accounting restatements (Todd and DeZoort, 2007) or going-
concern reports (Francis and Yu, 2009, Ruiz-Barbadillo et al. 2003) to measure for audit quality, this study uses only the accruals to keep this study less complex and clear.

Because previous research suggests that audit quality variances can arise from differences in auditor size, the second part of this research will investigate these differences between the Big 4 in the Netherlands. Several ways are used for measuring audit size.

The study of Francis and Yu (2009) uses total audit fees as an indicator for auditor size. They claimed that audit fees are directly related to engagement hours. Audit firms with higher fees will put more effort in the audits and therefore provide a higher audit quality.

Another study by DeAngelo (1981) used the total numbers of clients of an audit firm, the market share, as an indicator for auditor size. As a reason she says that ‘auditors with a greater number of audit clients have reduced incentives to ‘cheat’ in order to retain any one client, ceteris paribus.’ That is why auditors with a greater number of clients will provide a higher level of audit quality. In this paper the market share by the number of clients will be used to give an indication of auditor size. According to the previous studies, both audit fees as number of clients can be used. However, because of the lack of information on audit fees, this study will only look at the number of clients of an audit company.

When gathered both the results on audit quality and auditor size, differences in audit quality between the Big 4 will be compared to the size of the audit companies. Because four groups have to be compared, it is very complex to make use of a regression analysis. That is why in this paper possible remarkable trends between the size of an audit company and the quality they provide will be investigated without using a regression.

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1 To get more insight, auditor size was also measured in terms of Total Assets of the auditors’ clients, but this lead to the same results.
3.3. Research Sample
For this research the database Worldscope will be used. Within this database the Dutch companies listed on a stock exchange will be chosen. In addition, the sample will further be constraint by selecting only the companies with one of the Big 4 audit firms as their external auditor only. This leads to an initial sample of 273 companies. This data is used to determine the size of the Big 4 auditors. Next, all the financial data needed for computing accruals (DeAngelo, 1986) will be selected for these companies. Because the model used in this paper needs financial information of three different years, data is searched for the years 2006, 2007 and 2008. However, there are many companies for which not all of the required information is available, so the sample is further reduced to the number of companies which do provide enough information to calculate the accruals. All these constraints lead to an ending sample consisting of 95 firms.
Chapter 4: Data Analysis

4.1. Introduction
This chapter uses the research model introduced in chapter 3 to analyze the gathered data. With use of a One-Way Anova Test and an Independent Sample T-test, the hypotheses of chapter 2 are tested. Interpretations and assumptions are made about the multiple outcomes.

4.2. Audit Quality Differences:
Analyzing the sample data leads to the following descriptives:

Tabel 1: Descriptives.

<table>
<thead>
<tr>
<th></th>
<th>Deloitte</th>
<th>Ernst&amp;Young</th>
<th>KPMG</th>
<th>PWC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td># Clients within sample</td>
<td>14</td>
<td>24</td>
<td>31</td>
<td>26</td>
<td>95</td>
</tr>
<tr>
<td>Accruals:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>.104405116</td>
<td>.080963516</td>
<td>.198315923</td>
<td>.22207481</td>
<td>.161331936</td>
</tr>
<tr>
<td>Median</td>
<td>.068770551</td>
<td>.048358227</td>
<td>.059809916</td>
<td>.052565506</td>
<td>.057714569</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>.1189535547</td>
<td>.0687511702</td>
<td>.3160328670</td>
<td>.6144517381</td>
<td>.3728336316</td>
</tr>
<tr>
<td>Variance</td>
<td>.014</td>
<td>.005</td>
<td>.100</td>
<td>.378</td>
<td>.139</td>
</tr>
<tr>
<td>Minimum</td>
<td>.0025654</td>
<td>.0046498</td>
<td>.0001705</td>
<td>.0009493</td>
<td>.0001705</td>
</tr>
<tr>
<td>Maximum</td>
<td>.4507819</td>
<td>.2673070</td>
<td>1.2965252</td>
<td>2.9836466</td>
<td>2.9836466</td>
</tr>
</tbody>
</table>

Within the sample of 95 firms, the companies are quite well spread across the Big 4 audit firms. 14 of the companies (15%) are externally audited by Deloitte, 24 (25%) by Ernst & Young, 31 (33%) by KPMG and 26 (27%) by PriceWaterhouseCoopers.

