Earnings Management in Private Companies: A Comparison Between IFRS and UK GAAP

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Abstract

In this study I investigate whether the adoption of IFRS by privately held companies from the United Kingdom in 2009 influences the extent of earnings management. To determine earnings management, discretionary accruals are measured by using the Jones (1991) Model. These discretionary accruals are divided into a negative, a positive and an absolute part. Another objective of this study is to examine the role of Big 4 audit firms on the extent of earnings management by companies reporting under IFRS. The final database contains 409 companies which reported under IFRS and 409 companies reporting under UK GAAP. These two groups of companies are matched by total assets and industry classification codes (SIC). My study provides evidence that IFRS do not reduce earnings management by private companies. On the contrary, IFRS companies engage more in income-decreasing earnings management than GAAP companies. I do not find evidence that Big 4 audit firms work as a constraint on the extent of earnings management. Measuring earnings management by using the Modified Jones Model and the addition of extra interaction variables leads to the same conclusions.

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1. Introduction

Accounting scandals as Worldcom, Tyco and Enron, and Arthur Andersen's downfall have changed the world of accounting and emphasized the need for high quality accounting standards. An important step to a more transparent reporting world took place in 2002, when the European Union (EU) Parliament accepted Regulation (EC) No. 1606/2002. This regulation requires all listed companies in the EU to prepare their consolidated financial statements, for annual periods beginning on or after 1 January 2005, in accordance with International Financial Reporting Standards (IFRS). Prior to this adoption companies listed in the EU had the choice to follow either country-specific Generally Accepted Accounting Principles (GAAP) or IFRS. Before the introduction of IFRS in Europe in 2005 it was, due to different legal accounting systems, very difficult to compare companies and their reports in a meaningful way. According to the EC Regulation No. 1606/2002 the objective of IFRS is "the adoption and use of international accounting standards in the community with a view harmonizing the financial information presented by the companies referred to in Article 4 in order to ensure a high degree of *transparency and comparability* of financial statements and hence an efficient functioning of the community capital market and of the internal market. " In other words, these international standards should help investors to compare European companies in a more meaningful, effective, and efficient way and it should help to evaluate the quality of financial reporting in a better way (Aussenegg et al., 2008). Moreover, according to Soderstrom and Sun (2007) IFRS should put pressure on managers to produce more truthful reports. Relative to the local accounting standards (such as UK GAAP) IFRS promise much more accurate, comprehensive, and timely financial statement information (Ball, 2006). Together with the higher degree of transparency and comparability, the expectation is that IFRS increase reporting quality. As a measure of reporting quality, most authors (Barth et al., 2008) assess the extent of earnings management in financial reports.

There has been done a lot of research on the affect of IFRS on earnings management (Barth et al., 2008; Paananen, 2008; Callao and Jarne, 2010). But prior research has focused primarily on publicly held companies (Van Tendeloo and

Vanstraelen, 2005). To extend the field of research in this topic, this study addresses the relationship between IFRS and earnings management in private companies. As opposed to public companies, privately held companies are not obliged to report their financial statements in accordance with IFRS. Instead they have the choice to utilize either IFRS or Local GAAP. It is questionable whether IFRS, as suggested above, indeed increase accounting quality in privately held companies. Therefore, the objective of this study is to examine to what extent the level of earnings management in private firms in the United Kingdom is influenced by using either UK GAAP as accounting system or IFRS. The choice for firms from the UK is motivated by the fact that this country has the largest number of private firms in Europe. Moreover, the UK is a low tax alignment country. In such countries auditors are considered to have lower incentives to provide high quality audits to private client firms (Van Tendeloo, 2007). In high tax alignment countries tax authorities take the financial statements as the basis for taxation. In these countries the tax authorities inspect and investigate the financial statements more carefully, which leads to a higher probability of audit failure detection. Therefore, low quality of the financial statements could negatively influence the reputation of the audit firm. In low tax alignment countries the connection between financial statements and taxation is less precise, which results in lower incentives for auditors to provide high quality audits. Therefore, I expect a higher magnitude of earnings management in private firms in the UK compared with other European countries. And as a consequence a clear difference if IFRS affects earnings management.

Most previous studies compare companies which utilized Local GAAP in the period before the introduction of IFRS with companies which used IFRS thereafter (Callao and Jarne, 2010). By looking at companies with the same characteristics in the same period I am able to compare earnings management for both accounting practices in an accurate way. My approach allows more precise insights in whether IFRS reduces the management of earnings. The final research sample consists of 818 privately held companies from the United Kingdom in 2009. Half of the companies applied IFRS (IFRS companies), while the other half reported under UK GAAP (GAAP companies). These two groups are matched based on size and industry. I utilize total assets and SIC codes as proxies for firm size and type of industry. The data for this paper are collected from the

Amadeus database provided by Bureau van Dijk. Consistent with other studies (Zimmermann and Gontcharov, 2006; Houque et al., 2010) discretionary accruals are used as a measure of the extent of earnings management. To measure discretionary accruals the Jones (1991) Model is utilized. To make clear in which direction earnings are managed discretionary accruals are split into absolute, negative, and positive discretionary accruals. Next to that, the effect of IFRS and Big 4 audit firms is considered in this paper.

The results of the empirical study are in accordance with my hypotheses. I find that the effect of IFRS on the magnitude of absolute and positive discretionary accruals is not significant, while IFRS do increase the extent of earnings management for firms reporting negative discretionary accruals, since the coefficient is significant and negative. Further, no evidence is provided by the Jones Model that Big 4 audit firms constrain the magnitude of earnings management. To test the robustness of the results, earnings management is also measured with the Modified Jones Model; this model provides the same results. In conclusion, IFRS do not reduce earnings management for privately held companies in the United Kingdom in 2009.

The remainder of my paper is organized as follows. Section II describes earnings management, previous research on IFRS, and ends with the hypotheses. Section III describes the research sample and discusses the research design. Section IV provides descriptive statistics and discusses the findings. The last section (section V) gives conclusions and recommendations for follow-up studies.

2. Literature and Hypotheses

The first paragraph of this section explains what earnings management constitutes and it discusses the most widely accepted definition. Since my study focuses on privately held companies, while other studies consider public companies, the paragraph ends with a comparison between the incentives of public and private companies to apply earnings management. In the second paragraph prior research about the effect of IFRS and Big 4 audit firms on earnings management is discussed. Subsequently, this discussion results in the formulation of the hypotheses.

2.1 Earnings Management

Investors, banks, and other providers of capital analyze the financial performance of a company to determine the attractiveness and creditworthiness. The primary focus of financial reporting is therefore to give information about the performance of an enterprise. Hence, for users of financial statements it is essential to understand what earnings management constitutes and why it takes place. To clearly understand earnings management it is important to consider the role of accrual accounting (Dechow and Skinner, 2000). The FASB provides the following definitions of accrual accounting:

Accrual accounting attempts to record the financial effects on an entity of transactions and other events and circumstances that have cash consequences for the entity in the periods in which those transactions, events, and circumstances occur rather than only in the periods in which cash is received or paid by the entity [FASB 1985, SFAC No. 6, para 139].

Accrual accounting uses accrual, deferral, and allocation procedures whose goal is to relate revenues, expenses, gains, and losses to periods to reflect an entity's performance during a period instead of merely listing its cash receipts and outlays. Thus, recognition of revenues, expenses, gains, and losses and the related increments or decrements in assets and liabilities – including matching of costs and revenues, allocation, and amortization – is the essence of using accrual accounting to measure performance of entities [FASB 1985, SFAC No. 6, para. 145].

In other words, the principal goal of accrual accounting is to record revenues and expenses in the period in which they are incurred. This helps investors to assess the economic performance of a company in a more accurate way. On the other hand, by shifting expenses to other periods, accrual decisions also create opportunities for managers to show stable earnings instead of large fluctuations over the years. The question is when these accrual decisions become earnings management. To answer this question, definitions of earnings management could be used. Earnings management is not explicitly defined by regulators, while there are plenty of definitions available in academic literature (Schipper, 1989; Duncan, 2001; Levitt, 1998; Johnson, 1999). Healy

and Wahlen (1999, pp.368) formulated the next, widely accepted, definition of earnings management:

"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."

To make clear that earnings management is by definition not the same as fraud, Dechow and Skinner (2000) identify three practices. These are 'fraudulent accounting practices', earnings management, and the 'legitimate exercise of accounting discretion'. The first practice is by definition not allowed, while the second and the third are within the constraints of accounting standards. What distinguishes the last two practices is the intention of the management, if the intention of the practice is to deceive stakeholders it is called earnings management, if the practice is not meant to deceive Dechow and Skinner call it the 'legal exercise of accounting discretion'.

The problem with the definitions of Healy and Wahlen (1999) and Dechow and Skinner (2000) is that it is rather difficult to observe the intention of managers. It is not possible to be certain if earnings are managed for firm's or management's benefit, or to mislead investors and other users of financial reporting (Yaping, 2005). Therefore, a number of different models have been developed to measure earnings management. These models estimate the discretion used by managers in reporting. A majority of them, like the Jones (1991) Model are based on the above mentioned accruals. This model is further explained in section 3.

Some studies compare the incentives to apply earnings management between private and publicly held firms (Beatty et al., 2002). The results are mixed; literature presents arguments for and against higher levels of earnings management in private companies. On the one hand, one could argue that private companies engage more in earnings management than public companies. In the first place, Burgstahler et al. (2006) argue that it is easier in private companies to communicate information via private channels to

shareholders, since these companies have relatively concentrated ownership structures. Moreover, earnings do not have to be as informative about financial performance because major capital providers often have inside information about the company. In contrast, public companies have incentives to report high quality financial information, such that it is attractive for investors to invest in the company. Private companies have fewer incentives to report financial information that is perceived as high quality. As a consequence, the importance of high quality auditors to provide financial statements which are of high quality is lower in privately held firms. Since reported earnings are less important in private firms, these firms face less of a tradeoff when they apply earnings management. Thus, the detection risk is lower which might increase the incentives to engage in earnings management. Second, since banks are often the major capital suppliers of private firms, there could arise agency conflicts between management and the banks, which might increase the incentives to apply earnings management. (VanderBauwhede and Willekens, 2004).

