Does accounting quality change following a switch from Dutch GAAP to IFRS? Evidence from the Netherlands

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Statement of Originality

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I declare that the text and the work presented in this document is original and that no sources other than those mentioned in the text and its references have been used in creating it.

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Abstract

Since 1 January 2005 it is obligatory for EU stock listed companies to base their financial reporting on the International Financial Reporting Standards (IFRS). No research is done in the Netherlands that investigates whether the obligatory adoption of IFRS improved the accounting quality. There are reasons to believe that the results in the Netherlands might differ with results in other European countries. This study examines whether the accounting quality in the Netherlands improved after the obligatory adoption of IFRS. Accounting quality will be measured by the amount of earnings management. Earnings management will be measured by earnings smoothing and managing earnings towards a target. Three metrics will be used for earnings smoothing: the variability of the change in net income, the ratio of the variability of the change in net income to the variability of the change in operating cash flows and finally the correlation between accruals and cash flows. One metric is used for managing earnings towards a target: the frequency of small positive net income. The sample consists of firms applying Dutch GAAP between 1997-2011 and firms applying IFRS between 2005-2011. The results show an decrease in earnings smoothing for firms applying IFRS and an increase of managing earnings towards a target. These results suggest that there is no increase in accounting quality neither an increase. Since the results are not uniform, further investigation regarding this topic is needed.
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1. Introduction

1.1 Background
There are several studies done in the past that looked whether the adoption of IFRS resulted in higher accounting quality in different countries.

Paananen and Lin (2008) for example looked for the improvement of accounting quality in Germany as a result of the adoption of IFRS. They conclude that the obligatory adoption of IFRS has caused a decrease in the quality of financial reporting (Paananen et al., 2008, p.54).

In addition, Lin, Riccardi and Wang (2012) also examined the influence of the obligatory adoption of IFRS on accounting quality in Germany. Just like Paananen and Lin they conclude that a switch from U.S. GAAP to IFRS could reduce accounting quality (Lin et al., 2012, p.656).

Moreover, Chen, Tang, Jiang and Lin (2010) compared the accounting quality of publicly listed companies in 15 member states of the European Union before and after the full adoption of IFRS in 2015. In contrary to research from Paananen and Lin for example, they conclude that the majority of accounting quality improved after the obligatory adoption of IFRS (Chen et al., 2010, p. 272).

Paglietti (2009) studies the impact of the mandatory IFRS adoption in a typical code-law country such as Italy. It aims to investigate how and whether accounting information quality changes following IFRS implementation. The focus is on value relevance which is considered as one of the basic attributes on accounting quality. Paglietti finds an increase in value relevance, therefore he concludes that the accounting quality in Italy increased due to the obligatory adoption of IFRS (Paglietti, 2009, p.10).

Barth, Landsman, Lang and Williams (2012) examine whether application of IFRS by non-US firms result in accounting amounts comparable to those resulting from application of US GAAP by US firms. They conclude that the adoption of IFRS has resulted in an increase in comparability of accounting amounts, but they do not conclude whether the adoption of IFRS resulted in worsened or improved accounting quality (Barth et al., 2012, p.90).

The results of the existing studies are not the same. So the results on the accounting quality due to IFRS in Germany might differ for example with the results in the Netherlands.
1.2 Research question:

Prior literature shows us the impact of IFRS on accounting quality in different countries and in different ways. Yet similar studies have not been done in the Netherlands. So I would like to add the influence IFRS had on the accounting quality in the Netherlands to the existing literature. The research question of my thesis is:

Has the accounting quality in the Netherlands improved after the adoption of IFRS?

1.3 Motivation:

Most countries have based their financial reporting on the Generally Accepted Accounting Principles (GAAP). But since 1 January 2005 it is obligatory for EU stock listed companies to base their financial reporting on the International Financial Reporting Standards (IFRS). This makes sense for every European country.

There are some changes between IFRS and the GAAP. A major difference between GAAP and IFRS is that GAAP is rule-based whereas IFRS is principle-based (Lin et al., 2012, p.653). With a principle based framework there is the potential for different interpretations of similar transactions. A principle based system can clarify areas that are unclear, this could result in less exceptions than a rules-based system. One specific difference between GAAP and IFRS is for example the treatment of intangible assets. Acquired intangible assets under GAAP are recognized at fair value, while under IFRS it is only recognized if the asset will have a future economic benefit and has measured reliability. Examples of intangible assets are advertising costs and Research and Development costs.

As said before it, every EU stock listed company had to change their financial reporting standard into IFRS since the first of January 2005. So this rule also influenced EU stock listed companies in the Netherlands. In the Netherlands most firms used the Dutch Generally Accepted Accounting Principles (Dutch GAAP). The Dutch GAAP was already quite comparable with IFRS, but there were some differences between the Dutch GAAP and IFRS as well. For example in the inventory valuation. Following the Dutch GAAP it was allowed to use the last-in-first-out (LIFO) method, but following IFRS it is prohibited.

The main goal of the introduction of IFRS is the improvement of accounting quality. Accounting quality is important for several reasons. One example of the importance of accounting quality is because it facilitates the efficient capital allocation in the economy.
Accounting needs to help stockholders in contract choice. So that they make a good investment decision. Therefore it is important that these accounting information has a good quality. High quality accounting information is reliable and relevant. This means that the information is verifiable and that it influences decision makers.

