

Incentives or standards: What determines accounting quality changes around IFRS adoption?

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Abstract: We examine the impact of incentives on accounting quality changes around IFRS adoption. In particular, we examine earnings management and timely loss recognition, constructs often used to assess accounting standards quality. While existing literature documents accounting quality improvements following IFRS adoption, we find that improvements are confined to firms with incentives to adopt. Further, we find that firms that resist IFRS have closer connections with banks and inside shareholders, which could explain these firms' lack of incentives to adopt IFRS. The overall results indicate that incentives dominate accounting standards in determining accounting quality.

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1. Introduction

We examine whether the adoption of International Financial Reporting Standards¹ (IFRS) leads to accounting quality improvements. Following the recent adoption of IFRS in many regions of the world, much attention is being given to the association between accounting standards and accounting quality. Existing studies document improvements in accounting quality following voluntary IFRS adoption (e.g., Barth et al., 2006; Gassen and Sellhorn, 2006; Hung and Subramanyam, 2007; Barth et al., 2008). Yet the extent to which we could expect the same improvement for firms forced to adopt remains an interesting and open question. By examining this question we provide evidence on whether accounting standard regulations per se improve information in capital markets.

To isolate the effect of IFRS we need a setting where we can identify corporate incentives. Germany offers such a setting. Between 1998 and 2005 firms in Germany could voluntarily adopt IFRS; in 2005 compliance became mandatory. The German setting is unique because it enables comparison of firms that voluntarily adopted IFRS before 2005 (firms that perceive net benefits of doing so) and firms that were forced to comply as of 2005 (firms that perceive no net benefits of doing so). This is different from simply comparing the consequences of mandatory adoption when the latter group includes firms from countries not allowing voluntary adoption or where voluntary adoption is uncommon, as mandatory IFRS adoption in countries without voluntary adoption does not distinguish the underlying incentives. To highlight this important distinction in our German setting, we define firms that delayed adoption of IFRS until 2005 as “resisters” rather than mandatory adopters.

German accounting regulation (Handelsgesetzbuch - HGB) is generally perceived as lower quality than IFRS (e.g., Leuz and Verrecchia, 2000) given its code-law origin and insider orientation (Leuz and Wüstemann, 2004). One way to define the quality of accounting standards is in terms of the quality of the financial statements prepared according to them, holding incentives constant. We argue that incentives among IFRS resisters are likely to stay constant around the time of adoption whereas this is

¹ International Financial Reporting Standards (IFRS) covers both IFRS issued by the International Accounting Standard Board (IASB) and International Accounting Standards (IAS) issued by the IASB's predecessor the International Accounting Standards Committee (IASC).

unlikely to be the case for voluntary adopters. Thus, in Germany we have an interesting setting where we are able to investigate the complex interaction between incentives and accounting standards in determining accounting quality. In essence, the German setting allows us to test whether accounting quality improves when firms are forced to comply with what is generally perceived as higher quality accounting standards. Although the sample size is relatively small in our single-country setting, this is compensated by the fact that we are able to explicitly observe the voluntary adoption versus resistance choices of all firms. We are therefore able to more accurately partition firms according to their underlying incentives than prior research that relies on proxies (Christensen et al., 2007; Daske et al., 2007a; Daske et al., 2007b).

We examine two dimensions of accounting quality, namely, earnings management and timely loss recognition, which are often used in studies on the effects of accounting standards on accounting quality (e.g., Van tendeloo and Vanstraelen, 2005; Barth et al., 2006; Gassen and Sellhorn, 2006; Hung and Subramanyam, 2007; Barth et al., 2008). These two constructs are especially relevant to our research question because they rely on managerial discretion and are therefore likely to be influenced by the incentives of those preparing the financial statements.

Consistent with prior literature, we find that voluntary adoption of IFRS is associated with decreased earnings management and more timely loss recognition. In stark contrast, we find no evidence of such accounting quality improvements for firms that are forced to adopt IFRS. The results suggest that adoption of IFRS (which is generally perceived to be of higher quality than HGB) does not necessarily lead to higher quality accounting, at least not when the preparers have no incentives to adopt. There are two potential explanations for this finding. First, the flexibility embedded in IFRS might render it ineffective in restricting earnings management of firms with low incentives to comply. Second, IFRS might not be sufficient to decrease earnings management and increase timely loss recognition. In this case, the observed accounting quality improvements for voluntary adopters could be driven by changes in incentives of these firms around the time of their adoption. Although we are unable to distinguish between these explanations, they are both consistent with IFRS per se not increasing accounting quality even when firms' prior accounting standards are

generally viewed as lower quality. Additional tests confirm the existence of temporal effects in accounting quality improvements over our sample period among both voluntary adopters and resisters. However, this result does not explain the entire difference in quality changes we observe between the two groups. The fact that the temporal effect exerts an influence on firms irrespective of accounting standards further supports our inference that the accounting quality improvements among voluntary IFRS adopters cannot be attributed to standards per se.

In further analysis we attempt to gauge why some firms resist IFRS adoption. We show that these firms have closer relationships with banks, less demand for information from capital markets, and more concentrated ownership. These findings are consistent with prior literature and suggest that resisters have closer relationships with insiders. For such firms financial reporting may consequently serve the purpose of contracting with known insiders rather than relatively anonymous outsiders. We argue that this could explain why these firms resist IFRS and perhaps why they have no incentives to engage in less earnings management and more timely loss recognition subsequent to IFRS adoption.

In related work, Ball et al. (2003) provide empirical evidence at the country level consistent with accounting quality being driven by incentives rather than accounting standards. They argue that incentives are driven by the firms' institutional setting. Further, Ball and Shivakumar (2005) and Burghstahler et al. (2006) show that earnings quality is lower for private than public firms despite applying the same accounting standards. Our contribution to this literature is to document that even among publicly listed firms within the same institutional setting, incentives dominate accounting standards in determining accounting quality. In most countries accounting standards are identical for all listed firms yet incentives are likely to vary. Our results suggest that the objective of improving accounting quality cannot be achieved for all firms by mandating higher quality accounting standards, because such attempts will have limited effect for firms without incentives to comply.

The remainder of the paper is organized as follows. Section 2 reviews the prior literature, describes the unique features of the institutional setting in Germany and develops the hypothesis. Section 3 explains the research design and the data sources.

Section 4 presents the empirical findings and Section 5 provides additional analyses on the insider characteristics of resisters relative to voluntary adopters. Section 6 concludes.

2. Prior literature, institutional setting and hypothesis development

2.1. Prior literature

Two streams of literature are relevant to our study: studies on the association between IFRS and accounting quality, and studies investigating the interaction between incentives and accounting standards in determining accounting quality. We examine how incentives affect quality changes around IFRS adoption and consequently contribute to both streams of literature.

2.1.1. IFRS and accounting quality

Van Tendeloo and Vanstraelen (2005) and Goncharov (2005) find no differences in earnings management between German firms that voluntarily adopted IFRS prior to 2001 and German firms that applied HGB. In contrast, Gassen and Sellhorn (2006) find that German firms that voluntarily adopted IFRS from 1998 to 2004 have more persistent, less predictable and more conditionally conservative earnings than a matched group of German firms applying HGB. Hung and Subramanyam (2007) reach a similar conclusion for a sample of German firms adopting IFRS voluntarily between 1998 and 2002. Rather than focus on cross-sectional differences between firms, however, Hung and Subramanyam exploit the fact that firms adopting IFRS restate their comparative figures and compare net income and net equity under HGB and IFRS for the same firm-years. Consistent with IFRS being associated with higher quality accounting, Barth et al. (2006; 2008) find that an international sample of firms that voluntarily adopted IFRS up to 2003 exhibits lower levels of earnings management and more timely loss recognition than a matched sample of firms using local GAAP. As an extension of these findings, Daske et al. (2007a) focus on the heterogeneity in the consequences of voluntary IFRS adoption and find that on average capital markets respond modestly to voluntary IFRS reporting. However, consistent with their predictions, they find that "serious" adopters experience

significantly stronger effects on their cost of capital and market liquidity than “label” adopters, suggesting that for some firms the quality of financial reporting improves in association with voluntary IFRS adoption.

Overall the evidence on the association between voluntary IFRS adoption and accounting quality is mixed, although papers applying more recent data generally find relatively better accounting quality among the firms that adopt IFRS. A common feature of these studies is that they are based on voluntary IFRS adopters. This raises the question as to whether we can attribute the improved quality to the application of IFRS per se. That is, does the application of IFRS have an incremental effect on accounting quality, or is the observed quality improvement the result of other changes implemented simultaneously by the adopting firms?² Our study distinguishes between these two effects by comparing changes in accounting quality around IFRS adoption for a group of firms with incentives to adopt to those for a group of firms with no incentives to adopt. In a concurrent study, Daske et al. (2007b) examine the capital market effects of mandatory IFRS. They find evidence that is consistent with reduced information asymmetry in association with mandatory IFRS adoption. They argue that the effect could be driven by network effects rather than accounting quality improvements. However, consistent with our results Daske et al. find that the effect is concentrated among firms with incentives to adopt IFRS. In a similar spirit, Lee et al. (2008) argue that if IFRS matters, then firms in countries that had lower disclosure quality and dependence on equity financing prior to mandatory IFRS should experience a greater impact after mandatory adoption. However, using implied cost of equity capital as an indicator, they find no effect among such countries even after two years under the new accounting standards.