On the other hand, one could argue that private companies engage less in earnings management than public companies. As said before, ownership of private companies is more concentrated, this could lead to lower agency problems and therefore to fewer incentives to hide bad performance by using earnings management. Another argument why private companies would engage less in earnings management is because public companies have stronger incentives to manage their earnings. According to Van Tendeloo and Vanstraelen (2008) investors in stock markets are expected to rely more on earnings target than banks and other sophisticated investors. Therefore, public firms have more incentives to report higher earnings than privately held companies, which could increase the incentives for earnings management.

2.2 Hypotheses Development

Previous studies concerning the relationship between IFRS and earnings management could be divided within two broad groups. Part of the studies examine whether earnings management decreases when firms are forced to apply IFRS. Christensen et al. (2008) examine whether the adoption of IFRS leads to accounting quality improvements. They compare German firms which voluntarily adopted IFRS from 1998 until 2005 with

German firms which are forced to apply IFRS in 2005. They find a decrease in earnings management for firms which voluntarily apply IFRS. In contrast, they could not provide such accounting quality improvements for firms that are forced to apply IFRS. Their findings suggest that mandating IFRS will not improve accounting quality for firms without incentives to apply IFRS. Two possible explanations for these results are given. First, IFRS might lack the capability to reduce earnings management by companies with low incentives to apply IFRS. Second, IFRS by it self is not sufficient to reduce earnings management. Christensen et al. argue that the improvement of accounting quality for voluntarily adopters could be caused by changes in incentives of these companies around the time of their adoption.

According to Callao and Jarne (2010) earnings management has intensified since the adoption of IFRS in Europe, as the magnitude of discretionary accruals has increased in the periods after the implementation of IFRS compared to the periods prior to the implementation. Moreover, they find that total current and long-term discretionary accruals in the UK increased significantly after the implementation of IFRS.

Jeanjean and Stolowy (2008) analyze whether the mandatory introduction of IFRS in countries which are first-time IFRS adopters has an impact on earnings management. In these countries it was not possible to apply IFRS before 2005. They indicate an increase in the pervasiveness of earnings management after the introduction of IFRS in France and no change in Australia and the UK. Other studies too provide evidence that the mandatory introduction of IFRS does not lead to a decrease of earnings management or an increase of the quality of financial reporting (Paananen, 2008; Paananen and Lin, 2008; Ahmed et al., 2010).

Another part of researchers focus on the relationship between earnings management and the voluntary adoption of IFRS. For instance, Van Tendeloo and Vanstraelen (2005) compare German public firms reporting under German GAAP with firms reporting under IFRS in the period prior to the adoption of IFRS in Europe in 2005. They find no different earnings management behavior for adopters of IFRS in Germany. Adopting IFRS appears to increase the magnitude of earnings smoothing, but when the company has a Big 4 auditor this effect is significantly reduced.

Aussenegg et al. (2008) examine whether the transition from local GAAP to IFRS by publicly held firms, before the mandated introduction of IFRS, affects earnings management. They hypothesize that firms applying IFRS do not engage in significantly more or less earnings management than other firms. On the one hand, they argue IFRS impose higher disclosure requirements which increase the risk that earnings management will be detected and therefore increases the costs of applying earnings management. But on the other hand, since IFRS is a relative new accounting practice auditors lack experience which might results in broader interpretations of IFRS. According to Aussenegg et al. these two effects neutralize each other. They observe–in contrast with their hypothesis–that firms from Central European countries which applied IFRS engage less in earnings management than companies which applied local GAAP. In addition, the magnitude of earnings management in firms from the UK did not change after the transition from UK GAAP to IFRS. They argue that this is caused by the fact that these countries already experienced lower levels of earnings management before the adoption of IFRS in comparison with other countries in Europe. Zimmermann and Gontcharov (2006) support the above findings; they provide no evidence of differences in earnings management between German companies applying IFRS or German GAAP, in the period prior to the introduction of IFRS.

In contrast, by comparing listed firms from Austria, Germany, and Switzerland, Daske and Gebhardt (2006) find an increase in the quality of financial reporting for firms which voluntarily apply IFRS. Next to that, by comparing firms from 21 countries which adopt International Accounting Standards (IAS) with firms which do not, Barth et al. (2008) demonstrate that firms applying IAS engage less in earnings management, recognize losses more timely, and present more value relevant accounting amounts.

In a more recent study Capkun et al. (2011) examine the impact of the adoption of IFRS on earnings management. They split their sample of public firms from 29 countries into three groups: early adopters (firms which adopted IFRS before 2004), late adopters (firms which chose to adopt IFRS in 2005 or 2006 in countries where it was possible to apply IFRS earlier), and mandatory adopters (firms which are mandated to apply IFRS from countries where it was not allowed to adopt IFRS before 2005). On the one hand, the results show that early adopters engage less in earnings management. On the other

hand, the mandated introduction of IFRS leads to higher levels of earnings management. Capkun et al. suggest that this is caused by the greater flexibility of IFRS in the years after 2005 compared to the years before 2005.

In table 1 of the Appendix the conclusions of previous research on this topic are summarized. As can be seen, overall the evidence of the relation between earnings management and voluntary IFRS adoption is mixed. On the one hand, studies document no significant effect of IFRS on earnings management. While on the other hand, some authors provide evidence that the voluntary adoption of IFRS reduce earnings management. However, in two papers the last effect disappeared after the introduction of IFRS in 2005, which could be caused by the greater flexibility of IFRS after 2005 compared to the period before 2005. This suggests that IFRS (after 2005) by itself do not reduce earnings management. Hence, I hypothesize:

Hypothesis 1: Private firms which have adopted IFRS do not engage in significantly less earnings management compared to private firms reporting under UK GAAP

All European public companies, and private companies that meet certain size criteria are required to have their financial statement audited by an external auditor, such that stakeholders of the firm can assess the accuracy of the financial statements and the going concern status of the company. Moreover, it gives assurance about the non-existence of financial fraud in the financial statements. Previous studies examine the effect of the quality of these audits on earnings management. To assess the role of audit quality they investigate the relationship between earnings management and whether the company is audited by a Big 4/5/6[1] or a non-Big 4/5/6 auditor. An important note to make is that most of them, in contradiction with my paper, are focused on public firms. Becker et al. (1998) find higher magnitudes of discretionary accruals for firms which are audited by non-Big 6 audit firms in relation to firms audited by Big 6 auditors. Others (Zhou and Elder, 2003; Francis et al., 1999; DeFond and Jiambalvo, 1991; Chen et al., 2005) also

[1] Big 6 audit firms (1989-1998) consisted of Deloitte & Touch, Ernst & Young, Arthur Andersen, Price Waterhouse, Coopers & Lybrand and Peat Marwick Mitchell. This became the Big 5 (1998-2001), since Price Waterhouse merged with Coopers & Lybrand to PricewaterhouseCoopers. After the collapse of Arthur Andersen in 2002, there are 4 big audit firms remaining

provide evidence that high audit quality works as a constraint on earnings management. Francis and Wang (2004) state that the constraining effect of Big 4 auditors on clients' accruals, called Big 4 conservatism, is systematically greater in common law countries. These countries are characterized by strong investor protection, high risk of litigation, and a diverse base of investors. The UK is such a country.

The minority of studies do not find supporting evidence that Big 4 audit firms do a better job in restraining earnings management in public companies. Piot and Janin (2007) do not find lower levels of earnings management for French companies audited by Big 5 audit compared to firms which are not. This is in contrast with the earlier mentioned studies. Piot and Janin suggest this is caused by the lower litigation risk incurred by audit firms in France.

Given the big differences between private and public firms, the question is what the effect of Big 4 auditors is for privately held firms. The distinction between ownership and control for private firms is not as big as for public firms, which could imply that there is less demand for financial statements, for monitoring managers and, for high quality audits (Fama and Jensen, 1983). However, Van Tendeloo and Vanstraelen (2008) argue that also private firms need high quality auditing for the next reasons. First, private firms have to deal with agency conflicts with their capital providers, such as banks (Vander Bauwhede and Willekens, 2004). Second, since private firms are not listed there is a lack of market-based measures which makes it more important to increase the emphasis on reported earnings to evaluate managerial performance and to award appropriate personnel compensations (Jensen and Murphy, 1990; Chaney et al., 2004). Third, financial statements audited by a Big 4 auditor could be utilized to signal high quality of financial statements. As mentioned in the introduction, tax authorities in high tax alignment countries base taxation on financial statements. In the case these statements are audited by a Big 4 audit firm this could signal high reporting quality, which might deter the authorities to conduct an accurate tax audit (Van Tendeloo and Vanstraelen, 2008). The last mentioned reason for the need of high quality accounting is to convince stakeholders (for example family and banks) of the reliability of their financial statements.

Prior literature about the effect of Big 4 audit firms on earnings management in private firms is limited and the conclusions are mixed. The above mentioned paper of

Van Tendeloo and Vanstraelen (2008) investigates whether Big 4 auditors work as a constraint on earnings management for private firms. They find that this association only holds in countries with a high alignment between financial reporting and tax accounting. In these countries tax authorities rely on financial statement to determine taxable income. Therefore, tax authorities are considered as direct stakeholders. This makes the probability that an audit failure will be detected higher. Consequently, in these countries Big 4 auditors have incentives to provide high quality audits to protect their reputation.

To examine whether Big 6 auditors constrain earnings management more than non-Big 6 auditors Vander Bauwhede et al. (2003) utilize a sample of Belgium companies. They find that Big 6 auditors restrain income-decreasing earnings management more than non-Big 6 auditors when earnings are above target and companies have incentives to smooth earnings downwards. For income-increasing earnings management no supportive evidence is provided.