Tabel 1 shows that mean discretionary accruals are the lowest for E&Y (0.081), which suggest that E&Y provides the highest audit quality. The highest accruals take place in companies audited by PWC. Their mean of 0.222 is a much higher than the overall mean of 0.161. The audit firms Deloitte and KPMG are scoring 0.104 and 0.198.
First impression indicates that there are differences in discretionary accruals among the Big 4 audit firms. To test for these differences, a One-Way Anova Test compares the means of the different audit firms. In this way, hypothesis 1 will statistically be tested. Results are shown in the table below:

### Table 2: Differences in Absolute Mean Discretionary Accruals between the Big 4 Audit Firms.

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sign.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>0.339</td>
<td>3</td>
<td>0.113</td>
<td>.807</td>
</tr>
<tr>
<td>Within Groups</td>
<td>12.728</td>
<td>91</td>
<td>0.140</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>13.066</td>
<td>94</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The significance level of 0.493 is far above the level of 0.05 which says that the Null-hypothesis of equal means cannot be rejected. This means that there is no significant prove for differences in audit quality between the Big 4 audit firms. Therefore, the first hypothesis of this paper suggesting differences in audit quality among the Big 4 audit companies can not be accepted.

In the Appendix A2 is shown the results on further research comparing means for combinations of audit firms. The independent sample t-tests also show no significant differences in audit quality between the Big 4 auditors in the Netherlands. The only companies that almost have significant audit quality differences are Ernst&Young and KPMG. They show a significance level of 0.053, which is near the needed level of 0.05. Using a larger sample for this research might lead to results that will actually show significant differences. Further outcomes of the independent t-test are added to the Appendix.
4.3. Auditor Size and Audit Quality

Although there is no scientific evidence of different audit quality among the Big 4 audit firms, auditor size and its relation towards audit quality will be investigated. Table 3 below shows an overview of the Big 4 audit firms with their number of clients and mean discretionary accruals. In Table 4, also a ranking in size and quality is included.

<table>
<thead>
<tr>
<th>Auditor:</th>
<th># Clients within the Sample:</th>
<th>Share of Audit Firms within the Sample (%)</th>
<th>Mean Discretionary Accruals:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deloitte</td>
<td>43</td>
<td>16%</td>
<td>.104405116</td>
</tr>
<tr>
<td>Ernst &amp; Young</td>
<td>86</td>
<td>32%</td>
<td>.080963516</td>
</tr>
<tr>
<td>KPMG</td>
<td>74</td>
<td>27%</td>
<td>.198315923</td>
</tr>
<tr>
<td>PriceWaterhouseCoopers</td>
<td>70</td>
<td>26%</td>
<td>.222074781</td>
</tr>
<tr>
<td>Total:</td>
<td>273</td>
<td>100%</td>
<td>.161331936</td>
</tr>
</tbody>
</table>

Table 4: Ranking of Auditor Size and Auditor Quality.

<table>
<thead>
<tr>
<th>Audit Company:</th>
<th>Auditor Size*:</th>
<th>Audit Quality*:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ernst &amp; Young</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>KPMG</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>PriceWaterhouseCoopers</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Deloitte</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

(*Ranking from largest to smallest auditor size and from highest to lowest audit quality)

The study of DeAngelo(1981b) suggests that larger audit firms provide a higher level of audit quality than smaller audit firms. However, results of table 3 and 4 find no statistical evidence for the theory of DeAngelo. Deloitte, with 16% is far the smallest company within the sample, is performing the second highest audit quality of 0.104. But, when looking at table 4, the rankings 1-1, 2-3 and 3-4 raise the assumption that there possibly is a relationship between auditor size and audit quality. However, the lack of statistical evidence makes it impossible to confirm this relationship.
Based on table 3 and 4, hypothesis 2 cannot be accepted. Nevertheless, the labels of table 4 assume that there might be a certain relationship between auditor size and audit quality. A multivariate test could provide more statistical evidence on the actual influence of auditor size on audit quality. It could also control for variables like Sales or Total Assets of the auditors’ clients.
Chapter 5: Conclusions

5.1. Introduction
This chapter provides the overall conclusion of this paper. Based on the results of chapter 4 an answer is given to the research question. Finally, limitations of this study are discussed.