2.1.2. Incentives and accounting standards

A stream of research examines the interaction between incentives and accounting standards in determining accounting quality. Ball et al. (2003) exploit a unique setting that exists in East Asia, where a number of countries have adopted accounting standards that derive from common-law sources yet have institutional features similar

² This argument is developed further in Section 2.3.

to code-law countries. They document that accounting quality in these countries is similar to code-law countries despite the application of common-law accounting standards. Ball and Shivakumar (2005) and Burghstahler et al. (2006) examine public and private firms within the same country. Both studies find that earnings quality is lower among private than public firms despite these firms facing equivalent regulations on auditing, accounting standards and taxation. These results are consistent with incentives and market forces dominating accounting standards as the main determinants of accounting quality. The papers in this stream of research argue that incentives are shaped by differences in institutions and market forces either among countries or due to listing status. We contribute to this stream of research by examining whether incentives also dominate accounting standards among listed firms operating in the same institutional setting.

Related to this stream of literature is the discussion of accounting harmonization and subsequent convergence (Joos and Lang, 1994; Land and Lang, 2002; Joos and Wysocki, 2006; Bradshaw and Miller, 2007). Ball (2001) argues that international accounting convergence is unlikely to be achieved by harmonizing accounting standards alone. The argument is that the uniform accounting standards that have promoted (e.g., IFRS) were developed to satisfy the needs of common-law countries (like the US and UK), where public information channels reduce information asymmetry between corporate managers and financial statement users; in those parts of the world where private information channels are the prevailing way to reduce information asymmetry, this model is unlikely to be successful. Our results support the argument in Ball (2001) and suggest that although accounting harmonization may occur as a consequence of market forces, it is unlikely to happen as a consequence of the mandatory adoption of the same accounting standards.

2.2. The institutional setting in Germany

Germany is generally classified as a code-law country (e.g., La Porta et al., 1998; Ball et al., 2000; Leuz et al., 2003) with limited investor protection and an insider orientation (Leuz and Wüstemann, 2004). HGB is generally perceived as lower quality than IFRS (e.g., Leuz and Verrecchia, 2000; Gassen and Sellhorn, 2006). The lower quality is often attributed to HGB's code-law origin, tradition for prudence and

tax alignment. However, HGB prescribes that the sole purpose of consolidated statements is to facilitate decision making (Leuz, 2003; Gassen and Sellhorn, 2006), so the perceived quality differences cannot be attributed entirely to legal issues.

In Germany voluntary IFRS and US GAAP adoption began in the early 1990s under dual reporting, where some firms voluntarily decided to prepare two sets of consolidated statements, one complying with HGB and another complying with either IFRS or US GAAP. Starting in 1998 firms were no longer required to disclose HGB consolidated statements if they produced either IFRS or US GAAP consolidated statements (see regulation KapEAG). The lack of required dual reporting and the introduction of stock exchange segments that require the application of either IFRS or US GAAP (Neuer Markt and later Prime Standards on the Frankfurt Stock Exchange) greatly increased the number of voluntary adopters. In 2002 the European Union (EU) formally implemented a regulation that made IFRS mandatory from 2005 onward for all EU listed firms including those domiciled in Germany. Against this evolution in the set of choices available to German firms, 59% voluntarily adopted IFRS and 41% waited until 2005 when it became mandatory.³

Because we can observe all German firms' actual accounting standard choices we are able to accurately classify firms according to their perception of IFRS. This allows for comparison of a group of firms that perceive net benefits of IFRS to a group of firms that resists IFRS. Thus, the German setting provides a unique opportunity to examine the interaction between accounting standards and incentives.

2.3. Hypothesis development

We hypothesize that IFRS is only associated with accounting quality improvements when firms have incentives to adopt. There are two distinct, but not mutually exclusive, explanations that support this outcome. First, prior literature on the determinants of voluntary IFRS adoption document that firms raise more external capital subsequent to compliance (e.g., Ashbaugh, 2001; Tarca, 2004; Cuijpers and

³ This is based on our sample that includes all firms available in Datastream after excluding firms complying with US GAAP, firms with missing data and firms that are not required to adopt IFRS because they do not produce consolidated statements. (See Table 1; 177/433 = 41 %).

Buijink, 2005). These results suggest that voluntary adopters experience changes to their incentives around the time they adopt IFRS. Consequently, it is likely that at least part of the observed quality improvements around voluntary adoption is driven by the changing incentives rather than the standards per se. Second, IFRS is (for good reasons) principles-based and offers corporate managers significant discretion. It is possible that firms that have no incentives to adopt IFRS respond to mandatory compliance with a “tick-box” mentality, rather than sincere efforts to adopt the new standards, perhaps to reduce compliance costs. Although these two explanations are fundamentally different they are both consistent with IFRS per se not leading to quality improvements. In the remainder of this section we develop each explanation in turn.

2.3.1. Voluntary adoption and accounting quality changes

The purpose of financial reporting is essentially to reduce information asymmetry between corporate managers and parties contracting with their firm (Watts, 1977; Ball, 2001). The contracting parties may be shareholders, lenders, suppliers, customers, employees and many other firm stakeholders. As financial reporting develops to facilitate efficient contracting, i.e., maximize firm value⁴ (Watts and Zimmerman, 1990), the relative importance of different user groups and their differential information needs influence how a particular manager applies the discretion available to her in financial reporting.

Now assume that a firm experiences a positive shock to its growth options. To exploit these new growth opportunities the firm needs external financing. Contracting with outside investors is better facilitated when earnings are not managed and losses are recognized in a timely way (Ball et al., 2000; Watts, 2003). Thus, in order to attract cheaper external financing the firm improves financial reporting along these two dimensions. In this scenario there are essentially two broad categories of explanations for why a firm may voluntarily adopt IFRS in the process. The first implies that IFRS

⁴ This does not imply that firms always maximize the value of outsider owned equity listed on the stock exchange. The total value of the firm equals the market value of insider equity, outsider equity, and debt.

has an incremental effect on accounting quality while the second suggests that it is a manifestation of other underlying factors.

To elaborate, the first category of explanations suggests that voluntary IFRS adoption could be desirable because the rules themselves reduce earnings management and increase timely loss recognition. This may happen because IFRS limits the options available to managers. Consistent with this explanation IASC and later IASB have eliminated alternatives available to management under IFRS since the beginning of the Comparability and Improvement Project in 1989 (iasplus.com). The alternative category of explanations suggests that voluntary IFRS adoption may simply correlate with other managerial motives. First, IFRS may offer firms a clean break in order to move to a higher quality. It is possible that the firm could have achieved the same quality improvements under HGB but this would have involved changing accounting choices and implicitly accepting that previous practices were less informative; a change to a new set of standards allows firms to adopt new practices without having to acknowledge the sins of the past. Second, the act of adoption itself may signal a change in incentives. For instance, assuming there is a need to acquire foreign capital, IFRS adoption may raise the profile of the firm among foreign investors. Finally, IFRS adoption prior to 2005 could be a long-term cost decreasing response for firms that are undergoing change in their financial reporting anyway since they know IFRS would be mandatory as of 2005. All suggestions are consistent with voluntary IFRS adoption being associated with accounting quality improvements, yet in the three alternative explanations it is a correlated outcome rather than the cause.

Studies that exploit voluntary adoption are unable to distinguish between the first and the alternative explanations. It is possible that the quality improvements associated with IFRS adoption, generally observed in prior literature, are at least partly driven by changes to incentives rather than IFRS per se.

2.3.2. Mandatory IFRS and “tick-box” mentality

For firms that resist IFRS and postpone adoption until 2005 when it becomes mandatory, the circumstances around IFRS adoption are different from those for voluntary adopters. These firms could have adopted IFRS as early as 1998 but

decided to wait until they were forced to do so in 2005. Prior literature has suggested a “tick-box” attitude around voluntary IFRS adoption (Daske et al., 2007a). Yet such behavior intuitively might be expected to be more likely in a mandatory setting where some firms are forced to do something against their will.

Survey evidence suggests that the costs of implementing IFRS for firms in the EU are significant (ICAEW, 2007).⁵ The costs of compliance are likely to vary with the way IFRS is implemented. PricewaterhouseCoopers suggests that the extent to which IFRS is embedded in the organization is a key determinant of the resulting accounting quality (PwC, 2004) -- IFRS is considered embedded if it is used for internal reporting and if systems are adapted to automatically generate required information. Similarly, the degree to which IFRS is embedded in the organization is likely to affect compliance costs. Changing internal reporting (and renegotiating contracts that rely on internal reporting, e.g. compensation contracts) and adapting IT systems are potentially costly. It is plausible that voluntary adopters that perceive net benefits of IFRS are more likely to embed IFRS in the organization than resisters that are forced to comply with IFRS.^{6,7} The idea that “tick-box” mentality is common among mandatory IFRS adopters is empirically supported by a survey of 200 first-time IFRS annual reports drawn from all the member states in the EU (ICAEW, 2007, p. 96). The survey finds that the accounting policies sections are characterized by standard wording, suggesting that it is copied from the model accounts produced by large audit firms rather than tailored to suit individual firms’ circumstances.

In this study we examine whether standards or incentives dominate in determining accounting quality by contrasting the changes for voluntary adopters and resisters around IFRS adoption. Based on the two explanations discussed in this section and

⁵ The survey is based on answers to an online questionnaire. Compliance costs for the first set of consolidated statements are estimated at 0.31% of turnover for firms with turnover less than €500m and 0.05% of turnover for firms with turnover greater than €500m. For subsequent years the costs are estimated to be between 0.06% and 0.008% of turnover. For details on methodology and the analysis, see ICAEW (2007, chapter 7).

⁶ Prior literature suggests that bookkeeping costs influence managers’ choice of accounting standards (e.g., Watts and Zimmerman, 1978). We suggest that costs associated with a mandatory accounting standard change may also influence how managers adopt those standards.