According to Van Tendeloo (2007) UK companies audited by Big 4 audit firms report more income-decreasing earnings management. Moreover, these firms show lower 'relative tax burdens', which might imply that Big 4 audit firms increase earnings management related to tax activities. According to Vander Bauwhede and Willekens (2004) the audit quality between firms audited by a Big 6 company and firms audited by a non-Big 6 company do not significantly differ. They examine Belgium private firms and find that both audit companies provide financial reports of acceptable quality. Also Sercu et al. (2002) do not provide evidence that Big 6 audit firms constrain earnings management more than non-Big 6 audit firms. In conclusion, the findings of the above mentioned studies are in contrast with studies about publicly held firms (Becker et al., 1998; Francis et al., 1999; DeFond and Jiambalvo, 1991). Sercu et al. suggest that this difference could be explained by a lower probability of audit failure detection for private firms compared to public firms.

Since there is no clear evidence that Big 4 audit firms constrain earnings management more in private companies than non-Big 4 audit firms, I formulate the following hypothesis:

Hypothesis 2: The effect of adoption of IFRS on the reduction of earnings management by private firms does not differ between companies audited by a Big 4 audit firm compared to companies audited by a non-Big 4 audit firm.

3. Research Method

This section consists of three paragraphs. In the first paragraph the selection process and the composition of the final sample will be discussed. Paragraph 2 reviews models to measure discretionary accruals and ends with a description of the Jones (1991) Model. The last paragraph considers an empirical model to determine whether IFRS, Big 4 audit firms and other control variables affect the magnitude of earnings management.

3.1 Sample

The necessary data of private UK companies is collected from the April 2011 version of the Amadeus database supplied by Bureau van Dijk. Amadeus provides standardized financial statement of European private and public companies. In order to make an accurate comparison between IFRS and UK GAAP I utilize a matched sample design. Therefore, IFRS firms are matched with GAAP firms with a similar size from the same industry. As proxies for size and industry total assets and the first two digits of SIC[2] codes are used. If several similar companies are available the matches are based on the first three or even the four digits of the SIC codes. If there are no companies with comparable amounts of total assets in the industry, GAAP companies with the same first digit of the SIC code as the IFRS company are used.

Consistent with previous research (Coppens and Peel, 2005; Burgstahler et al., 2006; van Tendeloo and Vanstraelen, 2005) about earnings management, I exclude companies from financial institutions (SIC codes between 6000 and 6799) and from institutions in public administration (SIC codes above 9000). The specific requirements for the financial statements of financial institutions differ substantially from those of the other companies and are therefore excluded. Companies from the public administration

[2] Standard Industrial Classification (SIC) Code classifies industries by a four-digit code

sector show big differences, which is problematic when estimating discretionary accruals per industry and year (Vander Bauwhede, 2001). Further, privately held subsidiaries of quoted companies as indicated in Amadeus, and companies with total accruals above 100% of lagged total assets (as in Van Tendeloo and Vanstraelen, 2005) are excluded. Last, to increase the reliability of the results outliers have to be excluded. Therefore, firms with missing values and the firms with the 1% smallest and largest values of all necessary variables for the regression analyses are excluded from the sample. The sample selection process is given in tables 2 and 3. After excluding these companies my final sample consists of 409 private companies which applied IFRS and 409 which applied UK GAAP in 2009. Thus in summary, for every IFRS company a GAAP company in the same industry with the nearest amount of total assets is matched. Consequently, the final sample consists of 818 UK companies.

3.2 Earnings Management Measure

3.2.1 Magnitude of Discretionary Accruals

Consistent with other studies (Zimmermann and Gontcharov, 2006; Houqe et al., 2010), which examine the relationship between IFRS and earnings management, I utilize discretionary accruals as measure of the extent of earnings management. Total accruals consist of non-discretionary (*NDACC*) and discretionary accruals (*DACC*). The latter has to be estimated, since only total accruals (*TACC*) are known. The discretionary accruals are capable of being manipulated by management, while for non-discretionary accruals this is more difficult. Most studies about earnings management use the Jones Model (Jones, 1991) or models which are derived from this model (Höglund, 2010). The Jones Model–which is based on sales growth and property, plant and equipment–has been criticized, since its power to detect earnings management is low. For that reason, Dechow et al. (1995) have developed a modified version of the Jones Model. By adding growth in credit sales to the original model they try to reduce type II errors; these are errors in which accruals are classified as non-discretionary accruals when they are not. But it is questionable whether this modification actually improves the Jones Model or whether it leads to an overcorrection of the model. Dechow et al. (2010) argue that the Modified

Jones Model classifies non-discretionary accruals as discretionary accruals more than the original Jones Model.

Dechow et al. (1995) find that performance is an important factor in estimating total accruals. Therefore, to control for performance Kothari et al. (2005) add return on assets (ROA) as explanatory factor to the Jones Model. However, the relationship between total accruals and performance is non-linear, while the approach of Kothari et al. assumes a linear regression. Moreover, Dechow et al. (2010) argue that it is probable that this modified model estimates discretionary accruals with more noise. In conclusion, since the modifications of the Jones Model might bias the results, I utilize the Jones (1991) Model. This is in line with comparable studies (Becker et al., 1998; Van Tendeloo and Vanstraelen, 2005).

The first step in measuring earnings management is to determine total accruals (TACC). In literature, two methods to calculate total accruals are used; the cash flow approach and the balance sheet approach. The cash flow approach utilizes operating cash flows. Since these cash flows are not available in Amadeus the balance sheet approach is used in this study, where total accruals are defined as in Dechow et al. (1995) and Burgstahler et al. (2006):

$$TACC_t = (\Delta CA_t - \Delta Cash_t) - (\Delta CL_t - \Delta STDebt_t) - DEP_t \quad (1)$$

Where:

CA_t = current assets in year *t*,

CL_t = current liabilities in year *t*,

$STDebt_t$ = short term debt in year *t*,

DEP_t = depreciation in year *t*

Subsequently, the obtained total accruals are used to conduct the following linear regression:

$$TACC_{it} = \alpha_0 \frac{1}{TA_{i,t-1}} + \alpha_1 \frac{\Delta \mathrm{Re}v_{it}}{TA_{i,t-1}} + \alpha_2 \frac{PPE_{it}}{TA_{i,t-1}} + \varepsilon_{it} \quad (2)$$

Where:

$TACC_t$ = total accruals scaled by lagged total assets in year *t*,

ΔRev_t = change in revenues in year *t*,

PPE_t = property, plant, and equipment in year *t*,

TA_{t-1} = total assets in year *t-1*

After the regression, the estimates of the α's are used to estimate non-discretionary accruals scaled by lagged total assets (*NDACC*), using the following formula:

$$NDACC_{it} = \hat{\alpha}_0 \frac{1}{TA_{i,t-1}} + \hat{\alpha}_1 \frac{\Delta \mathrm{Re}\, v_{it}}{TA_{i,t-1}} + \hat{\alpha}_2 \frac{PPE_{it}}{TA_{i,t-1}} \quad (3)$$

Last, the discretionary accruals are estimated as follows:

$$DACC_{it} = TACC_{it} - NDACC_{it} \quad (4)$$

In which $DACC_t$ represents discretionary accruals or, in other words, the extent of applied earnings management.

3.3 Model Variables

The two independent variables of interest in this study are (1) whether or not the company has adopted IFRS (*IFRS*) and (2) whether or not the company is audited by a Big 4 audit firm (*B4NB4*). To examine whether having a Big 4 auditor influences the effect of IFRS on the magnitude of reported accruals, the interaction variable '*IFRS*B4NB4*' is included in the regression analysis for the discretionary accruals. The following empirical model for discretionary accruals is used in this paper:

$$DACC_{it} = \beta_0 + \beta_1 * IFRS + \beta_2 * B4NB4 + \beta_3 * IFRS * B4NB4 + \beta_4 * LNASSETS + \beta_5 * GEARING + \beta_6 * ROA + \beta_7 * IND + \beta_8 * GROWTH + \beta_9 * CFO \quad (5)$$

Where,

Dependent variables

$DACC_t$	= discretionary accruals in year t, scaled by lagged total assets

Independent variables

$IFRS_t$	= dummy variable (IFRS = 1, else = 0)
$B4NB4_t$	= dummy variable (Big 4 auditor = 1, else = 0)
$LNASSETS_t$	= natural logarithm of total assets in year t
$GEARING_t$	= ratio between total liabilities and total assets
ROA_t	= return on total assets in year t
IND	= vector of industry dummies (industry group 10 is the base group)
$GROWTH_t$	= percentage change in revenues in year t
CFO_t	= cash flow from operations, scaled by lagged total assets in year t

I include the following variables to control for differences in earnings management incentives and firm characteristics. First, as a proxy for the size of firms, the natural logarithm of total assets (*LNASSETS*) is included in the regression analysis. Watts and Zimmerman (1990) argue that size is a proxy variable for political attention. According to the political cost hypothesis larger and more profitable firms might be subject to more thorough government scrutiny, and therefore engage more in income-decreasing activities. For this reason it is expected that larger firms engage more in earnings decreasing activities than smaller firms.

Second, a gearing variable (*GEARING*) is included. This is the ratio between total liabilities and total assets. On the one hand, it could be argued that highly leveraged firms have more negative accruals related to contractual renegotiations, which provide incentives to reduce earnings. DeAngelo et al. (1994) suggest that lenders of troubled firms perceive greater benefits from monitoring management, therefore they will sooner find accounting tricks of management to mask bad performance. If lenders detect such tricks the manager lose credibility with lenders. As a result, managers have incentives to take discretionary write-offs to signal their willingness, to the lenders, to deal with the financial problems of the firm. On the other hand, troubled firms might have incentives to

increase discretionary accruals in order to avoid violation of debt covenants (Becker et al., 1998).