By answering my research question, I hope to better inform borrowers, lenders and investors in the Netherlands by giving them a better view about the extent of accounting quality after the adoption of IFRS.
2. Literature review

2.1 Differences between the Netherlands and other countries

As mentioned before, yet there is no research done in the Netherlands that investigates whether the obligatory adoption of IFRS improved the accounting quality. There are reasons to believe that the results in the Netherlands might be different to the results in other European countries. Firms in the Netherlands deal with other circumstances than for example Germany or Italy. Country specific factors are important in the research about the influence of the obligatory adoption of IFRS on accounting quality.

2.1.1 Investor protection

First of all, The Netherlands is a French Civil Law country (La Porta et al., 1998). The adoption of IFRS in Germany for example has been investigated through Paananen (2008) and Lin et al. (2012) Germany is a German Civil Law Country, which differs from a French Civil Law Country. They both have their own legal systems and rules. This could influence the state of transparency in financial reporting. Another difference between a French and a German Civil Country is about the investor protection. Results from the research of Leuz et al. show that investor protection explains a substantial portion (39%) of the variation in earnings management (2003, p.521). Earnings management is negatively correlated with accounting quality. So investor protection has influence on the accounting quality.

La Porta et al. state that the level of investor protection depends on the legal origin of a country (1998). The legal origin of a country can be divided in two categories: code law and common law countries (La Porta, 1998, p.1115). Common law, which is English in origin, and civil (code) law, which derives from Roman law. The common law is formed by judges who have to resolve specific disputes (La Porta, 1998, p.1119). This could be seen as a more principle based legal system. In contrary, the civil law uses statutes and comprehensive codes as a primary means of ordering legal material (La Porta, 1998, p.1118). This could be seen as a more rule based legal system. Within the civil tradition, there are only three major families that modern commercial laws originate from: German, French and Scandinavian (La Porta, 1998, p.1115). The investor protection is lower for a French Civil Law Country compared with German Civil Law Country. According to La Porta et al. is the Netherlands a French Civil law country (1998, p.1118). So this would mean that the Netherlands have a lower level of investor protection compared with Germany for example. However, the introduction of the Code Tabaksblat in December 2004 changed this. The Code Tabaksblat has a comply or
explain policy, this means that it is not obliged to comply the Code, but it is obliged to explain your reason when you didn’t comply. Due to a higher corporate governance level, the investor protection in the Netherlands significantly increased. It resulted in even a higher investor protection than German Civil law countries. The increase in investor protection makes the Netherlands different from other French Civil law countries. So results of other studies can’t be generalized in the Netherlands. It makes sense to examine whether the obligatory adoption of IFRS lead to higher accounting quality in the Netherlands, because the investor protection influences accounting quality.

2.1.2 Legal enforcement
Besides the Netherlands differs from other French civil countries in shareholder protection, there is another difference. Leuz et al. conclude in their research that law enforcement is negatively associated with earnings management (2003, p.526). This means that countries with strong law enforcement face lower levels of earnings management. Lower levels of earnings management conforms with higher accounting quality. La Porta et al. state that French Civil Law countries have the lowest level of law enforcement (1998, p.1116). However, the results on page 1142 and 1143 of La Porta et al. (1998) show that the Netherlands is an exception. The legal enforcement level in the Netherlands is high. So this is in contrary with other French Civil Law countries and therefore results of previous studies can’t be generalized for the Netherlands.

2.1.3 Dutch GAAP
The third argument for the originality of this research setting is about the used standard before the obligatory adoption of IFRS. In the Netherlands most firms used the Dutch Generally Accepted Accounting Principles. The Dutch GAAP was quite comparable with IFRS. This was not the case in other countries. Haller states in his article (2002) that standards used before the adoption of IFRS in the Netherlands, UK and Ireland have the most in common with IFRS. So these three countries used already a high quality standard before the obligatory introduction of IFRS. This makes the situation in the Netherlands unique and not comparable with other countries. Because the Dutch GAAP and IFRS barely differ, it is possible that the accounting quality also barely improved compared with other countries.

In summary, there are three reasons to believe that the results in the Netherlands might be different to the results in other European countries: (1) due to the Code Tabaksblat the investor protection increased in the Netherlands, which might result in higher accounting
quality, (2) the legal enforcement level in the Netherlands is high, which might result in higher accounting quality and (3) the Dutch GAAP was quite comparable with IFRS, which might result in barely improved accounting quality.

2.2 Accounting quality

The firms’ financial reports are a central way by which companies manage their institutional impression (Davidson et al., 2004). Accounting quality is an elusive concept, especially in view of the multiple uses of financial reports (Chen et al., 2010, p.222). Accounting quality is also a function of firms’ reporting incentives created by market and political factors (Paglietti, 2009, p.10). Chen, Tang, Jiang and Lin define accounting quality as the extent to which the financial statement information reflects the underlying economic situation (2010, p.222). As the underlying economic situation can not be directly observed, it can be operationalized by using different indicators such as: earnings management, timely loss recognition and value relevance (Chen et al., 2010; Barth et al., 2008; Paananen et al., 2008). Earnings management and timely loss recognition focus primarily on earnings quality, where value relevance focuses on accounting amounts. This research focuses on earnings management and therefore on earnings quality.