⁷ Ball (1998) provides evidence that Daimler-Benz AG voluntarily adopted US GAAP instead of HGB to decrease earnings management in subsidiaries. This is an example of embedding a new accounting system in the organization, which PricewaterhouseCoopers suggests is a key determinant of the resulting accounting quality.

the findings in the prior literature (reviewed in Section 2.1.2), we expect incentives to dominate. Observing a significant reduction in earnings management and more timely loss recognition after IFRS adoption among the voluntary adopters and not among the resisters would support this conjecture.

3. Methodology

We examine two dimensions of accounting quality that are widely used in contemporary research, namely, earnings management and timely loss recognition. In the analyses we compare the same firms' accounting quality both pre- and post- IFRS adoption, effectively using each firm as its own control. We do not attempt to test whether firms that voluntarily adopt IFRS are associated with higher accounting quality than firms that resist IFRS. Such a test would require a matched sample. Matching would either greatly reduce the sample size or be ineffective due to the small number of potential matching candidates in our single-country setting.⁸

3.1. Earnings management

We follow Barth et al. (2008) by focusing on two kinds of earnings management, earnings smoothing and managing towards small positive earnings. Earnings smoothing is measured by three constructs: the variability of changes in earnings, the variability of changes in earnings relative to the variability of changes in cash flows and the negative correlation between accruals and cash flows. A high variability of earnings is consistent with less smoothing of earnings (Lang et al., 2003; Leuz et al., 2003; Ball and Shivakumar, 2005; Ball and Shivakumar, 2006; Lang et al., 2006; Barth et al., 2008). Although it is intuitive that managers who prefer smooth earnings will discretionally apply accruals to reduce the variance, a high variance is also consistent with managers applying their discretion to take "big baths" or of errors in accruals, both of which are associated with low quality accounting (Leuz et al., 2003; Barth et al., 2008). Thus, the interpretation of the results is not unambiguous.

⁸ In the sensitivity analyses of Section 4.4, we compare the changes in accounting quality between the two groups to evaluate the extent to which they are driven by time trends.

We apply the methodology in Barth et al. (2008) as closely as possible to ensure that our results are comparable to prior literature. For the metrics used to examine earnings smoothing we use the residuals from the regressions of Equations (1) to (4) below. Note that we use the residuals rather than the raw changes to mitigate confounding effects. In particular, Barth et al. (2008) argue that this methodology reduces the influence of changing incentives around IFRS adoption. Thus, by applying this methodology we effectively load the dice against finding support for the hypothesis. The equations are as follows:

$$\begin{aligned} \Delta NI_{it} = & \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} \\ & + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 CF_{it} + \alpha_8 AUD_{it} + \alpha_9 NUMEX_{it} \\ & + \alpha_{10} XLIST_{it} + \alpha_{11} CLOSE_{it} + \sum_{k=i}^6 \alpha_{k+11} IDUM_i + \varepsilon_{it}, \end{aligned} \quad (1)$$

$$\begin{aligned} \Delta CF_{it} = & \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} \\ & + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 CF_{it} + \alpha_8 AUD_{it} + \alpha_9 NUMEX_{it} \\ & + \alpha_{10} XLIST_{it} + \alpha_{11} CLOSE_{it} + \sum_{k=i}^6 \alpha_{k+11} IDUM_i + \varepsilon_{it}, \end{aligned} \quad (2)$$

$$\begin{aligned} CF_{it} = & \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} \\ & + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_8 AUD_{it} + \alpha_9 NUMEX_{it} \\ & + \alpha_{10} XLIST_{it} + \alpha_{11} CLOSE_{it} + \sum_{k=i}^6 \alpha_{k+11} IDUM_i + \varepsilon_{it}, \end{aligned} \quad (3)$$

$$\begin{aligned} ACC_{it} = & \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} \\ & + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_8 AUD_{it} + \alpha_9 NUMEX_{it} \\ & + \alpha_{10} XLIST_{it} + \alpha_{11} CLOSE_{it} + \sum_{k=i}^6 \alpha_{k+11} IDUM_i + \varepsilon_{it}, \end{aligned} \quad (4)$$

where ΔNI is change in net income; ΔCF is change in annual cash flow from operations; CF is annual net cash flow from operating activities; ACC is earnings less cash flow from operations; $SIZE$ is the natural logarithm of the market value of equity at the end of the year; $GROWTH$ is percentage change in sales; $EISSUE$ is an indicator that equals one if the firm issued equity; LEV is end-of-year total liabilities divided by end-of-year book value of equity; $DISSUE$ is percentage change in total liabilities; $TURN$ is sales divided by end-of-year total assets; AUD is 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* is the number of exchanges on which a firm's stock is listed; *XLIST* is an indicator variable that equals one if the firm is listed on any US stock exchange; *CLOSE* is the percentage of closely held shares of the firm reported by WorldScope⁹; and *IDUM* are industry indicators.

We estimate Equations (1) to (4) as pooled regressions including all observations. We calculate all of the metrics in the pre-adoption and post-adoption period separately for voluntary adopters and resisters. To test for statistical significance we follow Barth et al. (2008) by applying a t-test based on the empirical distribution of the differences. To obtain the distribution we randomly select firm observations with replacement and calculate the difference between the pre-adoption and post-adoption period. We obtain the distribution of the difference by repeating the procedure 1,000 times.

To calculate our measure of earnings management towards a target, we also follow Barth et al. (2008) and run the logistic regression expressed in Equation (5):

$$\begin{aligned}
 POST(0,1)_{it} = & \alpha_0 + \alpha_1 SPOS_{it} + \alpha_2 SIZE_{it} + \alpha_3 GROWTH_{it} + \alpha_4 EISSUE_{it} \\
 & + \alpha_5 LEV_{it} + \alpha_6 DISSUE_{it} + \alpha_7 TURN_{it} + \alpha_8 CF_{it} + \alpha_9 AUD_{it} \\
 & + \alpha_{10} NUMEX_{it} + \alpha_{11} XLIST_{it} + \alpha_{12} CLOSE_{it} \\
 & + \sum_{k=i}^6 \alpha_{k+12} IDUM_i + \varepsilon_{it}, \tag{5}
 \end{aligned}$$

where *POST*(0,1) is an indicator variable that equals one for observations in the post-adoption period and zero otherwise, and *SPOS* is an indicator variable that equals one for observations where net income scaled by total assets is between zero and 0.01. A negative coefficient on *SPOS* (α_1) suggests that firms manage earnings less towards a small positive target in the post-adoption period.

⁹ Closely held shares are not available for all firms. In order to avoid losing too many observations we set this variable equal to the median of available data from 1994 to 2006, or to zero if no data are available for the entire period. This does not change the coefficient on *CLOSE* significantly. Furthermore, we also estimate all results using the raw variables (ΔNI , ΔCF , *CF*, *ACC*) rather than the residuals from Equations (1) to (4). The use of raw variables does not affect the results, consistent with Barth et al. (2008, note 16). As a consequence, it is unlikely that this data limitation in our setting affects the conclusions of this study.

3.2. Timely loss recognition

For our first measure of timely loss recognition we follow Barth et al. (2008) by running the logistic regression in Equation (6):

$$\begin{aligned}
 POST(0,1)_{it} = & \alpha_0 + \alpha_1 LNEG_{it} + \alpha_2 SIZE_{it} + \alpha_3 GROWTH_{it} + \alpha_4 EISSUE_{it} \\
 & + \alpha_5 LEV_{it} + \alpha_6 DISSUE_{it} + \alpha_7 TURN_{it} + \alpha_8 CF_{it} + \alpha_9 AUD_{it} \\
 & + \alpha_{10} NUMEX_{it} + \alpha_{11} XLIST_{it} + \alpha_{12} CLOSE_{it} \\
 & + \sum_{k=i}^6 \alpha_{k+12} IDUM_i + \varepsilon_{it}, \tag{6}
 \end{aligned}$$

where *LNEG* is an indicator variable that equals one for observations in which annual net income scaled by total assets is less than -0.20 , and zero otherwise. A positive coefficient on *LNEG* suggests that IFRS firms recognize large losses more frequently in the post-adoption period than they do in the pre-adoption period.

Our two remaining measures of timely loss recognition follow Ball et al. (2003). The first measure relies on the methodology in Basu (1997) as expressed in Equation (7):

$$\frac{NI_{it}}{P_{t-1}} = \beta_0 + \beta_1 RD_{it} + \beta_2 R_{it} + \beta_3 R_{it} * RD_{it} + \varepsilon_{it}, \tag{7}$$

where *NI* is net income per share, *P* is the share price, *R* is the fiscal year return including dividend and *RD* is an indicator variable that takes the value one if $R < 0$ and zero otherwise. We run the regression in Equation (7) separately in the pre-adoption and post-adoption periods. A higher incremental coefficient on bad news (β_3) in the post-adoption period is consistent with more timely loss recognition after IFRS adoption.

The second measure we apply, from Ball et al. (2003), captures the persistence of earnings changes as expressed in Equation (8):

$$\frac{\Delta NI_{it}}{TA_{t-1}} = \lambda_0 + \lambda_1 NID_{i,t-1} + \lambda_2 \frac{\Delta NI_{i,t-1}}{TA_{t-2}} + \lambda_3 NID_{i,t-1} * \frac{\Delta NI_{i,t-1}}{TA_{t-2}} + \varepsilon_{it}, \tag{8}$$

where ΔNI is the change in net income, TA is total assets, and NID is an indicator taking the value one if $\Delta NI < 0$ and zero otherwise. A larger negative coefficient on negative income (λ_3) in the post-adoption period is consistent with more timely loss recognition after IFRS adoption, i.e., losses are less persistent.