According to Young (1999) the Jones Model may yield measurement errors in the discretionary accruals proxy for firms with extreme financial performance. To control for this problem cash flows from operations (*CFO*) is added as control variable. Following other studies (Becker et al., 1998; Sercu et al. 2002), operating cash flows are scaled by lagged total assets. As in Young (1999) the expectation is to find a negative coefficient for this variable. Since operating cash flows are not available in Amadeus, they are determined using the next balance sheet approach (Burgstahler et al. 2004):

$$CFO_t = EBIT_t - TACC_t \quad (6)$$

Where, $EBIT_t$ is equal to earnings before interest and taxation in year *t*, while total accruals are calculated using (1).

Further, I include control variables for *GROWTH* and return on assets (*ROA*) to control for differences in performance. Where, growth is represented by the percentage change in revenues and *ROA* by profits scaled by total assets (Burgstahler et al., 2006). Aussenegg et al. (2004) demonstrate higher levels of earnings management for growth firms. Therefore, the expected sign of the coefficient of *GROWTH* is positive. Previous studies (Gao and Shrieves, 2002; Van Tendeloo and Vanstraelen, 2008) provide evidence for a significantly negative relationship between discretionary accruals and return on assets. Therefore, the expected coefficient for *ROA* is negative.

Last, to control for industry effects on earnings management industry dummies (*IND*) are included. These groups are based on Fama and French's industry classification groups. The industry codes are presented in table 4.

To check for differences in income-decreasing, income-increasing, and the total extent of earnings management I perform three regression analyses, respectively one with the negative (income-decreasing), the positive (income-increasing), and the absolute values of discretionary accruals.

4. Results

In this section the results of the empirical test will be reported. In the first two paragraphs the descriptive statistics of the sample and the univariate statistics of the discretionary accruals will be discussed. The third paragraph shows the regression results. These results will be compared with the formulated hypotheses and with findings of existing literature. To check the robustness of the results the section ends with two sensitivity analyses.

4.1 Descriptive Statistics

The distribution of the sample by industry group is given in table 5. A relative low percentage of the firms operate in the following industries: consumer non durables, consumer durables, energy, telecommunication, health, and utilities industries (total approximately 16%). Firms from manufacturing, business equipment, shops, and other industries form the largest group of this sample (84%). Table 6 reports that 61% of the companies in the sample have been audited by a Big 4 audit firm. In 2009, 69% of the IFRS companies against 53% of the GAAP companies were audited by a Big 4 auditor.

The descriptive statistics of the necessary variables to measure earnings management are presented in table 7. In panel A the results–including the ratios necessary for the Jones Model–of the whole data sample are presented, while panel B and C separates descriptive statistics for IFRS and GAAP companies. Inspection of these tables shows that IFRS companies in this sample have a higher mean of total assets (€117 million) than GAAP companies (€105 million). However, table 8 compares the differences in means between the two groups of firms with t-statistics and shows that the difference in total assets is not significant. Further, this table indicates that IFRS companies have significantly higher property, plant, and equipment, cash flows from operations, and depreciation expenses, while the return on assets and the gearing factor are significantly lower compared to GAAP companies. As an additional test, the medians of the variables are compared in table 9. Regarding property, plant, and equipment, the gearing factor and return on assets the results are in line with table 8. However, in contrast to the means, the medians of total assets, current assets, current liabilities and revenues differ significantly between IFRS and GAAP firms.

Table 10 contains the descriptive statistics of discretionary and total accruals. The companies in the sample report income-increasing discretionary accruals more frequently than income-decreasing discretionary accruals, although the difference between the magnitudes differs not significantly from zero. For total accruals the opposite is the case; in 2009, 477 companies report income-decreasing total accruals, while only 341 companies report income-increasing total accruals. The mean of income-increasing total accruals is slightly higher than income-decreasing total accruals, but this difference is not significant. Since a regression analysis has been used, the magnitude of total discretionary accruals is equal to zero and therefore not presented.

4.2 Univariate Results

Table 11 provides descriptive data of the univariate statistics of discretionary accruals. The results suggest that IFRS companies are significantly associated with higher levels of absolute discretionary accruals and income-decreasing discretionary accruals than companies which use GAAP, while there is no significant difference for income-increasing discretionary accruals. Further, it is remarkable that IFRS firms audited by a Big 4 audit firm report significantly higher magnitudes of income-decreasing discretionary accruals than GAAP firms. Neither absolute discretionary accruals nor income-increasing discretionary accruals differ significantly between companies adopting IFRS and GAAP. Table 11 provides no evidence for differences between IFRS and GAAP companies audited by non-Big 4 audit firms.

4.3 Regression Results and Discussion

The Pearson correlation matrices are presented in table 12. This table shows correlations between absolute, negative, and positive discretionary accruals and control variables, and moreover Variance Inflation Factors (VIFs). As can be seen in the tables, there are a couple of variables that demonstrate high correlation. But since the VIFs for all variables of absolute, negative, and positive discretionary accruals are below 5 the risk of bias due to strong correlations is minimal.

To test my two hypotheses two regressions are separately performed for the three groups of discretionary accruals. To test the first hypothesis the regression analysis is performed without the interaction variable *IFRS*B4NB4*. The results of this regression are shown in model 1 in table 13. Panel A shows that the IFRS variable for absolute discretionary accruals is not significant. This indicates that firms which have adopted IFRS in 2009 are not associated with significantly more or less absolute discretionary accruals than GAAP companies. This is in accordance with hypothesis 1. The results of the effect of IFRS on earnings management are consistent with Zimmermann and Goncharov (2007) and Van Tendeloo and Vanstraelen (2005) who do not find evidence that IFRS adopters do report different magnitudes of earnings management compared to GAAP adopters. To test the second hypothesis, the interaction variable *IFRS*B4NB4* is included. The presented results in model 2 in panel A demonstrate that IFRS firms audited by Big 4 audit firms do not exhibit significantly more or less discretionary accruals. This is similar to hypothesis 2. The results of model 1 show that having a Big 4 auditor does significantly affect absolute discretionary accruals, but after including the interaction variable this effect is neutralized. These findings are in line with Van Tendeloo and Vanstraelen, who conclude that having a Big 4 audit firm do not reduce the level of reported discretionary accruals.

Inspection of the other control variables gives the following results. First, since *LN Assets* is negative and significant, it could be concluded that the larger the company the lower the reported magnitudes of absolute discretionary accruals are. Second, the gearing factor is, in accordance with DeAngelo et al. (1994) and Becker et al. (1998), significant. Last, absolute cash flows from operations and Fama and French classification groups business equipment and health are positively significant. Manufacturing companies report significant less absolute discretionary accruals than firms from other industries. The explanatory power, represented by R^2, of model 1 and 2 for absolute discretionary accruals is approximately 29%. This implies that a quarter of the variance in the absolute value of discretionary accruals is explained by this model.

Panel B of table 13 reports the results of negative discretionary accruals and indicates that firms which have used IFRS report significantly lower values of negative discretionary accruals. Since the coefficient of this variable is negative and significant, this implies that

IFRS firms exhibit more income-decreasing discretionary accruals. Thus, IFRS companies engage in significantly more earnings management than GAAP companies, what confirms the first hypothesis. The control variable *B4NB4* as the interaction variable *IFRS*B4NB4* to test hypothesis 2 are not significant. Therefore, hypothesis 2 is accepted; there is no difference in negative discretionary accruals between IFRS firms audited by Big 4 audit firms compared to IFRS firms audited by non-Big 4 audit firms. On the one hand, this contradicts with Van Tendeloo (2007) and Vander Bauwhede et al. (2003) who find that public companies with a Big 4 audit firm report significantly fewer discretionary accruals than public firms with a non-Big 4 audit firm. It is not clear what causes this difference; it may be the result of differences between private and public companies. Possibly, Big 4 audit firms have lower incentives to reduce earnings management in privately held firms due to lower litigation risks. On the other hand, my results are in line with Sercu et al. (2002) who also do not find supporting evidence for the constraining factor of Big 4 auditors on income-decreasing earnings management. However, it is worth mentioning that they do not take into account the combined effect of IFRS and Big 4 audit firms.

The coefficient of *LN Assets* is positively significant, which is consistent with Watts and Zimmermann (1990) who argue that bigger firms engage more in earnings-decreasing earnings management than smaller firms. Further, control variable *ROA* and Fama and French classification groups telecommunication and shops are significant. The coefficient of *CFO* is as expected from previous research (Young, 1999; Aussenegg et al., 2008) negative and significant. Both significant regression models explain approximately 37% of the variance of negative discretionary accruals.

As presented in panel C *IFRS* is not significant for positive discretionary accruals. This is consistent with my reasoning in the second chapter. A positive significant coefficient of *B4NB4* is demonstrated, which implies that companies audited by a Big 4 audit firm report a higher value of positive discretionary accruals. However, this effect is neutralized when the interaction variable is included. The interaction variable by itself is not significant, which leads to the acceptance of the second hypothesis; there is no

significant difference in positive discretionary accruals between IFRS companies audited by a Big 4 audit firm compared to IFRS companies with a non-Big 4 auditor.

The following conclusions are drawn from observations of the control variables. Firstly, *ROA* is positive and significant, which is in contrast with findings of other studies (Van Tendeloo and Vanstraelen, 2008; Gao and Shrieves, 2002). Secondly, conform Young (1999) and Aussenegg et al. (2008) cash flow from operations is significant and has a negative coefficient. Thirdly, *LN Assets* and firms from telecommunication and health industries are significant. Both models are significant and have an explanatory power of approximately 60%, as presented in the bottom of panel C.

For none of the models *GROWTH* is significant, which is inconsistent with findings of Aussenegg et al. (2008). Probably, the dissimilarity in results is caused by differences in time horizons. Aussenegg et al. use an 11 year time horizon and suggest that growth firms might engage more in earnings management, because they try to overstate their earnings on a year by year basis to give a certain impression of the economic position and performance of the company. My research is based on one year, therefore I obtain only one growth number. Since it is, based on one year, difficult to assess whether a positive growth number is incidental or persistent over the years, it is in my research impossible to mention a firm with an increase in revenues a 'growth firm'. If the growth in revenues is incidental, the firm might be having not the hard incentive to beat earnings by year and therefore does not have the incentive to apply earnings management. This could declare why *GROWTH* do not affect the magnitude of earnings management.

