



Improving earnings quality: The effect of reporting incentives and accounting standards

Christoph Watrin¹, Robert Ullmann^{*}

Institute for Accounting and Taxation, Westfälische Wilhelms-Universität, Universitätsstrasse 14-16, 48143 Münster, Germany

ARTICLE INFO

Keywords:

Accounting standards
Reporting incentives
Earnings quality
Voluntary IFRS adoption
Mandatory IFRS adoption
Earnings management
Information asymmetry

ABSTRACT

We investigate the different effects on earnings quality of accounting standards and reporting incentives for Germany over the period 1994 to 2005. To this end, we control for reporting incentives at the firm level, instead of the country level, by using the timing of voluntary IFRS adoption as a proxy for reporting incentives. We then include reporting incentives in an analysis of earnings management and information asymmetry. Contrary to common expectation, we find that IFRS reporting potentially decreases earnings quality on average; but also that reporting incentives appear to have lower effects on earnings quality in IFRS statements than in GGAAP statements. Thus, IFRS may lead to more homogenous earnings quality across firms.

© 2012 Elsevier Ltd. All rights reserved.

1. Introduction

Much attention in current accounting research is given to the effect of accounting standards on earnings quality. However, earnings quality is not likely to be determined by accounting standards alone, because accounting standards cannot address the level of detail that is required in business, they lag innovations in practice, and their implementation generally requires judgment (e. g., Ball, Kothari, & Robin, 2000; Burgstahler, Hail, & Leuz, 2006). Consequently, even within the same accounting environment, similar companies can use discretionary items to report financial earnings of significantly different quality to the public.

We address this issue in the setting of the German capital market, where the International Financial Reporting Standards (IFRS) have largely replaced the German Generally Accepted Accounting Principles (GGAAP) over the last decade.² Specifically, we ask whether the results of extant earnings quality studies on the German capital market (e.g., Gassen & Sellhorn, 2006; Leuz, 2003; Leuz & Verrecchia, 2000; van Tendeloo & Vanstraelen, 2005) – where reporting incentives are not controlled for – are comparable to the results that are obtained when reporting incentives are introduced to the model. We thereby focus on earnings management

and information asymmetry, which arguably are the two most important earnings quality characteristics.

Germany provides a valuable “natural experiment” for research in the area of reporting incentives. Starting in 1998 the German commercial code allowed listed companies to choose which internationally accepted accounting standards to use in preparing their consolidated financial statements. This resulted in the unique situation where different accounting standards, particularly IFRS and GGAAP, coexisted in Germany's capital market in the late 1990s and the beginning of the new millennium (e. g., Leuz, 2003). German companies were therefore given a considerable period of time in which they could voluntarily comply with IFRS in preparing their consolidated financial statements. Considering the different origins of IFRS and GGAAP, the decision to switch to IFRS signals that management is incentivized to comply with shareholder-orientated, fair value-based accounting rules, instead of the creditor-oriented accounting rules of GGAAP. Given the particular historical development of the German accounting environment as a whole, a firm's costs of this signal depend on the point in time at which IFRS was first adopted. Our research thus builds on the assumption that the timing of IFRS adoption can be used as a proxy for a company's reporting incentives.

In our analysis, we observe that IFRS on average either has no significant effect on earnings quality or even decreases earnings quality relative to GGAAP. Moreover, we find that reporting incentives have an effect on earnings quality in both GGAAP and IFRS. Most importantly, we show that earnings quality in IFRS reporting is less affected by reporting incentives than in GGAAP and thus that IFRS might lead to a more homogenous earnings quality across firms.

We extend prior research in three ways. First, we contribute to the discussion about how reporting incentives influence on earnings quality. Prior research shows that institutional differences across

^{*} Corresponding author. Tel.: +49 251 8321924; Fax: +49 251 8321824.

E-mail addresses: christoph.watrin@wiwi.uni-muenster.de (C. Watrin), robert.ullmann@wiwi.uni-muenster.de (R. Ullmann).

¹ Tel.: +49 251 8322880; Fax: +49 251 8321824.