2.3 Earnings management

In modern corporations ownership is typically separated from control (Hadani et al., 2010, p.1353). Therefore investors rely on the information provided by the firms’ management, and thus, on the financial statements (Hadani et al., 2010, p.1353). Accounting principles often require the exercise of business judgment. For example in choosing a particular accounting method with the corresponding estimations that have to be made. Because of this business judgment, managers have the opportunity to shape financial reports in their own interests (Hadani et al., 2010, p.1353). Another way to manage earnings is to manipulate accruals. There are two types of accruals: discretionary accruals and non-discretionary accruals. Discretionary can be income-increasing and income-decreasing (Frankel et al., 2002, p.72). Discretionary accruals can be used by management to maximize their own gain (Frankel et al., 2002, p.72). Earnings management involves deliberate actions taken by management to meet earnings objectives. So earnings management reflect the desires of management rather than the underlying economic situation (Hadani et al., 2010, p.1353). By misleading investors, earnings management could lead to temporary resource misallocation and might result in an
increased cost of capital, decline in stock prices and increased firm risk (Hadani et al., 2010, p.1353).

Zahra et al. say that opportunity and pressure the most common causes are of earnings management. Pressure arises when managers have significant pressures to meet financial targets and financial analysts’ expectations. Besides managers might feel pressure to maintain their job security. In addition, opportunity and pressure arise when there are incentives to manage earnings in order to earn a more money. For example if managers use informational advantage to smooth earnings, because their bonuses could suffer if their firms fall short of quarterly earnings forecasts. Another reason for managers to manage earnings in their own interests is the compensation of stock options (2005). Healy confirms that bonus schemes create incentives for engaging in earnings management (1985). Other reasons for earnings management are the meeting debt covenants, private debt contracts restrictions and to raise funds in the capital markets as lower rates (Hadani et al., 2010, p.1353).

High quality accounting information needs to be reliable and relevant. Earnings management is perceived as negative, because it hides the truth and is used to mislead investors. More earnings smoothing of managing earnings towards a target by management results in less reliable information, therefore accounting quality will decrease. This is why earnings management is negatively correlated with accounting quality.
3. Research design

3.1 Overview
An analysis will be made of the period before and after the mandatory adoption of IFRS. The metrics used for measuring earnings management in this study, are the same metrics that has been used in the study of Barth et al. (2008). However, this study will use a different data sample. Barth et al. (2008) examined 21 countries in Europe from 1994 till 2003, whereas this study focuses on accounting quality in the Netherlands from 1997 till 2011. Besides Barth et al. (2008) compared IAS firms with NIAS firms (p.485), whereas this study compares firms applying IFRS with firms applying Dutch GAAP.

To examine whether the accounting quality has improved after the adoption of IFRS, earnings management is used as an indicator. Earnings management involves deliberate actions taken by management to meet earnings objectives. Earnings management is negatively correlated with accounting quality. So when there is more earnings management used by managers, it results in less accounting quality. Earnings are also known as ‘profit’ or ‘net income’. Net income is one of the most important items on the financial statements, as it determines the value of a company. Analysts and investors look to earnings to determine the attractiveness of shares. Companies with higher earnings have higher share prices and are more attractive to potential investors. This research will focus primarily on one manifestation of earnings management: earnings smoothing. The other measure of earnings management will be one for managing earnings towards a target.

Earnings smoothing is the use of accounting techniques to level out net income fluctuation from one period to the next period. The reason for this practice is to please the investors. Investors prefer stable and predictable earnings streams, compared with stocks whose earnings are subject to wild fluctuations.

To measure earnings smoothing I will use three measures of earnings smoothing and one for managing earnings towards a target. They are the variability of the change in net income, the ratio of the variability of the change in net income to the variability of the change in operating cash flows and finally the correlation between accruals and cash flows (Barth et al. 2006; Barth et al. 2008).

To measure managing earnings towards a target, prior literature identifies positive earnings as a common target of earnings management (Barth et al., 2008, p.476). Prior research uses the frequency of small positive net income as a metric to provide evidence of managing earnings.
towards a target (Burgstahler and Dichev, 1997, p.101). The reason why this metric is used, is because management prefers to report small positive net income rather than negative net income (Barth et al., 2008, p.477).

3.2 Hypotheses

In short, accounting quality increases when earnings management decreases. Since the obligatory adoption of IFRS is introduced to improve the accounting quality, the general prediction is that accounting quality should increase in the Netherlands, and thus should result in a decrease in earnings management after the obligatory adoption of IFRS.

Chapter 1.4.1 (Investor protection) described the influence of investor protection on the accounting quality. When the investor protection increases, the accounting quality also increases. As mentioned before, the Code Tabaksblat was introduced in 30 December 2004. This should increase the investor protection in the Netherlands, and therefore decrease the levels of earnings management, which could lead to an increase in accounting quality. Since the first of January 2005 it is obligatory for EU stock listed companies to base their financial reporting on the IFRS. The introduction date of these two rules differs only a couple of days, so the Code Tabaksblat might have an impact on the research results about earnings management. Therefore the main hypothesis is as follows:

Earnings management decreased after the obligatory adoption of IFRS

As explained before, to measure whether accounting quality improved in the Netherlands after the obligatory adoption of IFRS, four earnings management metrics are used. Three metrics are used for earnings smoothing and one metric is used for managing earnings towards a target.