When comparing the final results of this study with a similar research of Aussenegg et al., it seems that my results are partly in accordance. According to Aussenegg et al. the application of IFRS has no impact on the levels of earnings management in publicly held companies in the UK. The difference is that my study finds evidence that firms reporting under IFRS report higher magnitudes of negative discretionary accruals, while Aussenegg et al. do not.

A possible explanation why IFRS do not reduce earnings management in privately held firms is because IFRS is a principles-based accounting model. This system of financial reporting is based on the fundamentals of accounting, which are decision

usefulness, true and fair view, going concern, and substance over form (US SEC, 2002). The model allows more freedom of professional judgment. Therefore, principles-based models are more flexible than their counterpart, called rules-based accounting models. Such models are subject to very precise rules which make it clear what is allowed in financial reporting and what is not (Alexander and Jermakowicz, 2006). GAAP is seen as a rules-based model. Van Beest (2009) argues that principles-based models–due to the flexibility–provide more opportunities to apply earnings management by using accounting decisions. Since rules-based models are very strict, there is no or little room for applying earnings management through accounting decisions (Nobes, 2005). However, according to Nelson et al. (2002) these precise rules might be used for earnings management through transaction decisions. In conclusion, both models provide opportunities for managers to apply earnings management. These two opportunities to apply earnings management might neutralize each other, which would result in no significantly difference between GAAP and IFRS. This may be an explanation why absolute and positive discretionary accruals do not demonstrate differences between IFRS and UK GAAP companies in my research.

4.4 Sensitivity Analyses

To check the robustness of the previous presented results two sensitivity analyses are performed. First, the magnitude of discretionary accruals is also measured with the Modified Jones Model, since as mentioned in chapter 3 the Jones (1991) Model is criticized. By adjusting the original model for growth in credit sales, this model tries to reduce errors in which accruals are classified as non-discretionary while they are not. The results of the regression analysis of absolute discretionary accruals are shown in panel A of table 14 and are almost the same as for the original model. The model is significant and has an explanatory power of 29%. Consistent with the findings of the Jones Model, the modified version does not provide supporting evidence for a reducing effect of IFRS and Big 4 audit firms on discretionary accruals.

The results for negative discretionary accruals are equal to the Jones Model. As demonstrated in panel B, the IFRS variable is negative and significant, which indicates that firms reporting under IFRS engage more in earnings management. Also the

outcomes of positive discretionary accruals (panel C) do not show differences with the original Jones model.

Second, Dumontier and Raffournier (1998) and Glaum (2000) demonstrate that firms which have voluntarily adopted IFRS are larger than other firms, and according to El Gazzar et al. (1999) IFRS in Europe is adopted by companies with lower gearing factors. Therefore, Van Tendeloo and Vanstraelen (2005) suggest that the control variables for size (LNASSETS), cash flow from operations, return on assets and the gearing factor might take over some of the effects of IFRS or vice versa. For that reason the regression analysis for absolute discretionary accruals is performed with the next additional interaction variables: *IFRS * |CFO|, IFRS * GEARING,* and *IFRS * ROA*. The interaction variable with LNASSETS is excluded from the regression, since the VIF was 22. As demonstrated in table 15, the R^2 is a little bit higher compared to the regression without the extra interaction variables. Model 1 shows that firms reporting under IFRS report significantly more absolute discretionary accruals than companies reporting under GAAP. This is inconsistent with the findings of table 13, but it still confirms hypothesis 1. In model 2 this effect has disappeared. Furthermore, *IFRS * |CFO|* is the only significant interaction variable. As presented in the table there is a negative relationship between this interaction term and absolute discretionary accruals. This means that IFRS firms with higher absolute cash flows from operations report significantly lower magnitudes of discretionary accruals. This is inconsistent with Van Tendeloo and Vanstrealen (2005), who find a positive relationship.

5. Summary, Conclusion, Limitations and Future Research

The aim of this study is to investigate whether the adoption of IFRS by privately held firms influences the extent of earnings management. To determine earnings management, discretionary accruals are measured by using the Jones (1991) Model. To get clear insights in the direction of earnings management, the discretionary accruals are divided into an absolute, a negative, and a positive part. Another objective of this study is to examine the role of Big 4 audit firms on the extent of earnings management by

companies reporting under IFRS. To investigate these topics a research sample consisting of 409 IFRS companies and 409 GAAP companies from the United Kingdom in 2009 is used. The two types of companies are matched by total assets and industry classification codes (SIC). The data for this sample is collected from the Amadeus database.

The results of my study provide evidence that the adoption of IFRS in privately held companies is not associated with lower magnitudes of earnings management. On the contrary, companies which have adopted IFRS engage more in income-decreasing earnings management, since they report significantly more negative discretionary accruals than companies which have adopted GAAP. Reporting financial statements in accordance with IFRS do not have significant influence on the extent of absolute and positive discretionary accruals. The study does not provide evidence that Big 4 audit firms work as a constraint on the extent of earnings management in IFRS companies.

To test the robustness of the results two sensitivity tests are performed. These tests lead to the following conclusions. Firstly, measuring earnings management by using the Modified Jones Model does not provide evidence for other conclusion than the original Jones Model. Secondly, the addition of interaction variables–which might be influence the effect of *IFRS*–does not give other results regarding the influence of IFRS and Big 4 audit firms on earnings management.

This study contributes to the debate concerning the effect of IFRS on earnings management, since it is one of a few which focuses on the effect of the adoption of IFRS in private companies. Prior studies examined the role of the voluntary or mandatory adoption of IFRS in public companies. This research is the first, which compares IFRS and UK GAAP by private companies in the same year.

The results should be interpreted considering some limitations. First, because IFRS is recently adopted in Europe (2005) and because it is not mandatory for private companies to apply it, I could find only enough companies which applied IFRS for one year; 2009. Thus, the results are based on a relatively small sample of one year from one country (the UK). This could influence the reliability of the results. Second, to determine cash flows from operations an estimation is used (formula 6), since Amadeus does not provide cash flow from operations as a single number. It may be possible that the calculated amounts are not completely correct. Third, although I control for different

incentives to manage earnings and for firm characteristics, the explanatory powers of the regression models are respectively 29%, 37%, and 60%. This means that part of the variance in discretionary accruals is not explained by the used model, and that there are other incentives to manage earnings that have not been controlled for. And last, for the research it is assumed that discretionary accruals are a good measure for the extent of earnings management. Moreover, the research is conducted with the Jones (1991) Model, which has been criticized over the years, because it would have low explanatory power. This might negatively affect the results of my research.

For future research it is recommendable to take, if it is possible, a sample over a longer time horizon. The expectation is that in the next years more privately held companies will apply IFRS, since the number of these companies increased in the UK from about 50 in 2008 to more than 500 in 2009. To reach a final conclusion about the effect of IFRS on earnings management it is necessary to conduct studies with a longer time horizon after the application of IFRS. And last, it may be interesting to examine the effect of IFRS on earnings management by private companies in other countries in Europe. Perhaps, other European countries show different results.

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Appendix

Table 1: Previous research about IFRS and earnings management

Author(s)	Subject	Findings and conclusions
Christensen et al. (2008)	They compare public firms which **voluntarily** adopted IFRS before the adaption of IFRS with firms which are **forced** to apply IFRS in 2005.	They find that earnings management decreases after voluntary IFRS adoption. They do not find such a decrease for firms that resist IFRS until 2005. This suggests that IFRS do not per se improve accounting quality.
Callao and Jarne (2010)	They examine whether the **forced** application of IFRS in 2005 increases or decreases earnings management in public companies.	In the periods after the implementation of IFRS the magnitude of discretionary accruals increases, which indicates that firms which are forced to apply IFRS engage more in earnings management.
Jeanjean and Stolowy (2008)	They investigate whether the **mandatory** introduction of IFRS leads to a change in earnings management in public firms.	After the introduction of IFRS earnings management seems more pervasive in France, while there was no change in Australia and UK.
Paananen (2008)	He compares Swedish public companies before the adaption of IFRS (2004) with firms after the adaption (2006) and examines whether **mandatory** adaption of IFRS reduces earnings management.	His results suggest that there is no increase in financial reporting quality in the two years after the adoption. On the contrary, he finds indications that reporting quality decreases.
Paananen and Lin (2008)	They compare German public companies reporting under IAS (2000-2002), under **voluntary** IFRS (2003-2004) and under **mandated** IFRS (2005-2006).	They find a decrease in accounting quality over the last years. They suggest that this decrease is caused by changes in IFRS in the last years and not by the new adopters in 2005.
Ahmed et al. (2010)	They examine the effects of **mandatory** adoption of IFRS on earnings management in publicly held companies from 21 countries.	They provide evidence for a significant increase of income smoothing and a significant increase in aggressive reporting of accruals for firms which mandatorily adopt IFRS.
Van Tendeloo and Vanstraelen (2005)	They investigate the impact of the voluntary adoption of IFRS in German public firms, in the period prior 2005.	They find that IFRS-adopters do not report significantly less earnings management than companies reporting under German GAAP.
Aussenegg et al. (2008)	They examine whether the **voluntary** adoption of IFRS, before 2005, affects earnings management.	For Central European countries they find a decrease in earnings management, while the magnitude of earnings management does not show changes in the UK.
Zimmermann and Gontcharov (2006)	They compare German public firms which adopt IFRS **voluntarily** before it was mandated to apply IFRS.	They do not provide evidence for differences in earnings management between the two groups of firms.
Daske and Gebhardt (2006)	They compare listed firms from Switzerland, Germany, and Austria which **voluntarily** adapt IFRS with firms which use local accounting practices.	They find an increase in accounting reporting quality for firms voluntarily reporting under IFRS.
Barth et al. (2008)	They investigate whether **voluntarily** adopting IAS reduces earnings management in publicly held countries from 21 countries.	Firms that voluntarily applied IFRS engage less in earnings management.
Capkun et al. (2011)	In this study the effects of **voluntary** and mandatory IFRS adoption on earnings managements are examined.	They find that firms which have adopted IFRS voluntarily in the period before 2005 show a decrease in earnings management. After 2005 these voluntarily adopters show greater earnings management levels. They suggest that this is caused by changes in the flexibility of IFRS.