3.3. Sample and data

We include all inactive and existing firms domiciled in Germany that have data on accounting standards applied available in Datastream. For each of these firms we check the applied accounting standards to the annual reports. Table 1 presents two general samples. The *Switch* sample is used in all analyses of accounting quality while the *Cross-sectional* sample is used in the additional tests of insider characteristics. A firm is only included in the *Switch* sample if it clearly states that it complies with HGB the year before adoption and IFRS the year after. We include firms for which we cannot find an annual report for the year before and after adoption in the *Cross-Sectional* sample as long as we have an annual report according to IFRS for 2004. Firms that comply with US GAAP or that complied with US GAAP in a prior year are excluded. We also exclude firms that adopted IFRS prior to 1998 from the *Switch* sample. 1998 was the year when the International Accounting Standard Committee (IASC) completed its core standards. Thus, firms adopting prior to 1998 adopted a less comprehensive set of accounting standards, which could be important in the assessment of accounting quality. We obtain the annual reports from Thomson One Banker. If the annual reports are not available in Thomson One Banker we search the firm's website. All other variables are obtained from Datastream, WorldScope and Thomson Ownership. Table 1, Panel A describes the sample selection process in detail. The final *Switch* sample consists of 177 resister firms that did not adopt IFRS until 2005, when it became mandatory, and 133 firms that voluntarily adopted IFRS prior to 2005. The *Cross-Sectional* sample includes an additional 123 firms that adopted IFRS prior to 2004 but for which we cannot identify the year the firm switched to IFRS. For the accounting quality metrics we include data for fiscal years

1993 to 2006.¹⁰ Table 1, Panel B presents the distribution of adoption years for each sample.

Insert table 1

3.4. Treatment of outliers

Following Barth et al. (2008) we winsorize the accounting variables used to construct the test metrics of Equations (1) to (4) (ΔNI , ΔCF , ACC , CF and all non-dummy control variables) at the 5% level. The high level of winsorization reflects the fact that metrics based on variability are sensitive to outliers.¹¹

We follow Ball et al. (2003; 2005) and Basu (1997) and truncate rather than winsorize the data used in estimating the timely loss recognition tests in Equation (7) (R and NI) and the persistence of earnings changes (ΔNI) in Equation (8). We report results where the variables are truncated at the 1% level for Equation (7) (consistent with prior literature) and the 2% level for Equation (8). If we only truncate the variables in Equation (8) at the 1% level (as prior literature does) the results are influenced by a few outliers.

4. Empirical findings

4.1. Descriptive statistics

Table 2 presents descriptive statistics on all variables used in the analysis of accounting quality. Panel A includes the variables used in the tests that follow the methodology of Barth et al. (2008). Among the test variables the only large difference between voluntary adopters and resisters is the proportion of large losses. The statistics are generally close to those reported by Barth et al. (2008). The descriptive statistics on the control variables show that on average the voluntary adopters have

¹⁰ As we need to calculate the change in the accounting variables, we lose the observations for the first year for all metrics. For the loss persistency measure in Equation (8) we lose the first two years of observations.

¹¹ We replicate all tests where we winsorize at the 2% level. In these tests the variance of the metrics is higher but the inference we draw from the results remains unchanged.

lower leverage, issue more equity and debt, are larger and listed on more exchanges, are more likely to be audited by a large auditor and cross-listed in the US, and have less closely held shares. This is consistent with the findings of prior research. Compared to Barth et al. (2008), our sample contains fewer firms cross-listed in the US, as the majority of German firms cross-listed in the US comply, or have complied, with US GAAP and consequently are excluded from our sample.

Insert table 2

Table 2, Panels B and C include the variables used in the tests that follow the methodology of Ball et al. (2003). Returns and net income are on average higher for voluntary adopters than resisters, which could reflect industry differences (in all tests we use the firm as its own control; we do not attempt to draw comparisons between the two groups). The scaled change in net income is only marginally above zero as we would expect. Returns and net income numbers are similar to those in Ball et al. (2003, Table 1). Net income is left-skewed (median > mean), both in the voluntary adopter and resister samples, consistent with asymmetric loss recognition.

4.2. Voluntary adopters

Table 3 presents the comparison of accounting quality between the pre- and post-adoption periods for voluntary adopters. The variability of earnings (ΔNI) increases in the post-adoption period, which is consistent with decreased earnings management. The change in variability of earnings could be driven by underlying cash flows. However, the variability of earnings relative to the variability of cash flows ($\Delta NI / \Delta CF$) indicates that this is not the case. The negative correlation between accruals and cash flows is also reduced in the post-adoption period, which implies reduced earnings management. These changes are all significant at the 5% level (p-values < 0.01). The coefficient on small positive profits in the regression of Equation (5) is negative, which would be consistent with less earnings management towards a target in the post-adoption period had it been statistically significant. These results are

consistent in direction with those reported in Barth et al. (2008, Table 5). The magnitude of the change and the statistical significance is stronger in our sample.¹²

Insert table 3

The positive coefficient on *LNEG* in the Equation (6) regression suggests that firms are more likely to recognize large losses in the post-adoption period, although this result is not statistically significant. The incremental timeliness of bad news in Equation (7) (β_3) also increases in the post-adoption period, which suggests more timely loss recognition after firms voluntarily adopt IFRS. The change in the bad news coefficient from pre- to post-adoption is marginally significant. Finally, the results for the regression of Equation (8) show a reduced persistence of losses in the post-adoption period. The difference in loss persistence is significant at the 5% level. These results document a reduction in earnings management and an increase in the timeliness of loss recognition after voluntary IFRS adoption.

4.3. Resisters

Table 4 presents the comparison of accounting quality between the pre- and post adoption periods for resisters. The variability of earnings (ΔNI) significantly decreases in the post-adoption period, which suggests an increase in earnings management. The variability of earnings relative to the variability of cash flows ($\Delta NI/\Delta CF$) indicates that the majority of the change in earnings variability is attributable to underlying cash flows, although part of the reduction remains unexplained. The negative correlation between accruals and cash flows also increases in the post-adoption period when no controls are included, which would suggest increased earnings management had it been statistically significant. When we include controls we observe a decrease in correlation, which would be consistent with less earnings management if the result were statistically significant. The coefficient on small positive profits in regression (5) is positive and significant (p-value 0.0335), which indicates more earnings management towards a target after IFRS adoption.

¹² This is most likely due to our hand collected data on the accounting standards applied. In collecting data for this paper we observed that the information on accounting standards available in commercial databases includes many errors prior to 2003. These errors may have weakened the results in Barth et al. (2008).

Insert table 4

The significantly negative coefficient on *LNEG* in the regression of Equation (6) suggests that firms are less likely to recognize large losses in the post-adoption period (p-value 0.017). The incremental timeliness of bad news in Equation (7) (β_3) is also reduced in the post-adoption period and the change is significant at the 5% level. Finally, the results for the regression of Equation (8) show a reduced persistence of losses in the post-adoption period. However, the difference in loss persistence is small and not statistically significant.

The results for resisters generally indicate marginally more earnings management and less timely loss recognition in the post-adoption period although most changes are statistically insignificant. These findings are in sharp contrast to those reported for voluntary adopters that showed a reduction in earnings management and an increase in timely loss recognition.

4.4. Sensitivity tests

There are three main concerns regarding the results reported in Tables 3 and 4. First, the metrics used tend to vary over time and consequently a time trend could be driving the results. Second, perhaps accounting quality improvements take time to materialize and the lack of improvements among resisters could be caused by the availability of only two years of post-IFRS data. Third, the lack of observed quality improvements for resisters might be driven by a lack of statistical power. We address these three concerns in this subsection.

4.4.1. Time trend

Barth et al. (2008, Table 6) provide evidence that could be interpreted as consistent with a time trend explaining at least some of the changes in accounting quality from pre- to post-IFRS adoption. Similarly, Land and Lang (2002) document that accounting quality has improved worldwide since the beginning of the 1990s, which is long before widespread voluntary IFRS adoption began, and suggest that this could

be due to factors such as globalization and anticipation of international accounting harmonization. Economic change is likely to affect accounting quality through its impact on corporate incentives. The fact that this effect transcends periods under both domestic GAAP and IFRS further indicates that incentives are important in understanding the accounting quality changes. An additional reason to expect that quality might have improved systematically in the period examined is changes to enforcement in Germany. For instance, Brown et al. (2007) find that a German internal control regulation implemented in 1998 is associated with systematic improvements in financial reporting quality. If globalization and enforcement are the main drivers of quality changes, this evidence would support the conjecture that the formal adoption of accounting standards has little influence on accounting quality. We test whether our results are driven by changes that are time specific rather than related to accounting standards in Table 5.

In Table 5, Panel A we counter-factually assume that resisters adopted IFRS in 2002 (the average adoption year in the voluntary adopter sample is $2001.6 \approx 2002$). If the results are consistent with those reported in Table 3 for voluntary adopters, this would indicate that our findings are period specific rather than related to the accounting standards applied. We find that the variability of earnings (ΔNI) and the variability of earnings relative to the variability of cash flows ($\Delta NI/\Delta CF$) increases after 2002. The change in ΔNI is highly significant (p-value < 0.01), yet contrary to voluntary adopters a large proportion of the change is explained by the underlying cash flows. However, the change in $\Delta NI/\Delta CF$ remains significant at the 5% level (p-value 0.0314) when no controls are included. When controls are included the change becomes insignificant (p-value 0.2819). Contrary to the results in the voluntary adopter group (Table 3) the observed increase in the variability in earnings (ΔNI) is almost entirely explained by changes in a combination of underlying cash flows and the control variables. The negative correlation between accruals and cash flows is reduced after 2002, supporting reduced earnings management. This is similar in direction to what we observed for voluntary adopters although the change is smaller and only marginally significant when no controls are included (with controls the change becomes insignificant). The coefficient on small losses in the Equation (5) regression is positive, which would suggest more management towards a target if it

were statistically significant. In the voluntary adopter sample in Table 3 the coefficient is negative.