The variability of the change in net income scaled by total assets is the first metric regarding earnings smoothing. According to Leuz, Nanda and Wysocki (2003), Ball and Shivakumar (2005, 2006), Lang, Raedy and Wilson (2006) and Lang, Raedy and Yetman (2003) firms with less earnings smoothing exhibit more earnings variability. Therefore the hypothesis regarding the variability of the change in net income is as follows:
Hypothesis 1: The variability of net income in the Netherlands will increase due to the obligatory adoption of IFRS.

The ratio of the variability of the change in net income to the variability of the change in operating cash flows is the second metric for earnings smoothing. Ball and Shivakumar (2005, 2006) say that timely recognition of gains and losses, which is consistent with higher earnings quality, tends to increase the volatility of earnings relative to cash flows (Barth et al., 2008, p.476). This is why the second hypothesis is as follows:

Hypothesis 2: The variability of the change in net income to the variability of the change in operating cash flows in the Netherlands will increase due to the obligatory adoption of IFRS.

The last metric regarding earnings smoothing is the correlation between accruals and cash flows. According to Leuz, Nanda and Wysocki (2003), Ball and Shivakumar (2005, 2006), Lang, Raedy and Wilson (2006) and Lang, Raedy and Yetman (2003) firms with more earnings smoothing exhibit a more negative correlation between accruals and cash flows. Besides Land and Lang (2002) and Myers, Myers and Skinner (2007) say that the more negative correlation exists because managers respond to poor cash flow outcomes by increasing accruals. In addition, Ball and Shivakumar show that timely loss recognition result in a less negative correlation between accruals and cash flows. This results in the following hypothesis:

Hypothesis 3: The negative correlation between accruals and cash flows in the Netherlands will decrease due to the obligatory adoption of IFRS.

The frequency of small positive net income as a metric to provide evidence of managing earnings towards a target is the last metric for earnings management. As said before, the reason why this metric is used, is because management prefers to report small positive net income rather than negative net income (Barth et al., 2008, p.477). So, firms applying IFRS should report small positive net income with lower frequency than firms applying Dutch GAAP:

Hypothesis 4: The frequency of reported small positive income in the Netherlands will decrease due to the obligatory adoption of IFRS.
### 3.3 Methodology

This chapter describes the regression models used in this study. Each indicator uses a different model from the Barth et al. (2008) paper.

For earnings management three metrics are used for earnings smoothing and one for managing earnings towards a target. The first earnings smoothing metric is based on the variability of the change in net income scaled by total assets ($\Delta NI$). A smaller variance of the change in net income would be evidence for earnings smoothing. However, change in net income is likely to be influenced by factors not attributable to the financial reporting system, that is, the economic environment and incentives to adopt IFRS (Barth et al., 2008, p.482). Therefore the earnings variability metric is based on the variance of the residuals from the regression of the change in net income on variables identified in prior research as controls for these factors (Barth et al., 2008, p.482):

$$
\Delta NI_{it} = \alpha_0 + \alpha_1 * SIZE_{it} + \alpha_2 * GROWTH_{it} + \alpha_3 * ISSUE_{it} + \alpha_4 * LEV_{it} + \alpha_5 * DISSUE_{it} + \alpha_6 * TURN_{it} + \alpha_7 * CF_{it} + \alpha_8 * AUD_{it} + \alpha_9 * NUMEX_{it} + \alpha_{10} * XLIST_{it} + \alpha_{11} * CLOSE_{it} + \epsilon_{it}
$$

Where:

- **SIZE** = the natural logarithm of total assets
- **GROWTH** = percentage change in sales
- **ISSUE** = percentage change in common stock
- **LEV** = end of year total liabilities divided by end of year equity book value
- **DISSUE** = percentage change in total liabilities
- **TURN** = sales divided by end of year total assets
- **CF** = annual net cash flow from operating activities divided by end of year total assets
- **AUD** = an indicator variable that equals one if the firm’s auditor is PwC, KPMG, Arthur Andersen, E&Y, or D&T, and zero otherwise
- **NUMEX** = the number of exchanges on which a firm’s stock is listed
- **XLIST** = an indicator variable that equals one if the firm is listed on any U.S. stock exchange.
- **CLOSE** = the percentage of closely held shares of the firm as reported by WorldScope.
The variability of ΔNI is the variance of the residuals from the first regression model. The variability of ΔNI has to be calculated for the pre-adoption period as well. The comparison between the variability of the change in net income in the pre-adoption and post-adoption determines whether earnings smoothing increased, based on the variability of the change in net income.