Table 2: Sample selection process all firms

My data are from the April 2011 version of the Amadeus database supplied by Bureau van Dijk. In Amadeus it is not possible to filter companies which apply IFRS. Therefore, I search for all privately held companies with the next required accounting information. Thereafter, I filter the IFRS firms in excel. Those results are shown in table 3.

Search step	**Number of firms**
Op. Revenue (Turnover): All companies with a known value, 2009, 2008, for all the selected periods	5,183,713
Legal form: Private	13,270,424
Region/Country/region in country: United Kingdom	2,970,026
Property, Plant and Equipment: All companies with a known value, 2009	9,140,094
Total assets: All companies with a known value, 2009, 2008, for all the selected periods	5,191,585
Current liabilities: All companies with a known value, 2009	5,216,614
Depreciation: All companies with a known value, 2009	4,943,215
US SIC (Primary codes only): all firms except financial institutions (SIC codes between 6000 and 6799), institutions in public administration (SIC codes above 9000)	15,603,809
Exclude subsidiaries: Def. of the UO: min. path of 50.01%, known or unknown shareh. Subs, owned by a company included in the group that are GUO or shareh. (min 50, max 100); (excl. subs. with unknown %)	55,135
Current assets: All companies with a known value, 2009, 2008, for all the selected periods	8,146,020
Cash & cash equivalent: All companies with a known value, 2009, 2008, for all the selected periods	7,020,498
Loans: All companies with a known value, 2009, 2008, for all the selected periods	6,538,182
Total	**47,236**

Table 3: Sample selection process IFRS firms

	Number of firms
Starting sample	548
I exclude firms from financial institutions (SIC codes between 6000 and 6799), institutions in public administration (SIC codes above 9000) and privately held subsidiaries of quoted companies as indicated in Amadeus. Further, I exclude firms with missing accounting information (Total assets (in year t, and year t-1), revenues (in year t, and year t-1), property plant and equipment, depreciation, current liabilities, current assets (in year t, and year t-1), cash and cash equivalents (in year t, and year t-1) and short term debt (in year t, and year t-1).	-76
Remaining data	472
Further I exclude firms with missing control variables (ROA, Gearing) and discretionary and total accruals lagged by scaled total assets with a value above 1. Also, the firms with the 1% smallest and largest values of all necessary variables are excluded from the sample.	-63
Final sample	**409**

Table 4: Fama and French industry classification

No.	Industry group	SIC-code
1	Consumer Non durables	0100-0999, 2000-2399, 2700-2749, 2770-2799, 3100-3199, 3940-3989
2	Consumer Durables	2500-2519, 2590-2599, 3630-3659, 3710-3711, 3714, 3716, 3750-3751, 3792, 3900-3939, 3990-3999
3	Manufacturing	2520-2589, 2600-2699, 2750-2769, 2800-2829, 2840-2899, 3000-3099, 3200-3569, 3580-3621, 3623-3629, 3700-3709, 3712-3713, 3715, 3717-3749, 3752-3791, 3793-3799, 3860-3899
4	Energy	1200-1399, 2900-2999
5	Business Equipment	3570-3579, 3622, 3660-3692, 3694-3699, 3810-3839, 7370-7379, 7391, 8730-8734
6	Telecommunication	4800-4899
7	Shops	5000-5999, 7200-7299, 7600-7699
8	Health	2830-2839, 3693, 3840-3859, 8000-8099
9	Utilities	4900-4949
10	Other	All other codes

Note:
Standard Industrial Classification (SIC) Code classifies industries by a four-digit code

Table 5: Number of observations by industry group

No.	Industry group	Number of observations	Percentage of total
1	Consumer Non durables	43	5.26
2	Consumer Durables	11	1.34
3	Manufacturing	114	13.94
4	Energy	21	2.57
5	Business Equipment	100	12.22
6	Telecommunication	29	3.55
7	Shops	144	17.60
8	Health	17	2.08
9	Utilities	13	1.59
10	Other	326	39.85

Table 6: Percentage Big 4 auditors

	IFRS Company	UK GAAP Company	Total
Big 4 Auditor	69%	53%	61%
Non-Big 4 Auditor	31%	47%	39%

Note:
The group of Big 4 audit firms consists of Ernst & Young, PwC, Deloitte and KPMG.

Table 7: Descriptive Statistics
Panel A: All firms

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Total Assets	818	111.52	234.13	0	16.94	1,746.38
Property, Plant, Equipment	818	50.86	143.76	0	3.97	1,309.24
Cash & Cash Equivalents	818	10.06	27.60	0	1.19	258.56
Current Assets	818	60.67	132.12	0	11.45	1,105.89
Loans	818	20.60	59.50	0	1.94	824.18
Current Liabilities	818	46.89	98.75	0	8.58	866.48
Depreciation	818	3.98	11.08	0	0.45	108.60
Revenues	818	108.28	256.79	0	19.85	2,777.55
Cash Flow From Operations	818	6.51	49.35	-692.45	0.52	375.41
Return On Assets	818	2.36	16.26	-90.88	3.45	60.45
Gearing	818	117.43	171.28	0	46.86	885.71
Growth	818	0.18	2.54	-1.17	0	66.09
$TACC/TA_{t-1}$	818	-0.017	0.23	-0.91	-0.029	0.96
$1/TA_{t-1}$	818	0.00033	0	0	0	0
$\Delta Rev/TA_{t-1}$	818	-0.024	0.76	-7.60	0	4.21
PPE/TA_{t-1}	818	0.34	-0.30	0	0.26	1.26

Panel B: IFRS firms

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Total Assets	409	117.20	252.04	0	19.08	1,680.44
Property, Plant, Equipment	409	63.56	178.61	0	4.30	1,309.24
Cash & Cash Equivalents	409	10.36	28.83	0	1.11	253.81
Current Assets	409	53.63	112.79	0	9.98	763.25
Loans	409	18.12	43.57	0	2.20	412.50
Current Liabilities	409	46.89	92.22	0	9.31	532.98
Depreciation	409	4.78	13.14	0	0.47	108.60
Revenues	409	112.66	285.69	-0.46	19.17	2,777.55
Cash Flow From Operations	409	12.57	50.59	-138.67	0.51	375.41
Return On Assets	409	0.58	16.95	-75.79	2.45	51.92
Gearing	409	103.78	172.01	0	23.79	885.71
Growth	409	0.12	1.34	-1.17	0	22.08

Panel C: UK GAAP firms

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Total Assets	409	105.85	214.89	0.14	19.87	1,746.38
Property, Plant, Equipment	409	38.15	95.70	0	3.84	673.58
Cash & Cash Equivalents	409	9.76	26.34	0	1.21	258.56
Current Assets	409	67.70	148.78	0	12.00	1,105.89
Loans	409	23.07	71.96	0	1.76	824.18
Current Liabilities	409	46.90	104.99	0	9.30	866.48
Depreciation	409	3.18	8.48	0	0.39	105.32
Revenues	409	103.90	224.45	0	22.53	1,602.09
Cash Flow From Operations	409	0.43	47.24	-692.45	0.53	249.88
Return On Assets	409	4.15	15.36	-90.88	4.35	60.45
Gearing	409	131.09	169.65	0	60.45	868.71
Growth	409	0.24	3.34	-0.94	0.011	66.09

Notes:
All values are in millions of Euros except for gearing, growth, and return on assets (ROA), which are in percentages, and for $TACC/TA_{t-1}$, $1/TA_{t-1}$, $\Delta Rev/TA_{t-1}$, and PPE/TA_{t-1} which are ratios.

LNAssets = natural logarithm of total assets to control for size
Gearing = ((non current liabilities + loans) / Shareholders funds) * 100
Return on Assets (ROA) = (profit (loss) for period / total assets) * 100
Growth = change in revenues (in percentage)
CFO = cash flow from operations (EBIT – TACC)

Table 8: Difference between means of IFRS and UK GAAP companies

	Difference mean	T-statistic
Total Assets	11.35	0.710
Property, Plant, Equipment	25.41	2.517**
Cash & Cash Equivalents	0.60	0.311
Current Assets	-14.07	-1.551
Loans	-4.95	-1.204
Current Liabilities	-0.0075	0.001
Depreciation	1.60	2.052*
Revenues	8.76	0.478
Cash Flow From Operations	12.14	3.494***
Return On Assets	-3.57	-3.165***
Gearing	-27.31	-2.311**
Growth	-0.12	-0.654

Notes:
* Significant at the 10 percent level (two tailed test)
** Significant at the 5 percent level (two tailed test)
*** Significant at the 1 percent level (two tailed test)

The tests are conducted by using a paired sample t-test.

Table 9: Difference between medians of IFRS and UK GAAP companies

	Z-value
Total Assets	-5.869***
Property, Plant, Equipment	-1.961*
Cash & Cash Equivalents	-1.274
Current Assets	-6.115***
Loans	-1.536
Current Liabilities	-4.039***
Depreciation	-1.299
Revenues	-4.321***
Cash Flow From Operations	-1.538
ROA	-3.320***
Gearing	-3.892***
Growth	-0.861

Notes:
* Significant at the 10 percent level (two tailed test)
** Significant at the 5 percent level (two tailed test)
*** Significant at the 1 percent level (two tailed test)

The tests are conducted by using a Wilcoxon test.