² The IFRS include the International Accounting Standards (IAS) and the standards of the International Accounting Standards Board (IASB), as well as the interpretations of all standards by the Standing Interpretations Committee (SIC) and the International Financial Reporting Interpretations Committee (IFRIC). In order to keep our line of arguments simple, we use IFRS to subsume all of the above.

countries influence reporting quality. However, in contrast to the majority of prior studies, we use a sample of firms that are subject to the exact same institutional framework and legislation. We therefore are able to investigate at the firm level whether reporting incentives influence earnings quality. Second, we provide theoretical discussion and empirical evidence that the timing of the adoption of new accounting standards can in fact be used to proxy for differences in reporting incentives, which presumably in turn lead to differences in earnings quality. Since IFRS adoption was optional in many European Union (EU) member states for more than a decade, the approach introduced below enables researchers in other EU member states to include reporting incentives in their earnings quality analyses as well. Third, we utilize the given setting to show the effect of reporting incentives on two selected measures of earnings quality in Germany and to compare these to the effect that derives from accounting standards alone. We thereby focus on the two most important earnings quality measures, namely earnings management and information asymmetry. In sum, we contribute to the ongoing discussions about the effects of accounting standards and reporting incentives on earnings quality.

2. Development of accounting standards in Germany

GGAAP are generally considered to be among the more extreme examples of the continental model of code law accounting (Joos & Lang, 1994). The main objectives of GGAAP are to preserve equity and to protect creditors. Toward these ends, the GGAAP standards offer opportunities to create hidden reserves and oblige companies to report income carefully. GGAAP therefore tend to result in understated earnings (Harris, Lang, & Möller, 1994).

The German accounting system distinguishes between unconsolidated and consolidated financial statements. Unconsolidated financial statements are used as the basis for a company's dividend decision, and must be reported in GGAAP until today. They are closely related to the German tax statement via strong book-tax conformity and thus also impact on the tax burden of a company. Consolidated financial statements are derived based on the unconsolidated financial statements for the entire corporate group. In contrast to the unconsolidated financial statements, consolidated financial statements serve purely informational purposes. Even though they are technically derived from the unconsolidated financial statements of the respective group, discretionary accounting items are often revaluated according to specific group needs with regard to capital markets. In the German accounting system, consolidated financial statements have no direct implications for dividend policy and the level of formal book-tax conformity is low. Consolidated tax statements do not exist.

During the 1990s, German companies became more and more dependent on capital from international shareholders and therefore faced an increasing need to adopt reporting standards accepted by the international capital markets. However, until 1998, the German commercial code accepted neither unconsolidated financial statements nor consolidated financial statements if they were not prepared according to GGAAP. As a result, German companies adopted strategies to simultaneously meet their obligations under GGAAP and the requirements of the international capital markets. Two strategies were common. First, companies used available accounting discretion to prepare GGAAP financial statements that were as close as possible to statements prepared under internationally accepted standards (dual reporting). Second, firms prepared two separate sets of financial statements for the same year, one according to GGAAP and one according to internationally accepted standards (parallel reporting).

In reaction to the rapid developments of accounting standards around the world and the increasing dependence of German

companies on international capital markets, the German Capital Raising Facilitation Act (KapAEG) was introduced in April 1998.³ It allowed listed companies to prepare consolidated financial statements according to any set of internationally accepted accounting standards instead of GGAAP. The two most relevant internationally accepted accounting standards at that time were IFRS and the United States Generally Accepted Accounting Principles (USGAAP). Consequently, the most important effect of the KapAEG was that German companies now had the opportunity to compete for equity capital internationally, without the costs of dual or parallel reporting. However, there was substantial political debate about whether IFRS or another accounting regime (for instance, USGAAP) should be made mandatory for all of the EU in the long run, which posed considerable uncertainty for German companies interested in converting to an internationally accepted accounting standard.

In July 2002 this uncertainty was resolved with EU Order 1606/2002, which made adoption of IFRS mandatory for all companies listed on capital markets within the EU. This Order declared that all consolidated financial statements for firm years starting in 2005 had to be prepared according to IFRS.⁴ Thus, with the uncertainty resolved about the reporting standards that would become mandatory within the EU, companies that were willing to adopt international accounting standards but unwilling to bear the costs of choosing a standard that might not prevail could safely adopt IFRS as of July 2002.