Contrary to the voluntary adopter sample we only observe small changes to timely loss recognition for the resister sample around 2002. First, timely loss recognition is reduced after 2002, as measured by the coefficient on *LNEG* in the Equation (6) regression. Second, Equation (7) (based on Basu, 1997) indicates no change from the pre-2002 to the post-2002 period. Third, the Equation (8) regression indicates a large and significant decrease in the persistence of losses after 2002.

The results in Table 5, Panel A indicate that there is a general increase in accounting quality over the period, most likely caused by a time trend similar to the one identified in prior literature (Land and Lang, 2002; Barth et al., 2008). However, the trend is stronger among firms that voluntarily adopted IFRS in the period (for earnings management the change is approximately twice as strong; the evidence is more mixed for timely loss recognition). There are obvious problems in comparing resisters and voluntary adopters in our sample (see footnote 14), so care should be taken in interpreting the evidence. Notwithstanding, our results are generally consistent with the finding in the prior literature that voluntary IFRS is associated with accounting quality improvements that are not entirely explained by time trends.

Insert table 5

In Table 5, Panel B we address the concern that the accounting quality of resisters might have increased post-IFRS relative to voluntary adopters, and that the observed decrease in quality in Table 4 is driven by a time trend. We counter-factually assume that voluntary adopters adopted IFRS in 2005 when compliance became mandatory. If the results are consistent with those reported in Table 4 for resisters, then the evidence would indicate that our findings are period specific. We find that the variability of earnings changes (ΔNI) decreases after 2005, but in contrast to the resisters the reduction is entirely attributable to changes in the underlying cash flows ($\Delta NI/\Delta CF$). Also different from the results for resisters in Table 4, we find that the negative correlation between accruals and cash flows were reduced after 2005 regardless of whether we include controls or not. Only the changes in variability of net income with

controls and changes in correlation between accruals and cash flows without controls are statistically significant. The coefficient on small profits in the regression of Equation (5) is negative but insignificant (p-value 0.1325). In the resister sample in Table 4 the same coefficient is positive. The results for timely loss recognition are mixed. First, timely loss recognition is reduced after 2005 as measured by the coefficient on *LNEG* in Equation (6) (p-value 0.0650). Second, the test from Equation (7) (based on Basu, 1997) indicates an increase from the period before 2005 to the period after, although the results are not statistically significant. Third, the regression in Equation (8) indicates a large decrease in loss persistence after 2005.

Overall, the evidence from Table 5 suggests the existence of a time trend in our sample period. However, it is not enough to explain the difference in accounting quality improvements between voluntary adopters and resisters. Although this effect works against finding a difference between the two groups, its very existence independent of the standards applied suggests that factors other than standards have a strong impact on accounting quality. The majority of our evidence implies that voluntary IFRS adoption is associated with accounting quality improvements that exceed the time trend. For firms resisting IFRS the results are mixed. Although some of their observed quality change in Table 4 appears to be explained by time trends, we argue that this does not contradict the conclusion of the main analysis in this paper – that is, we do not conclude that forcing firms to adopt IFRS will either improve or reduce accounting quality; rather, we conclude that it has little or no impact, which is consistent with the results in this section. However, because accounting quality changes around resister firms' IFRS adoption are important to this study, we perform further tests on accounting quality changes around 2005 in the next subsection (specifically, we compare the quality changes of resisters relative to voluntary adopters around 2005).

4.4.2. Balanced panels around IFRS adoption

One of the concerns with the results in this study, and in prior literature, is that panels are unbalanced, i.e., they do not include the same number of observations for each firm before and after IFRS adoption. Among other things this raises the concern that accounting quality improvements take time to materialize, and that the observed

differences between voluntary and resister adoption are driven by the longer time series available after voluntary adoption.

We address this question in Table 6, Panels A and B. In Panel A we restrict our tests to firms with data available both the year before and the year after IFRS adoption. In Panel B we restrict the tests to firms with data available two years before and two years after IFRS adoption. We focus on the variability of net income (ΔNI) and the variability of net income relative to the variability of cash flows ($\Delta NI/\Delta CF$) because these two measures provide the strongest evidence of quality improvements around voluntary IFRS adoption in Barth et al. (2008) and this study.¹³ We only report results for changes without controls to reduce the data requirements and increase the number of observations available.

The variability of changes in net income relative to the variability of cash flows ($\Delta NI/\Delta CF$) increases sharply after voluntary IFRS adoption, regardless of whether the change is measured one or two years after adoption. For resisters there is a small increase in the first year but a larger decrease in the second. This suggests that quality improves right around IFRS adoption for voluntary adopters but not for resisters. However, these results are only significant when we apply the standard errors from the larger sample in Table 3. Based on the standard error within the smaller sample of Table 6, none of these results is statistically significant. We therefore view the analysis in this section as suggestive only.

Insert table 6

In Table 6, Panel C we compare the quality changes of resisters relative to voluntary adopters around 2005 (the year resisters adopted IFRS) based on the balanced panels. The advantage of this approach is that it is the most intuitive way to address the time trends documented in Section 4.4.1. The disadvantage is that the two groups of firms, resisters and voluntary adopters, are fundamentally different as argued in Section 5 and it is not obvious that a time trend should affect these firms in the same way.¹⁴

¹³ Furthermore, it is difficult to measure timely loss recognition with a small number of observations.

¹⁴ A firm's exposure to the time trend is likely to depend on the firm's stage in the life cycle, e.g., through the growth rate. To the extent that the trend is driven by internationalization (Land and Lang,

Nevertheless, we find that regardless of whether we measure the quality changes from 2004 to 2005 or from 2003 and 2004 to 2005 and 2006, the inference is unchanged. Very little happens to accounting quality and the changes point towards lower quality after IFRS adoption.¹⁵

4.4.3. Statistical power

The setting limits the post-IFRS observations that are available for firms resisting IFRS. It is therefore possible that the lower number of observations explains the lack of quality improvements subsequent to IFRS adoption. Table 6 indirectly addresses this issue with every panel having fewer observations for voluntary adopters than resisters. We would generally observe quality decreases subsequent to IFRS adoption for resisters and quality improvements for voluntary adopters had the test results been statistically significant. Furthermore, the signs on the equivalent quality metrics tests in Table 4 are also generally negative, which suggest that the lack of improvements observed in Table 6 are not attributable to a lack of power.

5. Why do some firms resist IFRS?

The results of the analysis thus far are consistent with accounting quality not improving when firms that resist IFRS are forced to adopt. But why do some firms resist IFRS? That is, why do some firms lack incentives to adopt what is generally perceived to be higher quality accounting standards? Based on the discussion in connection with the development of the hypothesis in Section 2.3, we address this question by looking at which firms are less sensitive to shocks to growth options and more likely to respond to regulation by exhibiting “tick-box” behavior. More specifically, we are looking for firms that are less likely to respond to shocks to growth opportunities by improving financial reporting quality and adopting IFRS in

2002), it is also likely to depend on firms’ international trade. Both age and international exposure vary systematically between voluntary adopters and resisters; see Table 8.

¹⁵ In untabulated results we obtain similar findings for the other quality measures applied in this paper. However, because these measures generally rely on a large number of observations the results are less stable, i.e., the conclusions for some metrics are sensitive to the inclusion of specific observations.

the process.¹⁶ Such firms are likely to perceive fewer benefits from a capital market-oriented set of accounting standards like IFRS and consequently apply a cost minimizing strategy when subjected to it.

Several authors have suggested that a country's orientation towards insider or outsider financing is important in understanding its financial reporting system (e.g., Ball et al., 2000; Ball, 2001; Leuz et al., 2003; Leuz and Wüstemann, 2004). If accounting regulations develop to satisfy the needs of the main contracting parties in the economy then we would expect the role of accounting to be very different in an insider economy relative to an outsider economy. In countries with an insider orientation, information asymmetries between managers and capital providers are resolved through private information channels. Thus, public information channels such as the annual report may serve other purposes, for example, determination of dividends or taxes. It is plausible that this argument extends to the firm level. Some firms may exhibit a higher degree of outsider orientation than other firms. The orientation of firms could be driven by a trade-off between the costs to insiders of losing their information advantage and the benefits from being able to exploit growth opportunities because external financing is more easily available with an outsider orientation.

This argument suggests that a firm's insider orientation may be important in understanding the decision to resist IFRS. Assume that growth opportunities are equally distributed across all firms prior to any financial reporting decision. Since firms with insider characteristics likely have greater insider benefits, a larger positive shock to growth options would be needed to motivate them to change their orientation. Thus, fewer firms with insider characteristics will switch to outsider orientation. Furthermore, the analysis of accounting quality changes around IFRS adoption in the previous sections indicate that voluntary adoption is associated with changes that could be interpreted as a move towards an outsider orientation. We therefore expect insider characteristics to be negatively correlated with the tendency

¹⁶ The fact that firms adopt IFRS in connection with accounting quality improvements does not imply that IFRS cause the quality improvements, although this is one possibility. This issue is discussed in detail in Section 2.3.

to adopt IFRS voluntarily and positively correlated with the tendency to resist IFRS adoption.