Table 10: Descriptive statistics of discretionary and total accruals

	N	|Mean|	Standard Deviation	Minimum	Maximum
|DACC|	818	0.1521	0.1638	0.00003778	0.9298
DACC < 0	382	0.1515	0.1669	-0.9233	-0.00007132
DACC ≥ 0	436	0.1523	0.1594	0.0003778	0.9298
Difference t-test		-0.06866			
TACC	818	0.01692	0.2261	-0.8799	0.9606
TACC < 0	477	0.1489	0.1535	-0.8799	-0.00014
TACC ≥ 0	341	0.1677	0.1769	0.000443	0.9606
Difference t-test		-1.5819			

Notes:
* Significant at the 10 percent level (two tailed test)
** Significant at the 5 percent level (two tailed test)
*** Significant at the 1 percent level (two tailed test)

DACC = Discretionary Accruals scaled by lagged total assets
TACC = Total accruals scaled by lagged total assets

Table 11: Univariate statistics of discretionary accruals

		Mean IFRS Company (N)	Mean UK GAAP Company (N)	Difference t-statistic
Total Sample	|DACC|	0.1606	0.1432	-2.3970**
	DACC < 0	-0.1711 (196)	-0.1309 (186)	2.3818**
	DACC ≥ 0	0.1517 (213)	0.1536 (223)	-0.1236
Big 4	|DACC|	0.1575 (283)	0.1465 (217)	0.7600
	DACC < 0	-0.1643 (128)	-0.1200 (86)	2.2093**
	DACC ≥ 0	0.1519 (155)	0.1579 (131)	-0.3108
Non-Big 4	|DACC|	0.1674 (126)	0.1436 (192)	1.2507
	DACC < 0	-0.1838 (68)	-0.1402 (100)	1.5580
	DACC ≥ 0	0.1483 (58)	0.1473 (92)	-0.03760

Notes:
* Significant at the 10 percent level (two tailed test)
** Significant at the 5 percent level (two tailed test)
*** Significant at the 1 percent level (two tailed test)

Table 12: Pearson correlation matrix
Panel A: Absolute discretionary accruals

	|DACC|	IFRS	B4BN4	IFRS * B4NB4	LN Assets	Gearing	ROA	Growth	|CFO|	VIF
|DACC|	1									
IFRS	.053	1								2.773
B4NB4	-.006	.166**	1							2.390
IFRS * B4NB4	.025	.727**	.580**	1						4.083
LN Assets	.147**	0.002	.467**	.172**	1					1.408
GEARING	.070*	-.080*	.027	-0.028	-.092**	1				1.037
ROA	.021	-.110**	-.040	-.089**	-.014	-.007	1			1.028
Growth	.036	-.023	.045	-.004	0.053	-.024	-.010	1		1.043
|CFO|	.508**	.048	-.077*	-.035	-.210**	-.016	.068	-.025	1	1.083

Panel B: Negative discretionary accruals

	DACC	IFRS	B4BN4	IFRS * B4NB4	LN Assets	Gearing	ROA	Growth	CFO	VIF
DACC	1									
IFRS	-.121*	1								2.466
B4NB4	.034	.192**	1							2.538
IFRS * B4NB4	-.055	.692**	.629**	1						3.945
LN Assets	.177**	.049	.485*	.237**	1					1.415
GEARING	-.036	-.069	-.017	-.058	.046	1				1.025
ROA	.051	-.095	-.004	-.064	-.039	-.015	1			1.368
Growth	-.084	.021	.051	.050	.047	-.036	-.031	1		1.024
CFO	-.425**	-.073	.071	.045	-.063	.051	.459**	-.054	1	1.351

Panel C: Positive discretionary accruals

	DACC	IFRS	B4BN4	IFRS * B4NB4	LN Assets	Gearing	ROA	Growth	CFO	VIF
DACC	1									
IFRS	-.008	1								3.180
B4NB4	.021	.148**	1							2.302
IFRS * B4NB4	-.002	.760**	.538**	1						4.436
LN Assets	-.124**	-.031	.440**	.115*	1					1.343
GEARING	.097*	-.086	.053	-.009	.114*	1				1.076
ROA	.096*	-.122*	-.097*	-.119*	-.018	-.036	1			1.456
Growth	.032	-.036	.048	-.018	.057	-.027	.002	1		1.079
CFO	-.585**	-.032	-.019	.008	.087	-.109*	.532**	0.006	1	1.487

Notes:
* Significant at the 5 percent level (two tailed test)
** Significant at the 1 percent level (two tailed test)

LNAssets = natural logarithm of total assets
Gearing = ((non current liabilities + loans) / Shareholders funds) * 100
Return on Assets (ROA) = (profit (loss) for period / total assets) * 100
Growth = change in revenues (in percentage)
CFO = cash flow from operations (EBIT – TACC)

Table 13: Regression Analyses: magnitude of discretionary accruals

Panel A: Absolute discretionary accruals

	Model 1			Model 2		
Variable	**Coefficient**	**t-statistic**	**Sig.**	**Beta**	**t-statistic**	**Sig.**
Intercept	0.122	4.376	0.000***	0.122	4.379	0.000***
IFRS	0.008	0.754	0.451	0.005	0.284	0.776
B4NB4	0.023	1.959	0.050*	0.020	1.314	0.189
IFRS * B4NB4				0.005	0.232	0.817
LN Assets	-0.014	-2.226	0.026*	-0.014	-2.177	0.030*
Gearing	6.368E-5	2.214	0.027*	6.349E-5	2.205	0.028*
ROA	2.669E-5	0.088	0.930	2.589E-5	0.086	0.932
Growth	0.004	1.882	0.060	0.004	1.884	0.060
|CFO|	0.319	15.976	0.000***	0.319	15.930	0.000***
FF 1	0.017	0.741	0.459	0.017	0.742	0.458
FF 2	-0.051	-1.196	0.232	-0.051	-1.199	0.231
FF 3	-0.030	-1.985	0.048*	-0.030	-1.977	0.048*
FF 4	-0.037	-1.148	0.251	-0.037	-1.142	0.254
FF 5	0.034	2.162	0.031*	0.035	2.170	0.030*
FF 6	0.038	1.415	0.157	0.038	1.408	0.159
FF 7	-0.009	-0.656	0.512	-0.009	-0.666	0.505
FF 8	0.074	2.138	0.033*	0.073	2.119	0.034*
FF 9	-0.042	-1.075	0.283	-0.042	-1.080	0.280
N	818			818		
R^2 (Adjusted R^2)	0.293 (0.279)			0.293 (0.278)		
F	20.722***			19.483***		

Panel B: Negative discretionary accruals

	Model 1			Model 2		
Variable	**Coefficient**	**t-statistic**	**Sig.**	**Beta**	**t-statistic**	**Sig.**
Intercept	-0.277	-7.221	0.000***	-0.271	-7.033	0.000***
IFRS	-0.046	-3.207	0.001***	-0.075	-3.482	0.001***
B4NB4	-0.007	-0.451	0.652	-0.034	-1.551	0.122
IFRS * B4NB4				0.053	1.812	0.071
LN Assets	0.047	4.956	0.000***	0.049	5.121	0.000***
Gearing	-3.283E-5	-0.734	0.463	-3.132E-5	-0.702	0.483
ROA	0.003	6.347	0.000***	0.003	6.475	0.000***
Growth	-0.011	1.373	0.171	-0.011	-1.415	0.158
CFO	-0.291	-12.528	0.000***	-0.297	-12.697	0.000***
FF 1	0.005	0.143	0.887	0.003	0.094	0.925
FF 2	0.011	0.199	0.843	0.013	0.230	0.818
FF 3	0.038	1.653	0.099	0.038	1.654	0.099
FF 4	0.018	0.374	0.709	0.020	0.429	0.668
FF 5	-0.014	-0.621	0.535	-0.010	-0.474	0.636
FF 6	-0.096	-2.359	0.019**	-0.099	-2.433	0.015**
FF 7	0.061	3.004	0.003***	0.059	2.900	0.004***
FF 8	0.023	0.431	0.666	0.015	0.289	0.772
FF 9	0.065	1.397	0.163	0.065	1.381	0.168

N	381			381		
R^2 (Adjusted R^2)	0.373 (0.345)			0.379 (0.350)		
F	13.570***			13.045***		

Panel C: Positive discretionary accruals

	Model 1			**Model 2**		
Variable	**Coefficient**	**t-statistic**	**Sig.**	**Beta**	**t-statistic**	**Sig.**
Intercept	0.134	4.886	0.000***	0.137	4.961	0.000***
IFRS	0.006	0.593	0.553	-0.010	-0.578	0.563
B4NB4	0.031	2.618	0.009**	0.020	1.243	0.214
IFRS * B4NB4				0.025	1.131	0.259
LN Assets	-0.016	-2.544	0.011**	-0.015	-2.361	0.019**
Gearing	1.937E-5	0.695	0.487	1.692E-5	0.605	0.545
ROA	0.006	15.250	0.000***	0.006	15.285	0.000***
Growth	0.002	1.186	0.236	0.002	1.204	0.229
CFO	-0.550	-23.303	0.000***	-0.553	-23.292	0.000***
FF 1	0.015	0.663	0.508	0.016	0.716	0.474
FF 2	0.011	0.238	0.812	0.009	0.185	0.853
FF 3	-0.005	-0.304	0.761	-0.004	-0.256	0.798
FF 4	0.009	0.287	0.774	0.010	0.312	0.755
FF 5	0.018	1.063	0.289	0.018	1.097	0.273
FF 6	0.067	2.544	0.011**	0.066	2.520	0.012**
FF 7	0.009	0.630	0.529	0.008	0.569	0.570
FF 8	0.096	2.856	0.004***	0.095	2.803	0.005***
FF 9	0.009	0.180	0.857	0.008	0.145	0.885
N	435			435		
R^2 (Adjusted R^2)	0.599 (0.584)			0.601 (0.584)		
F	39.182***			36.977***		

Notes:
* Significant at the 10 percent level (two tailed test)
** Significant at the 5 percent level (two tailed test)
*** Significant at the 1 percent level (two tailed test)

Model 1: $$DACC_{it} = \beta_0 + \beta_1 * IFRS + \beta_2 * B4NB4 + \beta_3 * IFRS * B4NB4 + \beta_4 * LNASSETS + \beta_5 * GEARING + \beta_6 * ROA + \beta_7 * GROWTH + \beta_8 * CFO + \beta_9 * IND$$

Model 2: $$DACC_{it} = \beta_0 + \beta_1 * IFRS + \beta_2 * B4NB4 + \beta_3 * LNASSETS + \beta_4 * GEARING + \beta_5 * ROA + \beta_6 * GROWTH + \beta_7 * CFO + \beta_8 * IND$$

DACC = value of discretionary accruals, estimated by the Jones model
IFRS = dummy variable for accounting practice (IFRS = 1, GAAP = 0)
B4NB4 = dummy variable for audit company (Big-4 company = 1, non-Big 4 company = 0)
LNAssets = natural logarithm of total assets to control for size
Gearing = ((non current liabilities + loans) / Shareholders funds) * 100
Return on Assets (ROA) = (profit (loss) for period / total assets) * 100
Growth = change in revenues (in percentage)

CFO = cash flow from operations (EBIT – TACC)
IND = dummy variables for different industries based on the Fama and French classification (see table 4). Group 10 is taken as the basis.