The second earnings smoothing metric is based on the mean ratio of the variability of the change in net income (ΔNI) to the variability of the change in operating cash flows (ΔCF). In general, firms with more volatile cash flows have more volatile net income. The second metric attempts to control for this (Barth et al., 2008, p.483). If firms use accruals to manage earnings, the variability of the change in net income should be lower than the variability of operating cash flows. The variability of the change in operating cash flows is also influenced by factors not attributable to the financial reporting standard (Barth et al., 2008, p.483). Just like the variability of the change in net income. Therefore the second metric is the same as the first metric, but now with the variability of the change in operating cash flows as the dependent variable:

\[ \Delta CF_{it} = \alpha_0 + \alpha_1 * SIZE_{it} + \alpha_2 * GROWTH_{it} + \alpha_3 * ISSUE_{it} + \alpha_4 * LEV_{it} + \alpha_5 * DISSUE_{it} + \alpha_6 * TURN_{it} + \alpha_7 * CF_{it} + \alpha_8 * AUD_{it} + \alpha_9 * NUMEX_{it} + \alpha_{10} * XLIST_{it} + \alpha_{11} * CLOSE_{it} + \varepsilon_{it} \]

The variability of the change in operating cash flows is the variance of groups of residuals from the second earnings smoothing regression model. The resulting second metric is the ratio of the variability of the change in net income to variability of the change in operating cash flows.

The third earnings smoothing metric is based on the correlation between accruals and cash flows. The dependent variables are ACC and CF. ACC is NI minus CF. A comparison has to be made between the residuals of these two regressions, instead of calculating the correlations between CF and ACC directly. CF and ACC are regressed on the control variables, but excluding CF:
\[ CFit = \alpha_0 + \alpha_1 \cdot SIZEit + \alpha_2 \cdot GROWTHit + \alpha_3 \cdot EISSUEit + \alpha_4 \cdot LEVit + \alpha_5 \cdot DISSUEit + \alpha_6 \cdot TURNit + \alpha_7 \cdot AUDit + \alpha_8 \cdot NUMEXit + \alpha_9 \cdot XLISTit + \alpha_{10} \cdot CLOSEit + \epsilon it \]

\[ ACCit = \alpha_0 + \alpha_1 \cdot SIZEit + \alpha_2 \cdot GROWTHit + \alpha_3 \cdot EISSUEit + \alpha_4 \cdot LEVit + \alpha_5 \cdot DISSUEit + \alpha_6 \cdot TURNit + \alpha_7 \cdot AUDit + \alpha_8 \cdot NUMEXit + \alpha_9 \cdot XLISTit + \alpha_{10} \cdot CLOSEit + \epsilon it \]

The metric for managing towards positive earnings is the coefficient on small positive net income, SPOS, in the regressions given by:

\[ IFRS(0,1)it = \alpha_0 + \alpha_1 \cdot SPOS + \alpha_2 \cdot SIZEit + \alpha_3 \cdot GROWTHit + \alpha_4 \cdot EISSUEit + \alpha_5 \cdot LEVit + \alpha_6 \cdot DISSUEit + \alpha_7 \cdot TURNit + \alpha_8 \cdot CF + \alpha_9 \cdot AUDit + \alpha_{10} \cdot NUMEXit + \alpha_{11} \cdot XLISTit + \alpha_{12} \cdot CLOSEit + \epsilon it \]

IFRS = 1, means observations after the obligatory adoption
IFRS = 0, means observations before the obligatory adoption
SPOS = 1, means that net income scaled by total assets is between 0 and 0.01
SPOS = 0, means that net income scaled by total assets is not between 0 and 0.01

For the last metric, the samples of the pre-adoption period and post-adoption period has to be combined to one sample. A negative SPOS indicates that the Dutch-GAAP firms manage earnings toward small positive amounts more frequently than firms using IFRS. Inferences are based on the coefficient on SPOS from the regression above, instead of directly comparing Dutch GAAP and IFRS firms percentages of small positive income (Barth et al., 2008, p.484). This is because the SPOS coefficient reflects the effects of controls for factors not attributable to the financial reporting standard (Barth et al., 2008, p.484). Finally, to control for the effect of heteroscedasticity robust standard errors are used by analysing every regression model.
4. Sample selection and descriptive statistics

4.1 Sample selection

The data for this research are collected from the Thomson Reuters using DataStream. WorldScope contains lists of all listed companies in a given country. The data for this research included all the public companies from the Netherlands from 1997 till 2014. This resulted in an initial sample of 8532 firm years over the period 1997-2014. Because this research compares firms applying IFRS with Dutch GAAP, the sample is divided in two parts: the pre-IFRS adoption period (1997-2004) and the post-IFRS period (2005-2014). Unfortunately there were lot of essential data missing, especially in the period 2012-2014. Besides firms in the financial sector had to be deleted from the sample, because their accruals are different than other firms. Deleting the unusable firm years in the pre-IFRS adoption period resulted in a sample of 40 firms for every year, which are 320 firm years in total for the pre-adoption period. Deleting the incomplete firm years in the period 2012-2014 would have resulted in a post-IFRS period sample of 14 firms for every year. This sample would have been far too small to make any conclusions. Therefore the years 2012-2014 are removed from the sample, resulting in the post-IFRS adoption period being 2005-2011. For the post-IFRS adoption period a sample of 54 firms are available for every year, which are 378 firm years in total for the post-adoption period. The total sample contains 698 firm years. To mitigate the effects of outliers, the data of variables are winsorized at the 5% level. This is because summary statistics and regression estimates can be highly influenced by a small number of extreme observations (outliers). These extreme observations can arise from database errors, but most commonly arise as a result of scaling. Especially for variables based on ratios, such as TURN (sales divided by end of year total asset) for example. If the denominator (total assets) is relatively small, the ratio will be large. With a few values of total assets that are close to zero, the TURN variable become extreme large. With winsorization, the extreme small and large observations are set equal to the values of less extreme small and large observations.