To assess whether relative insider characteristics are associated with the grouping of firms between voluntary adopters and resisters we perform a cross-sectional analysis on the choice in 2004. Table 7 provides descriptive statistics on key characteristics that capture firms' orientation in the cross-sectional sample. The variables are closely related to those used in Equations (5) and (6) but not identical, as the purpose of these equations is to ensure that results are comparable to prior literature (in particular, Barth et al., 2008), increasing external validity. The purpose here is to capture differences in insider characteristics.

The descriptive statistics in Table 7 show that resisters have more bank ownership and a higher level of long-term leverage, and they issue equity less often. This suggests that resisters have closer relationships with banks. In Germany banks are often insiders with representatives on the board and access to significant non-public information (Leuz and Wüstemann, 2004). Similarly, financial analysts act as information intermediaries and respond to demand from capital markets (Lang and Lundholm, 1996). Thus, the observation that analyst following is lower among resisters suggests that there is lower demand for information from the capital markets for these firms, consistent with these firms having an insider orientation. Finally, for resisters a larger proportion of shares is closely held, which, again, is consistent with an insider orientation.

Insert table 7

Table 8 provides the result of a logistic regression where the dependent variable takes the value one when a firm adopts IFRS in 2005, i.e., resists IFRS. The independent variables are the insider characteristics and a set of control variables based on prior literature on voluntary adoption of IFRS and US GAAP (e.g., Ashbaugh, 2001; Tarca, 2004; Cuijpers and Buijink, 2005; Gassen and Sellhorn, 2006). The advantage of the multivariate analysis is that we are able to assess the incremental association of each variable on the decision to resist IFRS. The disadvantage is the greatly reduced sample due to missing variables that reduce the power of our tests. Table 8 supports

the findings of the univariate analysis. All insider characteristics have the predicted signs and are significant, although not at the same level.¹⁷ Notice that bank ownership is only positively associated with resisting IFRS when the firm is not a bank itself.

Insert table 8

The analysis of resisters' characteristics suggests that the insider orientation of firms may be a contributing factor to why resisters lack incentives to adopt IFRS. The lack of incentives to adopt IFRS could explain why this group does not experience accounting quality improvements in association with mandatory IFRS adoption.

6. Conclusion

We compare how accounting quality is affected by the adoption of IFRS for two groups of firms: a) those that perceive net benefits of IFRS and b) those that have no incentives to adopt and are forced to comply. The purpose is to examine whether IFRS per se leads to accounting quality improvements. Toward this end we exploit the unique setting that exists in Germany, where firms were able to voluntarily adopt IFRS instead of local GAAP starting in 1998, until it became mandatory to adopt IFRS in 2005. Economic intuition suggests that firms that voluntarily adopted prior to 2005 did so because they perceived net benefits of IFRS compliance. Consistent with prior research we find that earnings management decreases and timely loss recognition increases after voluntary IFRS adoption. In contrast, firms that postponed adoption until it became mandatory in 2005 did so because they had no incentive to adopt IFRS. We find no accounting quality improvements for firms that resist IFRS until 2005. Although further analyses indicate that quality improvements among both voluntary adopters and resisters are affected by temporal trends, this effect does not explain a major part of the difference in quality changes upon adoption between the two groups. The finding that accounting quality improvements are confined to

¹⁷ Some variables are defined slightly differently in this study compared to earlier literature. Although levels of significance and the specific combination of variables included vary across studies, the results presented here are largely consistent with prior literature on voluntary IFRS/US GAAP adoption. Thus, the presentation of the results here is simply to illustrate that the insider characteristics are correlated with incentives, not to suggest that these findings are unique to this study.

voluntary adopters and the existence of a time trend independent of the accounting standards applied suggests that IFRS per se does not change accounting quality.

In additional analyses we find that firms that resist IFRS (i.e., adopt in 2005) on average have more insider characteristics, which is consistent with an insider orientation. This may be important in understanding the lack of incentives to adopt IFRS and the subsequent lack of quality improvements after forced adoption.

One implication of our results is that accounting quality does not always improve with IFRS adoption. Our results suggest that mandating IFRS will not improve accounting quality for firms that have no incentives to adopt. A second implication is that even when publicly listed firms are operating in the same institutional framework, incentives dominate accounting standards in determining accounting quality.

The results suggest that the current focus on accounting standards quality might not always yield higher accounting quality. Accounting quality improvements in connection with the application of new standards are dependent on the incentives of those preparing the accounts, rather than on whether the new standards are perceived to be of higher quality.

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Table 1
Sample selection

Panel A reports the sample selection process. For each of the subsequent tests we also require that all data needed for that particular test be available. The “switch” sample is used in all tests of accounting quality (Tables 2 – 6). The “cross-sectional” sample is used in the analysis of insider characteristics (Tables 7 – 8). Panel B reports the distribution of observations in our sample.

Panel A: The sample selection process		Observations
Existing German firms in Datastream May 2007		1288
- No accounting standard information		-464
		824
Dead German firms in Datastream May 2007		9281
- No accounting standard information		-9233
		48
Firms with accounting standard information		872
Not adopting in 2005 (i.e., no consolidated statements)		212
US GAAP		101
Voluntary adopters		348
Resisters		211
Firms with accounting standard information		872
Voluntary adopters		348
Classified incorrectly (i.e., resister)		-3
Applied US GAAP in the past		-32
Preferred stock		-28
Other missing data		-29
Voluntary adopters that qualify for sample		256
Resisters		211
From the early adopter sample (misclassified)		3
Preferred stock		-19
Missing data		-18
Resisters that qualify for sample		177
Switch sample		310
Not possible to identify switch year but prior to 2004		+123
Cross-sectional sample		433

Table 1 continued

Panel B: The distribution of IFRS adoption years

Year of adoption	Tables 3, 4, and 5		Table 6: Balanced panels				Tables 7 and 8	
	Switch sample		One year		Two years		Cross-sectional sample	
1998	12	4%	5	2%	3	2%	-	-
1999	18	6%	10	4%	7	4%	-	-
2000	18	6%	9	4%	6	3%	-	-
2001	21	7%	16	6%	14	7%	-	-
2002	27	9%	22	9%	21	11%	-	-
2003	15	5%	13	5%	13	7%	-	-
2004	22	7%	20	8%	16	8%	-	-
Voluntary adopters	133	43%	95	37%	80	41%	256	59%
2005	177	57%	162	63%	116	59%	177	41%
Total number of firms	310	57%	257	100%	196	100%	433	100%

Table 2
Summary statistics

This table provides summary statistics. The variables in Panel A are defined as follows. ΔNI is the change in net income. ΔCF is change in annual cash flow from operations. ACC is earnings less cash flow from operations. CF is annual net cash flow from operating activities. $SPOS$ is an indicator variable that equals one for observations where net income scaled by total assets is between zero and 0.01. $LNEG$ is an indicator variable that equals one for observations for which annual net income scaled by total assets is less than -0.20, and zero otherwise. LEV is end-of-year total liabilities divided by end-of-year book value of equity. $GROWTH$ is percentage change in sales. $EISSUE$ is an indicator that equals one if the firm issued equity. $DISSUE$ is percentage change in total liabilities. $TURN$ is sales divided by end-of-year total assets. $SIZE$ is the natural logarithm of end-of-year market value of equity. $NUMEX$ is the number of exchanges on which a firm's stock is listed. AUD is an indicator variable that equals one if the firm's auditor is PwC, KPMG, Arthur Andersen, E&Y or D&T, and zero otherwise. $XLIST$ is an indicator variable that equals one if the firm is listed on any US stock exchange. $CLOSE$ is the percentage of shares reported to be closely held in WorldScope. The variables in Panel B are defined as follows. R is the fiscal year return including dividend. NI/P is net income per share scaled by share price. In Panel C ΔNI is the change in net income scaled by share price.

Panel A: Variables used in tests on earnings management						
	Voluntary adopters (n=1096)			Resisters (n=1228)		
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation
Test Variables						
ΔNI	0.01	0.00	0.06	0.01	0.00	0.08
ΔCF	0.01	0.01	0.08	0.01	0.00	0.10
ACC	-0.05	-0.04	0.08	-0.05	-0.05	0.10
CF	0.07	0.07	0.08	0.05	0.06	0.10
$SPOS$	0.13	0.00	0.33	0.13	0.00	0.33
$LNEG$	0.03	0.00	0.18	0.06	0.00	0.24
Control Variables						
LEV	3.69	2.01	5.47	3.88	1.69	5.97
$GROWTH$	11.98	7.10	27.70	10.46	3.11	33.33
$EISSUE$	0.27	0.00	0.44	0.14	0.00	0.35
$DISSUE$	12.45	4.54	34.98	8.78	1.34	36.28
$TURN$	1.16	1.17	0.65	1.06	1.06	0.65
$SIZE$	12.69	12.51	2.01	11.27	11.03	1.75
CF	0.07	0.07	0.08	0.05	0.06	0.10
$NUMEX$	2.30	2.00	1.55	1.83	2.00	1.10
AUD	0.64	1.00	0.48	0.42	0.00	0.49
$XLIST$	0.01	0.00	0.10	0.00	0.00	0.00
$CLOSE$	45.39	50.00	29.11	53.25	59.64	33.04
Panel B: Variables used in tests on timely loss recognition						
	Voluntary adopters (n=1263)			Resisters (n=1696)		
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation
Test variables						
R	0.15	0.07	0.49	0.09	0.03	0.49
NI/P	0.03	0.05	0.14	0.01	0.04	0.20
Panel C: Variables used in tests on persistence of earnings						
	Voluntary adopters (n=1259)			Resisters (n=1620)		
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation
Test variables						
$\Delta NI/P$	0.01	0.00	0.07	0.01	0.00	0.09

Table 3**Earnings management and timely loss recognition for *voluntary dopters***

This table presents the results for voluntary adopters defined as firms that adopted IFRS from 1998 to 2004 with data available in Datastream.