Table 14: Robustness check of results: Modified Jones Model
Panel A: Absolute discretionary accruals

	Model 1			Model 2		
Variable	**Coefficient**	**t-statistic**	**Sig.**	**Beta**	**t-statistic**	**Sig.**
Intercept	0.127	4.547	0.000***	0.127	4.549	0.000***
IFRS	0.007	0.748	0.455	0.005	0.297	0.766
B4NB4	0.024	2.035	0.042*	0.021	1.383	0.167
IFRS * B4NB4				0.004	0.212	0.833
LN Assets	-0.015	-2.374	0.018**	-0.015	-2.327	0.020**
Gearing	6.384E-5	2.206	0.028*	6.366E-5	2.197	0.028*
ROA	5.705E-5	0.188	0.851	5.636E-5	0.186	0.853
Growth	0.004	1.905	0.057	0.004	1.906	0.057
|CFO|	0.317	15.806	0.000***	0.317	15.759	0.000***
FF 1	0.017	0.763	0.446	0.017	0.764	0.445
FF 2	-0.053	-1.231	0.219	-0.053	-1.234	0.218
FF 3	-0.032	-2.064	0.039*	-0.031	-2.057	0.040*
FF 4	-0.038	-1.180	0.238	-0.038	-1.175	0.240
FF 5	0.035	2.170	0.030*	0.035	2.177	0.030*
FF 6	0.038	1.396	0.163	0.038	1.389	0.165
FF 7	-0.011	-0.774	0.439	-0.011	-0.783	0.434
FF 8	0.073	2.089	0.037*	0.072	2.072	0.039*
FF 9	-0.045	-1.150	0.251	-0.046	-1.154	0.249
N	818			818		
R^2 (Adjusted R^2)	0.292 (0.278)			0.292 (0.277)		
F	20.559***			19.329***		

Panel B: Negative discretionary accruals

	Model 1			Model 2		
Variable	**Coefficient**	**t-statistic**	**Sig.**	**Beta**	**t-statistic**	**Sig.**
Intercept	-0.279	-7.343	0.000***	-0.271	-7.135	0.000***
IFRS	-0.048	-3.393	0.001***	-0.079	-3.671	0.000***
B4NB4	-0.007	-0.413	0.680	-0.034	-1.577	0.116
IFRS * B4NB4				0.054	1.903	0.058
LN Assets	0.048	5.118	0.000***	0.050	5.282	0.000***
Gearing	-3.610E-5	-0.814	0.416	-3.416E-5	-0.773	0.440
ROA	0.003	6.338	0.000***	0.003	6.467	0.000***
Growth	-0.009	-1.212	0.226	-0.010	-1.254	0.211
CFO	-0.288	-12.493	0.000***	-0.294	-12.680	0.000***
FF 1	0.001	0.015	0.988	-0.001	-0.037	0.970
FF 2	0.008	0.149	0.881	0.010	0.184	0.854
FF 3	0.034	1.494	0.136	0.034	1.500	0.135
FF 4	0.012	0.265	0.791	0.015	0.326	0.745
FF 5	-0.016	-0.752	0.453	-0.013	-0.595	0.552

FF 6	-0.096	-2.375	0.018**	-0.099	-2.451	0.015**
FF 7	0.058	2.876	0.004***	0.056	2.770	0.006**
FF 8	0.020	0.391	0.696	0.013	0.243	0.808
FF 9	0.065	1.393	0.164	0.064	1.382	0.168
N	386			386		
R^2 (Adjusted R^2)	0.370 (0.343)			0.376 (0.347)		
F	13.587***			13.092***		

Panel C: Positive discretionary accruals

	Model 1			**Model 2**		
Variable	**Coefficient**	**t-statistic**	**Sig.**	**Beta**	**t-statistic**	**Sig.**
Intercept	0.140	4.979	0.000***	0.142	5.053	0.000***
IFRS	0.005	0.437	0.662	-0.012	-0.664	0.507
B4NB4	0.032	2.634	0.009**	0.020	1.244	0.214
IFRS * B4NB4				0.025	1.127	0.261
LN Assets	-0.018	-2.790	0.006**	-0.017	-2.597	0.010**
Gearing	2.401E-5	0.847	0.397	2.142E-5	0.754	0.451
ROA	0.006	15.176	0.000***	0.006	15.212	0.000***
Growth	0.002	1.351	0.178	0.002	1.368	0.172
CFO	-0.557	-23.053	0.000***	-0.560	-23.050	0.000***
FF 1	0.019	0.820	0.412	0.020	0.870	0.385
FF 2	0.013	0.265	0.791	0.010	0.211	0.833
FF 3	0.004	-0.263	0.793	-0.003	-0.219	0.827
FF 4	0.008	0.241	0.810	0.009	0.265	0.791
FF 5	0.019	1.139	0.255	0.020	1.169	0.243
FF 6	0.071	2.644	0.009**	0.070	2.617	0.009**
FF 7	0.009	0.611	0.541	0.008	0.546	0.585
FF 8	0.097	2.821	0.005***	0.095	2.767	0.006**
FF 9	0.010	0.191	0.849	0.008	0.154	0.878
N	430			430		
R^2 (Adjusted R^2)	0.598 (0.582)			0.599 (0.582)		
F	38.431***			36.269***		

Notes:
* Significant at the 10 percent level (two tailed test)
** Significant at the 5 percent level (two tailed test)
*** Significant at the 1 percent level (two tailed test)

Table 15: Regression analysis with extra interaction variables (absolute discretionary accruals)

	Model 1			Model 2		
Variable	**Coefficient**	**t-statistic**	**Sig.**	**Beta**	**t-statistic**	**Sig.**
Intercept	0.107	3.745	0.000***	0.116	4.000	0.000***
IFRS	0.032	2.197	0.028*	0.030	1.505	0.133
B4NB4	0.020	1.795	0.073	0.020	1.280	0.201
IFRS * B4NB4				0.000	-0.011	0.991
LN Assets	-0.014	-2.147	0.032*	-0.015	-2.303	0.022**
Gearing	2.760E-5	0.683	0.495	2.419E-5	0.587	0.557
ROA	0.000	-0.453	0.651	0.000	-0.320	0.749
Growth	0.004	1.914	0.056	0.004	1.860	0.063
|CFO|	0.422	13.019	0.000***	0.411	12.442	0.000***
IFRS * |CFO|	-0.162	-4.040	0.000***	-0.155	-3.783	0.000***
IFRS * Gearing	7.221E-5	1.280	0.201	7.589E-5	1.318	0.188
IFRS * ROA	0.000	0.434	0.664	0.000	0.353	0.724
FF 1	0.018	0.793	0.428	0.018	0.783	0.434
FF 2	-0.060	-1.410	0.159	-0.058	-1.346	0.179
FF 3	-0.030	-1.988	0.047*	-0.031	-2.014	0.044*
FF 4	-0.044	-1.382	0.167	-0.043	-1.330	0.184
FF 5	0.030	1.934	0.053	0.028	1.746	0.081
FF 6	0.039	1.461	0.144	0.043	1.577	0.115
FF 7	-0.012	-0.843	0.400	-0.012	-0.852	0.395
FF 8	0.077	2.233	0.026*	0.077	2.196	0.028*
FF 9	-0.053	-1.346	0.179	-0.060	-1.514	0.130
N	818			818		
R^2 (Adjusted R^2)	0.308 (0.292)			0.295 (0.277)		
F	18.706***			16.680***		

Notes:
* Significant at the 10 percent level (two tailed test)
** Significant at the 5 percent level (two tailed test)
*** Significant at the 1 percent level (two tailed test)

Model 1:
$$|DACC_{it}| = \beta_0 + \beta_1 * IFRS + \beta_2 * B4NB4 + \beta_3 * LNASSETS + \beta_4 * GEARING + \beta_5 * ROA + \beta_6 * GROWTH + \beta_7 * |CFO| + \beta_8 * IFRS * |CFO| + \beta_9 * IFRS * Gearing + \beta 10 * IFRS * ROA + \beta_{12} * IND$$

Model 2:
$$|DACC_{it}| = \beta_0 + \beta_1 * IFRS + \beta_2 * B4NB4 + \beta_3 * IFRS * B4NB4 + \beta_4 * LNASSETS + \beta_5 * GEARING + \beta_6 * ROA + \beta_7 * GROWTH + \beta_8 * |CFO| + \beta_9 * IFRS * |CFO| + \beta_{10} * IFRS * Gearing + \beta_{11} * IFRS * ROA + \beta_{12} * IND$$