3. Previous research

Earnings quality generally refers to the quality of the earnings reported on the financial statements, as opposed to the broader concept of reporting quality, because earnings is the summary measure on which stakeholders of listed companies mainly focus. With regard to earnings quality, the most frequently investigated characteristics are earnings management and information asymmetry. Most recent research seeks to connect these earnings quality characteristics to reporting incentives. Below we therefore discuss in turn the results of existing work on reporting incentives, earnings management, and information asymmetry.

3.1. Reporting incentives

Recently, the effect of reporting incentives on earnings quality has gained considerable attention, with studies such as Ball, Robin, and Wu (2003), Lang, Raedy, and Wilson (2006), Burgstahler et al. (2006), and Bushman and Piotroski (2006).

Ball et al. (2003), Lang et al. (2006), and Bushman and Piotroski (2006) use institutional differences in factors such as legal system, security laws, political economy, and enforcement of accounting standards across countries to proxy for the reporting incentives of a particular group of companies for which the accounting standards chosen are the same or similar. Burgstahler et al. (2006) include capital market pressure in their analysis by comparing private and public firms in different EU member states. They argue that capital market pressure increases the earnings quality of the publicly listed firms because companies that provide low quality earnings are either punished by the capital market or screened out during the process of going public.

Overall, these studies find that reporting incentives strongly affect the de facto application of given accounting standards and hence that differences in reporting incentives, ceteris paribus, lead to differences in earnings quality. Despite these findings, however, reporting

³ In 1978, the EU adopted the 4th EU Directive to harmonize unconsolidated statements among its member states. In 1983, the 7th EU Directive was introduced to harmonize consolidated statements. Both Directives were implemented in the German accounting system via the Accounting Directives Act (BiRiLiG), but their impact on the reporting regime in Germany was only minor.

⁴ In contrast to a Directive, an EU Order is binding law in all member states of the EU.

incentives are rarely taken into account when analyzing the effects of different accounting standards on the numerous earnings quality measures that are commonly used in the literature. Our study adds to prior research by asking whether characteristics on firm level give rise to different reporting incentives.

3.2. Earnings management

Earnings management refers to the use of discretionary accounting to influence financial statements so as to report an outcome that does not correspond to the underlying economic performance of the company. Characterized broadly as such, earnings management has been previously analyzed via level of accrual quality (e.g., [Dechow, 1994](#); [Dechow & Dichev, 2002](#); [Jones, 1991](#); [Leuz, Dhananjay, & Wysocki, 2003](#)). Generally, measures of accruals manipulation can be used to indicate the extent to which insiders exercise discretion in reporting items ([Leuz et al., 2003](#)). In this regard, a high level of accruals manipulation is often attributed to a high level of earnings management, and in turn low earnings quality.

Research on earnings management activities under IFRS, particularly in the German market, has been conducted by [van Tendeloo and Vanstraelen \(2005\)](#) using data from 1999 to 2001. Their hypothesis is that the utilization of internationally accepted standards should lead to lower earnings management activity. Contrary to their hypotheses, however, they find evidence of an increase in earnings management activity after the adoption of IFRS. [Gassen and Sellhorn \(2006\)](#) subsequently analyze the difference in earnings management between GGAAP and IFRS regimes with data from 1998 to 2004. They do not find significant differences in earnings management activity and, therefore, their observations do not support the findings of [van Tendeloo and Vanstraelen \(2005\)](#). Our study differs from those of [van Tendeloo and Vanstraelen \(2005\)](#) as well as [Gassen and Sellhorn \(2006\)](#) in that we include reporting incentives in our analysis.

3.3. Information asymmetry

Information asymmetry describes differences in the amount of information available between well-informed insiders, who have access to high quality information, and the general public, whose information is solely gathered from publicly available sources. To reduce information asymmetry, the information gap between insiders and the general public must be closed. One often-cited way to close this gap is to increase the amount of information that must be made available to the public, that is, to increase disclosure.