ΔNI^* , ΔCF^* , CF^* and ACC^* are defined as the residuals from regressions of ΔNI , ΔCF , CF and ACC , respectively, on the control variables from Table 2. The variables are defined in Table 2. The regressions are formally expressed in Equations (1) to (4).

Small Positive NI (SPOS) and Large Negative NI (LNEG) are the coefficients on SPOS and LNEG in logistic regressions where the dependent variable is an indicator taking the value one for post-adoption observations and zero for pre-adoption observations. The logistic regressions include the control variables from Table 2. The regressions are formally expressed in Equations (5) and (6). Only the coefficients on SPOS and LNEG are reported.

For the timely loss recognition regressions (Equation (7)) only the good news (β_2) and incremental bad news (β_3) coefficients are reported. For the earnings persistence regressions only the positive income changes (λ_2) and incremental negative income changes (λ_3) coefficients are reported. The equations are formally expressed in Equations (7) and (8).

Pre-adoption includes all observations before firms adopt IFRS. Post-adoption includes all observations after a firm adopts IFRS. ** indicates significance at the 5% level (one-sided tests) and * indicates significance at the 10% level (one-side tests).

<i>Earnings management</i>	Obs		Pre	Post	Expected Difference	%Difference	Level of.	
	Pre	Post	adoption	adoption				Sign
Variabilty of ΔNI	382	714	0.0028	0.0046	+	0.002	66%	**
Variabilty of ΔNI^*	357	699	0.0027	0.0044	+	0.002	63%	**
Variabilty of ΔNI over ΔCF	382	714	0.3605	0.7581	+	0.398	110%	**
Variabilty of ΔNI^* over ΔCF^*	357	699	0.4797	0.9820	+	0.502	105%	**
Correlation between ACC and CF	382	714	-0.7530	-0.5892	+	0.164	22%	**
Correlation between ACC* and CF*	357	699	-0.6670	-0.5511	+	0.116	17%	**

Small Positive NI (SPOS) (n=1156) -0.0766 - No

Timely loss recognition

Large Negative NI (LNEG) (n=1156) 0.3643 + No

$$NI = \beta_0 + \beta_1 RD + \beta_2 R + \beta_3 R^* RD + \varepsilon$$

	N	β_2	t(β_2)	β_3	t(β_3)	Adj.R ²
Pre-adoption	587	0.05	3.31	0.11	2.98	8.62%
Post-adoption	676	0.01	0.50	0.21	4.27	7.06%
Expected sign		?		+		
Test of pre- and post- difference	1263	-0.04	-1.71	0.09	1.45	7.49%
Level of significance		**		*		

$$\Delta NI = \lambda_0 + \lambda_1 D\Delta NI_{t-1} + \lambda_2 \Delta NI_{t-1} + \lambda_3 D\Delta NI_{t-1}^* \Delta NI_t + \varepsilon$$

	N	λ_2	t(λ_2)	λ_3	t(λ_3)	Adj.R ²
Pre-adoption	551	-0.06	-0.81	-0.24	-2.32	2.96%
Post-adoption	708	0.12	2.43	-0.78	-9.32	12.40%
Expected sign		?		-		
Test of pre- and post- difference	1259	0.18	1.72	-0.54	-3.68	10.36%
Level of significance		**		**		

Table 4**Earnings management and timely loss recognition for resisters**

This table presents the results for resisters defined as firms that adopted IFRS in 2005 with data available in Datastream.

ΔNI^* , ΔCF^* , CF^* and ACC^* are defined as the residuals from regressions of ΔNI , ΔCF , CF and ACC , respectively, on the control variables from Table 2. The variables are defined in Table 2. The regressions are formally expressed in Equations (1) to (4).

Small Positive NI (SPOS) and Large Negative NI (LNEG) are the coefficients on SPOS and LNEG in logistic regressions where the dependent variable is an indicator taking the value one for post-adoption observations and zero for pre-adoption observations. The logistic regressions include the control variables from Table 2. The regressions are formally expressed in Equations (5) and (6). Only the coefficients on SPOS and LNEG are reported.

For the timely loss recognition regressions (Equation (7)) only the good news (β_2) and incremental bad news (β_3) coefficients are reported. For the earnings persistence regressions only the positive income changes (λ_2) and incremental negative income changes (λ_3) coefficients are reported. The equations are formally expressed in Equations (7) and (8).

Pre-adoption includes all observations before firms adopt IFRS. Post-adoption includes all observations after a firm adopts IFRS. ** indicates significance at the 5% level (one-sided tests) and * indicates significance at the 10% level (one-side tests).

<i>Earnings management</i>	Obs	Pre	Post	Expected Difference	%Difference	Level of.
	Pre	Post	adoption	Adoption	Sign	Significance
Variabilty of ΔNI	940	288	0.0076	0.0049	+	-0.003 -36% **
Variabilty of ΔNI^*	904	283	0.0072	0.0041	+	-0.003 -42% **
Variabilty of ΔNI over ΔCF	940	288	0.7667	0.7137	+	-0.053 -7% No
Variabilty of ΔNI^* over ΔCF^*	904	283	0.9691	0.8992	+	-0.070 -7% No
Correlation between ACC and CF	940	288	-0.5424	-0.5564	+	-0.014 -3% No
Correlation between ACC^* and CF^*	904	283	-0.5496	-0.4865	+	0.063 11% No
Small Positive NI (SPOS) (n=1334)				0.3956	-	**
<i>Timely loss recognition</i>						
Large Negative NI (LNEG) (n=1334)				-0.8680	+	**
$NI = \beta_0 + \beta_1 RD + \beta_2 R + \beta_3 R^* RD + \varepsilon$						
	N	β_2	$t(\beta_2)$	B_3	$t(\beta_3)$	Adj.R ²
Pre-adoption	1407	0.05	3.28	0.35	9.62	17.50%
Post-adoption	289	0.10	4.59	0.12	1.13	15.21%
Expected sign		?		+		
Test of pre- and post- difference	1696	0.04	1.53	-0.22	-1.68	17.82%
Level of significance		*		**		
$\Delta NI = \lambda_0 + \lambda_1 D\Delta NI_{t-1} + \lambda_2 \Delta NI_{t-1} + \lambda_3 D\Delta NI_{t-1} * \Delta NI_t + \varepsilon$						
	N	λ_2	$t(\lambda_2)$	λ_3	$t(\lambda_3)$	Adj.R ²
Pre-adoption	1331	-0.03	-0.72	-0.42	-6.47	5.41%
Post-adoption	289	-0.01	-0.20	-0.44	-2.72	2.79%
Expected sign		?		-		
Test of pre- and post- difference	1620	0.01	0.18	-0.02	-0.11	5.13%
Level of significance		No		No		

Table 5**Time trends and earnings management and timely loss recognition**

In this table it is counter-factually assumed in Panel A that *Resisters* adopted IFRS in 2002 and in Panel B that *Volunteer Adopters* adopted IFRS in 2005. ΔNI^* , ΔCF^* , CF^* and ACC^* are defined as the residuals from regressions of ΔNI , ΔCF , CF and ACC , respectively, on the control variables from Table 2. The variables are defined in Table 2. The regressions are formally expressed in Equations (1) to (4).

Small Positive NI (SPOS) and Large Negative NI (LNEG) are the coefficients on SPOS and LNEG in logistic regressions where the dependent variable is an indicator taking the value one for post-adoption observations and zero for pre-adoption observations. The logistic regressions include the control variables from Table 2. The regressions are formally expressed in Equations (5) and (6), respectively. Only the coefficients on SPOS and LNEG are reported.

For the timely loss recognition regressions (Equation (7)) only the good news (β_2) and incremental bad news (β_3) coefficients are reported. For the earnings persistence regressions only the positive income changes (λ_2) and incremental negative income changes (λ_3) coefficients are reported. The equations are formally expressed in Equations (7) and (8).

Pre-adoption includes all observations before firms adopt IFRS. Post-adoptions include all observations after a firm adopt IFRS. ** indicates significance at the 5% level (one-sided tests) and * indicates significance at the 10% level (one-side tests).

Panel A: Resisters counter-factually assumed to adopt in 2002

<i>Earnings management</i>	Obs		Pre	Post	Expected Difference	%Difference	Level of significance
	Pre	Post	adoption	adoption			
Variabilty of ΔNI	472	756	0.0058	0.0076	+	0.002	32% **
Variabilty of ΔNI^*	442	745	0.0051	0.0071	+	0.002	41% **
Variabilty of ΔNI over ΔCF	472	756	0.6268	0.8163	+	0.189	30% **
Variabilty of ΔNI^* over ΔCF^*	442	745	0.8789	0.9717	+	0.093	11% No
Correlation between ACC and CF	472	756	-0.5979	-0.5096	+	0.088	15% *
Correlation between ACC* and CF*	442	745	-0.5707	-0.5174	+	0.053	9% No
Small Positive NI (SPOS) (n=1334)				0.0760	-		No

Timely loss recognition

Large Negative NI (LNEG) (n=1334)				-0.0644	+		No
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$$NI = \beta_0 + \beta_1 RD + \beta_2 R + \beta_3 R * RD + \varepsilon$$

	N	B_2	$t(\beta_2)$	β_3	$t(\beta_3)$	Adj.R ²
Pre-adoption	943	0.02	1.45	0.33	9.22	18.81%
Post-adoption	753	0.10	4.85	0.32	5.42	19.81%
Expected sign		?		+		
Test of pre- and post- difference	1696	0.08	2.97	0.00	-0.04	19.63%
Level of significance		**		No		

$$\Delta NI = \lambda_0 + \lambda_1 \Delta NI_{t-1} + \lambda_2 \Delta NI_{t-1} + \lambda_3 \Delta NI_{t-1} * \Delta NI_t + \varepsilon$$