NUMEX as well as the indicator variables SPOS, AUD and XLIST are not winsorized, since these variables are not highly influenced by a small number of extreme observations.

4.2 Descriptive statistics

Tables 1 and 2 show the descriptive statistics from respectively the pre-adoption period (1997-2004) and the post-adoption period (2005-2011). When comparing the test variables of
these samples, the change in net income and the change in annual net cash flow did not change. The accruals slightly increased from -0.054 in the pre-adoption period to -0.042 in the post-adoption period. Annual net cash flow from operating activities did not change, whereas the SPOS increased from 0.053 in the pre-adoption period to 0.077 in the post-adoption period. This means that the reporting of small positive income increased.

Looking at the control variables, leverage decreased by 0.263 meaning that the amount of liabilities relative to equity decreased. In the post-adoption period firms have on average a higher GROWTH, it was even more than doubled. Meaning that the percentage increase in sales augmented. The mean for the EISSUE variable did not change. However, the DISSUE variable increased massive. Not only on average (from 0.089 to 0.214), but also the maximum in the post-adoption period was quite bigger than in the pre-adoption period (2.347 instead of 0.726. The TURN decreased, whereas the average SIZE slightly increased in the post-adoption period. The average number of exchanges on which a firm was listed did not change. Besides most of the firms in the post-adoption period still have an auditor from the Big Four accounting firms (91.8%). The mean of the XLIST variable decreased in the post-adoption period. Finally, the last control variable CLOSE also decreased from on average 44.08% in the pre-adoption period to 37.24% in the post-adoption period.
Table 1: Descriptives Dutch GAAP sample (1997-2004)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ΔNI</td>
<td>320</td>
<td>0.0043</td>
<td>0.0382</td>
<td>-0.0793</td>
<td>0.1056</td>
</tr>
<tr>
<td>ΔCF</td>
<td>320</td>
<td>0.0043</td>
<td>0.0865</td>
<td>-0.1979</td>
<td>0.2022</td>
</tr>
<tr>
<td>ACC</td>
<td>320</td>
<td>-0.0542</td>
<td>0.0741</td>
<td>-0.2334</td>
<td>0.0782</td>
</tr>
<tr>
<td>CF</td>
<td>320</td>
<td>0.0953</td>
<td>0.0746</td>
<td>-0.0590</td>
<td>0.2500</td>
</tr>
<tr>
<td>SPOS</td>
<td>320</td>
<td>0.0531</td>
<td>0.2246</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Control variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEV</td>
<td>320</td>
<td>2.2455</td>
<td>1.9359</td>
<td>0.4367</td>
<td>8.9898</td>
</tr>
<tr>
<td>GROWTH</td>
<td>320</td>
<td>0.0685</td>
<td>0.1856</td>
<td>-0.2691</td>
<td>0.5178</td>
</tr>
<tr>
<td>EISSUE</td>
<td>320</td>
<td>0.4400</td>
<td>0.0910</td>
<td>-0.0414</td>
<td>0.3415</td>
</tr>
<tr>
<td>DISSUE</td>
<td>320</td>
<td>0.0890</td>
<td>0.2656</td>
<td>-0.2936</td>
<td>0.7261</td>
</tr>
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<td>TURN</td>
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<td>1.7030</td>
<td>0.9292</td>
<td>0.5296</td>
<td>3.9879</td>
</tr>
<tr>
<td>SIZE</td>
<td>320</td>
<td>5.6253</td>
<td>0.7740</td>
<td>4.3637</td>
<td>7.0855</td>
</tr>
<tr>
<td>CF</td>
<td>320</td>
<td>0.0953</td>
<td>0.0746</td>
<td>-0.0590</td>
<td>0.2500</td>
</tr>
<tr>
<td>NUMEX</td>
<td>320</td>
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<td>1.3428</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>AUD</td>
<td>320</td>
<td>0.925</td>
<td>0.2638</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>XLIST</td>
<td>320</td>
<td>0.025</td>
<td>0.1564</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>CLOSE</td>
<td>320</td>
<td>44.0808</td>
<td>22.7203</td>
<td>9.4</td>
<td>86.515</td>
</tr>
</tbody>
</table>

Sample of firms that adopted Dutch GAAP between 1997-2004. Tabulated statistics are from the years before Dutch GAAP firms adopted IFRS, that is, the pre-adoption period, which ends 2004.