5.2. Model Analysis
This study investigates the differences in audit quality among the Big 4 audit firms in the Netherlands. The model of DeAngelo is used to calculate the discretionary accruals, which are an important estimator for audit quality.

Results show no significant differences in audit quality among Deloitte, Ernst & Young, KPMG and PriceWaterhouseCoopers. Although it seems that there are some variances in the level of accruals, none of the significance levels arise the required confidence level of 95%. Because of the high significance level of 0.493, it can be concluded that there are no statistical significant differences in quality among the Big 4 audit companies. That is why the first hypothesis of this paper is rejected.

There is also no prove for the hypothesis that larger Big 4 audit firms will provide a higher audit quality. Although there seems to be a link between the size of an audit company and the quality it provides, because the results of Deloitte are contrary to the predicted relationship and because of the lack of statistical evidence it is not possible to confirm this link. Therefore it is not possible to accept the second hypothesis of this paper.

With the conclusions on the two hypotheses of this paper it is possible to give an answer to the research question. Question was: ‘to what extend is there a difference in the audit quality among Big 4 audit companies in the Netherlands?’ Conclusion of this paper is that there seem to be some differences in accrual levels among the Big 4 audit firms. However, none of them are significant. That is why, although some studies did find quality differences among the Big 4 audit companies in varying countries, this cannot yet statistically be proven for the Netherlands.
5.3. Limitations

A limitation of this paper is the sample size. The initial sample of this study consisted of 273 companies. But because of the lack of financial information for many of the companies, this sample is reduced to just 95 firms. This can be an explanation why the statistical outcomes do not provide significant evidence on audit quality differences among Big 4 audit companies. Further research on the audit quality differences of the Big 4 audit firms in the Netherlands might provide more complete information on the companies’ financial performances. By using additional databases, the size of the sample can be increased. This may lead to more accurate results on these differences.

Another limitation of this study is the measurement of audit quality. Here, audit quality is measured by accruals following the DeAngelo model which is a very rough model. The Modified Jones Model might provide more accuracy. And besides accruals, there are also other ways to measure audit quality, like the number of companies’ accounting restatements or going concern reports.

Third limitation is that this study does not use any statistical test for comparing auditor size to audit quality and it only controls audit quality for auditor size. There are some other variables that might influence audit quality like for example auditor tenure or industry specialization. Like described in chapter 4, it is also possibility to create more accuracy by making a more statistical comparison between auditor size and audit quality. This is possible by using a multivariate analysis. Additional, other possible influences on audit quality could be added to the multivariate regression. In this ways, there will be much more accurate information about the audit quality differences.
Appendix

**A1: Modified Jones Model:**

\[ NDAt = \alpha_1(1/A_{t-1}) + \alpha_2(\Delta\text{REV}_t - \Delta\text{REC}_t) + \alpha_3(\text{PPE}_t) \]

Where:

\( A_{t-1} = \) Lagged Total Assets.
\( \Delta\text{REV}_t = \) Change in Net Revenues in the year t.
\( \Delta\text{REC}_t = \) Change in Net Receivables in the year t.
\( \text{PPE}_t = \) Property, Plant and Equipment for the year t.

**A2: Independent Sample T-tests.**

*Deloitte – E&Y:*

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<tr>
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*Deloitte – KPMG:*

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**Deloitte – PWC:**

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**E&Y – KPMG:**

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**KPMG – PWC:**

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References


- Fung, Yu Kit; 2005. Evidence of audit quality differences among big five auditors: an empirical study. *Dept. of Accountancy, City University of Hong Kong*.