Following this rationale, [Leuz and Verrecchia \(2000\)](#) analyze disclosure requirements in the German capital market. Using data from 1998, they find that firm-years reported in IFRS are associated with a higher level of disclosure and that information asymmetry should consequently be lower for IFRS statements. Building on this study, [Daske \(2006\)](#) reports increased costs of capital for IFRS adopters in the time period under investigation. [Leuz \(2003\)](#) also conducts another study, which focuses attention to Germany's Neuer Markt, a former segment of the German stock market for highly innovative companies, during the period of 1999 to 2000, to directly compare the different abilities of IFRS and USGAAP to lower the extent of information asymmetry.⁵ He finds that IFRS financial statements do not differ significantly in their disclosure from USGAAP statements. However, given his unique sample, Leuz cannot draw conclusions about the relation between IFRS and GGAAP. In contrast to these previous studies, we use companies listed on all segments of the German capital market.

⁵ Firms had to adopt either IFRS or USGAAP in order to be listed in the Neuer Markt and thus, controlling for self-selection bias, these companies can be compared directly within the same set of capital market regulations.

4. Hypotheses

We investigate whether or not reporting incentives have an effect on earnings quality in a setting with two different accounting standards, namely IFRS and GGAAP, which also presumably have an impact on earnings quality themselves. We therefore investigate a series of research questions. We first focus on the effects that can be observed when reporting incentives are not controlled for. Doing so allows us to connect our observations to previous research, as discussed above, where reporting incentives are in fact often not considered. On the one hand, previous research investigating differences between GGAAP and IFRS usually claims that IFRS should increase earnings quality. This theoretical conjecture is often based on the difference in aim of the two accounting standards under investigation – creditor protection for GGAAP and true and fair view for IFRS. On the other hand, empirical research as stated above finds much more ambiguous results. We thus firstly hypothesize:

H1. GGAAP reported statements and IFRS reported statements differ significantly in level of earnings quality when reporting incentives are not controlled for.

After establishing this link to previous theory, we investigate whether or not reporting incentives have an impact on earnings quality. For this question, previous research is rare and if it exists its findings are heterogeneous. Hence, we cannot make conjectures about the nature of a potential effect of reporting incentives on earnings quality. On the one hand, it could be the case that management intends to attract more shareholders and therefore uses the presumably high quality of IFRS reporting to in fact increase earnings quality. On the other hand, for instance, [Ball et al. \(2000\)](#) as well as [van Tendeloo and Vanstraelen \(2005\)](#) argue that the adoption of a high quality accounting standards such as IFRS might be a necessary condition for high earnings quality but not a sufficient condition. Particularly, companies could also derive benefits from merely signaling high earnings quality by adopting IFRS while at the same time leaving factual earnings quality unchanged or even decreasing it. In sum, to consider the respective effects of reporting incentives on earnings quality, two hypotheses are tested consecutively.

H2. Financial statements of companies with unequal accounting standards differ significantly in level of earnings quality when reporting incentives are held constant.

H3. Financial statements of companies with unequal reporting incentives differ significantly in level of earnings quality when accounting standards are held constant.

H2 is similar to H1. However, relative to H1, H2 explicitly controls for reporting incentives. In technical terms, H1 merely present the weighted average over the results from H2. Notwithstanding, results for H1 and H2 do not necessarily need to point in the same direction in all instances, as the naïve approach in H1 does not allow for the detailed investigation of individual effects. Consequently, H2 allows more detailed discussion of the results from H1 with regard to reporting incentives.

H3 then targets at investigating the isolated effects of reporting incentives on earnings quality under both GGAAP and IFRS individually. In our setting of a change from GGAAP to IFRS, H3 allows us particularly to reveal, on the one hand, the effects that reporting incentives have on the level of earnings quality in GGAAP statements and, on the other hand, whether respective differences do prevail with the same firms after IFRS adoption.

Finally, we ask whether there is an interacted effect between the effects of accounting standards and reporting incentives on earnings quality.

H4. Differences between companies with unequal reporting incentives change significantly when financial statements are prepared in IFRS instead of GGAAP.