ΔNI is the change in annual earnings, where earnings is scaled by end-of-year total assets; ΔCF is the change in annual net cash flow, CF, where cash flow is scaled by end-of-year total assets; ACC is earnings less cash flow from operating activities, scaled by end-of-year total assets; CF is annual net cash flow from operating activities scaled by end-of-year total assets; SPOS is an indicator variable that equals one for observations with annual earnings scaled by total assets between 0.00 and 0.01. LEV is end-of-year total liabilities divided by end-of-year book equity; GROWTH is annual percentage change in sales; EISSUE is annual percentage change in common stock; DISSUE is annual percentage change in total liabilities; TURN is sales divided by end-of-year total assets; SIZE is the natural logarithm of end-of-year total assets; NUMEX is number of exchange listings; AUD is an indicator that equals one if the auditor is one of the large international accounting firms; XLIST is an indicator that equals one if the firm is listed on any U.S. stock exchange; CLOSE is the percentage of closely held shares as reported by WorldScope.
Sample of firms that adopted IFRS between 2005-2011. Tabulated statistics are from the years after Dutch GAAP firms adopted IFRS, that is, the postadoption period, which ends 2011. ΔNI is the change in annual earnings, where earnings is scaled by end-of-year total assets; ΔCF is the change in annual net cash flow, CF, where cash flow is scaled by end-of-year total assets; ACC is earnings less cash flow from operating activities, scaled by end-of-year total assets; CF is annual net cash flow from operating activities scaled by end-of-year total assets; SPOS is an indicator variable that equals one for observations with annual earnings scaled by total assets between 0.00 and 0.01. LEV is end-of-year total liabilities divided by end-of-year book equity; GROWTH is annual percentage change in sales; EISSUE is annual percentage change in common stock; DISSUE is annual percentage change in total liabilities; TURN is sales divided by end-of-year total assets; SIZE is the natural logarithm of end-of-year total assets; NUMEX is number of exchange listings; AUD is an indicator that equals one if the auditor is one of the large international accounting firms; XLIST is an indicator that equals one if the firm is listed on any U.S. stock exchange; CLOSE is the percentage of closely held shares as reported by WorldScope.
5. Results

In this section the four hypotheses will be answered using the results of the various regression models. Three of these metrics were used to measure earnings smoothing and one of them is used for measuring managing towards a target. The total observations for the pre-adoption period is 320 firm years and the total observations for the post-adoption period is 378 firm years.

The first earnings smoothing metric is based on the variability of the change in net income scaled by total assets, \( \Delta \text{NI} \). A smaller variance of the change in net income would be evidence of earnings smoothing. Table 3 shows that in the pre-adoption period the variability of \( \Delta \text{NI} \) was 0.00015. In the post-adoption period the variability of \( \Delta \text{NI} \) increased to 0.00029. This means that the variability of \( \Delta \text{NI} \) for firms applying IFRS is higher, but the increase in the variability of \( \Delta \text{NI} \) is very small. However based on the increase in the variability of \( \Delta \text{NI} \), earnings smoothing decreased for firms applying IFRS. This means that the accounting quality of firms applying IFRS increased, based on the first metric of earnings smoothing. Therefore the first hypothesis: “the variability of net income in the Netherlands will increase due to the obligatory adoption of IFRS,” is adopted.

The second earnings smoothing metric is based on the mean ratio of the variability of the change in net income (\( \Delta \text{NI} \)) to the variability of the change in operating cash flows (\( \Delta \text{CF} \)). This is because firms with more volatile cash flows usually have more volatile net income (Barth et al., 2008, p.483). If firms use accruals to manage earnings, the variability of the change in net income should be lower than the variability of operating cash flows. The results in table 3 show that in the post-adoption period the variability of \( \Delta \text{NI} \) over \( \Delta \text{CF} \) is 0.04719 and in the post-adoption period it increased to 0.38992. These results indicate that there is less earnings smoothing at firms applying IFRS compared with firms applying Dutch GAAP. This means that based on the second metric for earnings smoothing, the accounting quality improved after the obligatory adoption of IFRS. Therefore the second hypothesis: “the variability of the change in net income to the variability of the change in operating cash flows in the Netherlands will increase due to the obligatory adoption of IFRS,” is also adopted.
The third metric is the last metric for earnings smoothing. This metric is based on the correlation between accruals and cash flows. The dependent variables are ACC and CF. ACC is NI minus CF. A less negative correlation between accruals and cash flows serves as evidence of a reduction in earnings management (Barth et al., 2008, p.469). So if the obligatory adoption of IFRS improves the accounting quality, the correlation between accruals and cash flows should have decreased. Table 3 shows the result of the third metric for earnings smoothing. Firms applying IFRS have indeed a less negative correlation between accruals and cash flows. So the obligatory adoption of IFRS resulted in less earnings smoothing and thus accounting quality did improve, based on the third metric. Therefore the third hypothesis: “the negative correlation between accruals and cash flows in the Netherlands will decrease due to the obligatory adoption of IFRS,” is adopted.

Table 3: Results of earnings smoothing metrics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Dutch GAAP</th>
<th>IFRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
<td>320</td>
<td>378</td>
</tr>
<tr>
<td>Variability of ΔNI</td>
<td>0.00015</td>
<td>0.00029</td>
</tr>
<tr>
<td>Variability of ΔNI over ΔCF</td>
<td>0.04719</td>
<td>0.38992</td>
</tr>
<tr>
<td>Correlation of ACC and CF</td>
<td>-0.5454</td>
<td>-0.5152</td>
</tr>
</tbody>
</table>

The first column shows the various metrics used to measure earnings smoothing. The first metric is the variability of the change in net income. The variability of ΔNI is defined as the variance of residuals from a regression of the ΔNI on the control variables. The second metric for earnings smoothing is the variability of ΔNI over ΔCF. This is defined as the ratio of the variability of ΔNI divided by the variability of ΔCF. The third metric for earnings smoothing is the correlation of ACC and CF. This is equal to the correlation between the residuals from the accruals and cash flow regressions. Both sets of residuals from a regression of each variable are computed on the control variables.

The second column of table 3 shows the results of the earnings smoothing metrics for firms that apply Dutch GAAP, including the amount of observations (firm years). The last column shows the results of earnings smoothing metrics for firms applying IFRS, including the amount of observations (firm years).