	N	λ_2	$t(\lambda_2)$	λ_3	$t(\lambda_3)$	Adj.R ²
Pre-adoption	870	-0.21	-4.50	-0.08	-0.93	4.41%
Post-adoption	750	0.09	1.89	-0.65	-7.59	7.95%
Expected sign		?		-		
Test of pre- and post- difference	1620	0.30	4.50	-0.57	-4.86	7.43%
Level of significance		**		**		

Table 5 continued

Panel B: Voluntary adopters counter-factually assumed to adopt in 2005

<i>Earnings management</i>	Obs		Pre	Post	Expected Difference	%Difference	Level of.	
	Pre	Post	adoption	Adoption				Sign
Variabilty of Δ NI	848	248	0.0041	0.0034	+	-0.001	-18%	No
Variabilty of Δ NI*	811	245	0.0040	0.0031	+	-0.001	-24%	*
Variabilty of Δ NI over Δ CF	848	248	0.5760	0.6793	+	0.103	18%	No
Variabilty of Δ NI* over Δ CF*	811	245	0.7600	0.8616	+	0.102	13%	No
Correlation between ACC and CF	848	248	-0.6707	-0.5610	-	0.110	-16%	**
Correlation between ACC* and CF*	811	245	-0.6054	-0.5377	-	0.068	-11%	No
Small Positive NI (SPOS) (n=1156)				-0.3014	-			No

Timely loss recognition

Large Negative NI (LNEG) (n=1156)				-0.9824	+			*
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$$NI = \beta_0 + \beta_1 RD + \beta_2 R + \beta_3 R^* RD + \varepsilon$$

	N	B ₂	t(β_2)	B ₃	t(β_3)	Adj.R ²
Pre-adoption	1023	0.04	2.81	0.16	4.84	7.43%
Post-adoption	240	-0.03	-1.41	0.30	2.33	3.19%
Expected sign		?		+		
Test of pre- and post- difference	1263	-0.07	-2.60	0.14	1.01	7.94%
Level of significance		**		No		

$$\Delta NI = \lambda_0 + \lambda_1 D \Delta NI_{t-1} + \lambda_2 \Delta NI_{t-1} + \lambda_3 D \Delta NI_{t-1} * \Delta NI_t + \varepsilon$$

	N	λ_2	t(λ_2)	λ_3	t(λ_3)	Adj.R ²
Pre-adoption	1011	0.05	1.11	-0.52	-7.49	7.48%
Post-adoption	248	0.15	2.45	-1.39	-8.85	27.23%
Expected sign		?		-		
Test of pre- and post- difference	1259	0.10	1.19	-0.87	-4.61	12.67%
Level of significance		No		**		

Table 6**Balanced panels – Comparison of voluntary adopters and resisters' accounting quality around IFRS adoption**

In this table we limit the observations to firms that have an equal number of pre- and post- observations. In Panel A we include firms that have data the year before IFRS adoption and the year after. In Panel B we include firms that have data in the two years before IFRS adoption and the two years after. In Panel C we test the difference in the post-IFRS accounting quality changes of resisters against those of voluntary adopters as a control group. For the one-year tests in Panel C we exclude firms that adopted IFRS in 2003 and 2004. For the two-year tests in Panel C we exclude firms that adopted IFRS in 2002, 2003 and 2004.

<i>Earnings management</i>	Obs		Pre-	Post-	Expected	Difference	%Difference	Level of
	Pre	Post	adoption	adoption	sign			significance
Panel A: One year before and after adoption								
<i>Voluntary adopter, one year before and after adoption:</i>								
Variabilty of Δ NI	95	95	0.0038	0.0043	+	0.001	14.8%	No
Variabilty of Δ NI over Δ CF	95	95	0.5321	0.8298	+	0.298	56.0%	No
<i>Resisters, one year before and after adoption:</i>								
Variabilty of Δ NI	162	162	0.0076	0.0056	+	-0.002	-25.6%	No
Variabilty of Δ NI over Δ CF	162	162	0.6601	0.7368	+	0.077	11.6%	No
Panel B: Two years before and after adoption								
<i>Voluntary adopter, two years before and after adoption:</i>								
Variabilty of Δ NI	160	160	0.0030	0.0028	+	-0.000	-7.7%	No
Variabilty of Δ NI over Δ CF	160	160	0.4792	0.6831	+	0.204	42.6%	No
<i>Resister, two years before and after adoption:</i>								
Variabilty of Δ NI	232	232	0.0081	0.0042	+	-0.004	-48.3%	No
Variabilty of Δ NI over Δ CF	232	232	0.7865	0.6778	+	-0.109	-13.8%	No
Panel C: Change for resisters relative to voluntary adopters around 2005:								
	Obs		Post-Pre	Post-Pre	Expected	Resister -- Voluntary		Level of
	Rest.	Vol.	Resister	Voluntary	sign			significance
<i>One year before and after adoption:</i>								
Variabilty of Δ NI	324	186	-0.0019	0.0004	+	-0.0023		No
Variabilty of Δ NI over Δ CF	324	186	0.0767	0.1807	+	-0.1039		No
<i>Two years before and after adoption:</i>								
Variabilty of Δ NI	464	248	-0.0039	-0.0025	+	-0.0014		No
Variabilty of Δ NI over Δ CF	464	248	-0.1087	-0.0853	+	-0.0234		No

Table 7
Descriptive statistics on insider characteristics

This table presents descriptive statistics on insider characteristics for voluntary adopters and resisters.

Closely held shares represent shares held by insiders as defined by Worldscope. Bank ownership is the percentage of shares owned by banks and trusts as reported by Thompson Ownership for December 2004. Leverage is long-term debt divided by the sum of long-term debt and market value of equity. Analyst following is the natural logarithm of the number of analysts providing I/B/E/S with a forecast. Equity issue is an indicator variable that takes the value one if the firm issued equity in 2002, 2003 and 2004, and zero otherwise. Except for bank ownership and equity issue all variables are measured as the median of 2002, 2003 and 2004.

The significance of differences in means (medians) is calculated using two-sample t-tests with equal variances (Wilcoxon rank-sum tests). ** indicates significance at the 5% level (one-sided tests) and * indicates significance at the 10% level (one-side tests).

	Expected direction	Voluntary adopters			Resisters			Test of difference	
		Obs	Mean	Median	Obs	Mean	Median	Mean	Median
Closely held shares	Voluntary < Resisters	175	51.84	51.62	110	69.20	74.03	(5.56)**	(5.20)**
Bank ownership	Voluntary < Resisters	214	0.87	0.00	141	1.74	0.00	(1.45)*	(-1.80)**
Bank ownership (when > 0)	Voluntary < Resisters	94	1.99	0.37	44	5.58	0.75	(2.34)**	(1.95)**
Leverage	Voluntary < Resisters	234	0.20	0.12	172	0.25	0.15	(2.10)**	(0.90)
Analyst following	Voluntary > Resisters	256	1.37	1.10	177	0.46	0.00	(10.79)**	(10.41)**
Equity issue	Voluntary > Resisters	256	0.45	0.00	177	0.20	0.00	(5.44)**	(5.27)**

Table 8
Multivariate analysis of insider characteristics

This table provide the results of a logistic regression where the dependent variable takes the value one if the firm adopted IFRS in 2005 (resister) and zero if it adopted in 2004 or before (voluntary adopter).

The insider characteristics are defined as in Table 7. The control variables are defined as follows. Growth is sales growth. Big 4 is an indicator that takes the value one if the firm was audited by PricewaterhouseCoopers, Ernst & Young, Deloitte or KPMG in 2002, 2003 or 2004, and zero otherwise. Size is the natural logarithm of market value of equity. Number of foreign segments is the number of foreign segments reported by the firm in 2005. Foreign sales to total sales are foreign sales divided by total sales as reported by Worldscope. Age is the natural logarithm of the number of years between founding and 2007. Return on assets is return on assets reported by Worldscope. Bank is an indicator that takes the value one if Worldscope classifies the firm as a bank, insurance or other financial company in 2004 and zero otherwise. Industrial is an indicator that takes the value one if Worldscope classifies the firm as an industrial company in 2004.

Coefficients are followed by t-values in parentheses, using White (1980) heteroskedasticity-robust errors. ** indicates significance at the 5% level (one-sided tests) and * indicates significance at the 10% level (one-side tests).

	Expected sign	Coefficient	Z
<i>Insider characteristics:</i>			
Closely held shares	+	0.0184**	(2.14)
Bank ownership	+	0.1092**	(2.47)
(Bank ownership)*(Bank)	-	-0.1076**	(-1.88)
Leverage	+	1.5270**	(1.86)
Analyst following	-	-1.2424**	(-4.87)
Equity issue	-	-0.8578**	(-2.27)
<i>Control variables:</i>			
Growth	-	-0.0017	(-0.17)
Big 4	-	-0.3824	(-0.75)
Size	-	-0.3199**	(-1.93)
Number of foreign segments	-	-0.2312**	(-2.26)
Foreign sales to total sales	-	0.0115	(0.36)
Foreign listings (dummy)	-	0.9192	(0.90)
Age	+	0.5661**	(2.55)
Return on assets	?	0.0541**	(1.83)
Bank (dummy)	?	-0.3121	(-0.11)
Industrials (dummy)	?	-1.0944	(-0.41)
Intercept	?	2.8855	(0.95)
Observations			220
Pseudo-R ²			0.4069