If H4 was true, it could be stated that reporting incentives must be considered when investigating earnings quality differences caused by a change of accounting standard from GGAAP to IFRS or vice versa. Otherwise, effects that might be observed when considering changes in accounting standards alone (e.g., H1) could be amplified or counteracted by firm level reporting incentives, thus potentially invalidating respective analyses.

Overall, this sequence of hypotheses allows us to investigate three distinguished research issues. First, it allows considering the earnings quality differences between the two accounting standards under review when influenced by reporting incentives (H1, H2). Second, it enables isolated analysis of reporting incentives' impact on earnings quality in both IFRS and GGAAP (H3). Finally, it enables analysis of the impact of differences in reporting incentives between firms on the effects that result from a change of accounting standard (H4), as it has occurred all over Europe in the last decade. Investigating these research issues will yield information about the effects of both accounting standards and reporting incentives on earnings quality.

5. Empirical strategy

While there exists voluminous work on the relationship between accounting standards and earnings quality, a company's incentive to in fact apply available accounting discretion such that highest possible earnings quality is provided to stakeholders is arguably a key determinant of earnings quality. To distinguish between the effect of accounting standards and the effect of a company's reporting incentives on earnings quality, we need to identify variables that can be used as proxies for each of the two potential effects.

The accounting standards chosen by a company can be observed directly. In our setting, it is possible to obtain consolidated financial statements of listed companies reported in IFRS, USGAAP, and GGAAP although, in order to obtain clear-cut results, we do not consider companies that reported in USGAAP at any time during our sample period. All companies on the German capital market can be expected to face similar market environments, which likely influence accounting standard utilization (Burgstahler et al., 2006). Further, tax accounting rules are virtually the same for all listed companies in Germany, and given the history of the German accounting environment, characteristics of companies' earnings quality can be observed before and after their transition from GGAAP to IFRS. Thus, by controlling for the general capital market environment, influences from tax law, and the characteristics of company earnings quality prior to IFRS adoption, our particular setting allows us to straightforwardly investigate the effect of both IFRS and GGAAP on earnings quality.

In contrast to its accounting standard, a company's reporting incentives typically cannot be observed directly. We instead use the timing of IFRS adoption as a proxy for reporting incentives. The rationale of this approach is that, given the development of accounting standards in Germany, IFRS reporting became less costly over time and therefore, ceteris paribus, the expected (gross) benefits of IFRS reporting are presumably higher for those companies that adopted IFRS earlier, as higher costs impact on net benefits. Differences in benefits would then imply differences in reporting incentives, which can be proxied for by the timing of IFRS adoption.

Benefits from IFRS reporting include both the mere signaling effect of using an accounting standard that is widely viewed as high quality and also the availability of IFRS reporting techniques. The cost of IFRS reporting for a German company is mainly influenced by: (1) the requirements of dual or parallel reporting; (2) the risk of deciding in favor of one set of accounting standards when the decision about

which set of standards to mandate in the long term had not yet been made by legislators; (3) the availability and price of sufficient IFRS know-how, particularly at the time of transition; (4) the risk of future development of IFRS regulations compared to the well-established GGAAP; and (5) the risk of low acceptance of IFRS in some international capital markets, particularly the United States. The costs associated with (3), (4), and (5) decreased monotonically over time as IFRS reporting became more accepted, and indeed common, around the world. The costs associated with (1) decreased dramatically in 1998, when German legislation allowed for preparation of consolidated statements in IFRS without the requirement to simultaneously prepare a respective GGAAP statement. The costs associated with (2) vanished in 2002 when it was determined via a binding EU Order that IFRS would become mandatory for all European listed companies starting in 2005.