The frequency of small positive net income as a metric to provide evidence of managing earnings towards a target is the last metric for earnings management. As said before, the reason why this metric is used, is because management prefers to report small positive net income rather than negative net income (Barth et al., 2008, p.477). The accounting quality would improve if firms applying IFRS report small positive net income with lower frequency than firms applying Dutch GAAP. A negative SPOS indicates that the Dutch-GAAP firms manage earnings toward small positive amounts more frequently than firms using IFRS. Table 4 shows the results of managing earnings towards a target. The R-squared is 0.0907, which means that the fitted regression equation explains 9% of the variation in IFRS(0,1). The SPOS
coefficient is 0.1014, so the SPOS coefficient is positive. This means that the firms applying IFRS manage earnings toward small positive amounts more frequently than firms applying Dutch GAAP. According to this metric, the accounting quality decreased after the obligatory adoption of IFRS. Thus the fourth hypothesis: “the frequency of reported small positive income in the Netherlands will decrease due to the obligatory adoption of IFRS,” is rejected.

Table 4: Results of managing earnings towards a target

| Variable | Coëfficiënts | Standard Error | P>|t| |
|----------|--------------|----------------|-----|
| SPOS     | 0.1014       | 0.0777         | 0.192|
| SIZE     | 0.0484       | 0.0278         | 0.082|
| GROWTH   | 0.1412       | 0.0970         | 0.146|
| EISSUE   | -0.1324      | 0.1890         | 0.484|
| LEV      | -0.0293      | 0.0115         | 0.011|
| DISSUE   | 0.0370       | 0.0610         | 0.544|
| TURN     | -0.1275      | 0.0227         | 0.000|
| CF       | -0.2537      | 0.2972         | 0.393|
| AUD      | -0.0726      | 0.0633         | 0.252|
| NUMEX    | -0.0221      | 0.0167         | 0.187|
| XLIST    | 0.0305       | 0.1111         | 0.784|
| CLOSE    | -0.0014      | 0.0008         | 0.069|
| CONSTANT | 0.6639       | 0.1685         | 0.000|

Table 4 shows the results of the metric for managing earnings towards a target. The first column shows the variables of the regression with IFRS as dependent variable and the others as control variables.

Table 5: Summary results

<table>
<thead>
<tr>
<th>Earnings management manifestation</th>
<th>Accounting quality with IFRS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Earnings Smoothing</strong></td>
<td></td>
</tr>
<tr>
<td>Variability of ΔNI</td>
<td>Increased</td>
</tr>
<tr>
<td>Variability of ΔNI over ΔCF</td>
<td>Increased</td>
</tr>
<tr>
<td>Correlation of ACC over CF</td>
<td>Increased</td>
</tr>
<tr>
<td><strong>Managing earnings towards a target</strong></td>
<td></td>
</tr>
<tr>
<td>Small positive NI</td>
<td>Decreased</td>
</tr>
</tbody>
</table>
6. Conclusion

The aim of this thesis was to investigate whether the obligatory adoption of IFRS increased the accounting quality in the Netherlands. In order to examine whether the accounting quality improved, firms in the Netherlands applying Dutch GAAP are compared with firms applying IFRS. Since the first of January 2005 it is obligatory for EU stock listed companies to base their financial reporting on the International Financial Reporting Standards (IFRS). Therefore the sample is divided in two parts: the pre-adoption period 1997-2004 and the post-adoption period 2005-2011. Most of the firms based their financial reporting on the Generally Accepted Accounting Principles (GAAP) before the obligatory adoption of IFRS.

In literature the most common benchmarks to examine whether accounting quality improved are: earnings management, timely loss recognition and value relevance. This study focuses on earnings management. Earnings management involves deliberate actions taken by management to meet earnings objectives. When there is more earnings management used by managers, accounting quality will decrease. This research will focus primarily on one manifestation of earnings management: earnings smoothing. Earnings smoothing is the use of accounting techniques to level out net income fluctuation from one period to the next period. The other measure of earnings management will be one for managing earnings towards a target.

Three metrics are used to measure earnings smoothing. They are the variability of the change in net income, the ratio of the variability of the change in net income to the variability of the change in operating cash flows and finally the correlation between accruals and cash flows (Barth et al. 2006; Barth et al. 2008). To measure managing earnings towards a target, prior literature identifies positive earnings as a common target of earnings management (Barth et al., 2008, p.476).

The results of the first three metrics indicate consistently that earnings smoothing decreased for firms applying IFRS. Therefore based on earnings smoothing, earnings management decreased and therefore accounting quality increased. However firms applying IFRS manage earnings toward small positive amounts more frequently than firms applying Dutch GAAP. According to this metric, the accounting quality decreased after the obligatory adoption of IFRS.
The results show different results for outcomes regarding the change in earnings management for firms applying IFRS. One manifestation of earnings management, earnings smoothing, decreased for firms applying IFRS. Three of the four hypotheses are adopted, therefore you could argue accounting quality increased. On the other hand, managing earnings towards a target increased for firms applying IFRS. Based on this, there is no evidence that earnings management in general decreased, and no conclusion can be made. In conclusion, the results of this study are not uniform and further investigation regarding this topic is needed.
7. Reference list