Given these developments, we argue that three groups of IFRS adopters with different reporting incentives can be distinguished. First, the group of companies that adopted IFRS prior to July 2002 can be expected to have perceived the highest benefits from preparing consolidated statements in line with IFRS. All companies adopting IFRS prior to 2002 chose to do so voluntarily and were even willing to bear the risk that another set of accounting standards might become the mandatory set of standards within the EU in the long run. In addition, the sub sample of companies that chose to report in line with IFRS even prior to 1998 had to accept the costs of dual or parallel reporting. Thus, overall, this group was willing to bear highest costs in order to apply IFRS reporting rules. We refer to the group of companies that adopted IFRS prior to July 2002 as voluntary adopters. The second group we identify, the earlier compliers, consists of companies that changed to IFRS in accounting periods ending after July 2002 but starting before January 2005. This group comprises those companies that were unwilling to bear the risk that USGAAP might be selected as the mandatory set of standards by the EU, thus to bear the costs associated with (2) from above. Third, firms that did not adopt IFRS until they were required to do so in 2005 comprise our late followers. Firms in this last group are expected to be those with the lowest perceived benefits from IFRS reporting, as they adopted IFRS merely when they were required to do so by law.

In order to then isolate the effect of IFRS reporting and reporting incentives, we employ two different OLS regressions, where OLS2 is closely related to the difference-in-difference estimator:

OLS1:

$$EQ_{it} = \beta_0 + \beta_1 IFRS_{it} + \sum_Y \beta_Y YEAR_t + \varepsilon_{it} \quad (1)$$

OLS2:

$$EQ_{it} = \beta_0 + \beta_1 VOL_i + \beta_2 EAR_i + \beta_3 VOL_i IFRS_{it} + \beta_4 EAR_i IFRS_{it} + \beta_5 LAT_i IFRS_{it} + \sum_Y \beta_Y YEAR_t + \varepsilon_{it} \quad (2)$$

where:

EQ_{it} is the earnings quality measure used in the particular analysis of company i in period t ;

VOL_i is a binary variable that equals one if company i is a voluntary adopter, and zero otherwise;

EAR_i is a binary variable that equals one if company i is an early complier, and zero otherwise;

LAT_i is a binary variable that equals one if company i is a late follower, and zero otherwise;

$IFRS_{it}$ is a binary variable that equals one if for firm-year t company i reports in IFRS, and zero otherwise; and

$YEAR_t$ is the year fixed effects.

In light of our intention to investigate earnings management and information asymmetry as the two most important characteristics of earnings quality, we use two different measures for EQ_{it} . For each of these measures of earnings quality, we run OLS1 and OLS2. From the regression results, we extract coefficients that allow for clear-cut analysis of the effects from accounting standards and reporting incentives on earnings quality as summarized in Table 1. The notation from Table 1 will be used throughout the paper.

The coefficients α_A to α_C provide information about the effect of the two accounting standards on earnings quality and the difference between them. Thus, we measure the average effect that would obtain in any research not controlling for differences in reporting incentives (H1). This allows us to compare our results to previous studies on earnings quality in the German capital market. The coefficients α_1 to α_6 provide information on the individual level of the earnings quality variable for each group before and after IFRS adoption. The incremental effects of IFRS with respect to the GGAAP statements when accounting for different reporting incentives (H2) are elicited individually for voluntary adopters (α_7), early compliers (α_8), and late followers (α_9). If we expect earnings quality to be influenced exclusively by accounting standards, α_7 , α_8 , and α_9 should not be different from one another and should move in the same direction as α_C , because group membership should not have an effect. Furthermore, we are also able to determine differences between the three different groups of companies when using the exact same accounting standard (H3) for GGAAP statements (α_{10} , α_{11} , α_{12}) as well as IFRS statements (α_{13} , α_{14} , α_{15}). Significant coefficients on α_{10} , α_{11} , and α_{12} would indicate that the three groups of companies have different characteristics in terms of earnings quality, even prior to IFRS adoption. Coefficients α_{13} , α_{14} , and α_{15} indicate differences in earnings quality across groups after implementation of IFRS. Finally, α_{16} , α_{17} , and α_{18} are difference-in-difference estimators for comparing voluntary adopters and early compliers (α_{16}), voluntary adopters and late followers (α_{17}), and early compliers and late followers (α_{18}). These coefficients reveal whether differences between GGAAP reported statements and IFRS reported statements are different for companies with unequal reporting incentives (H4). However, technically, it should also be recalled that joint nonsignificance of α_{16} , α_{17} , and α_{18} does not imply irrelevance of reporting incentives for earnings quality research.

5.1. Earnings management

We use discretionary accruals as a proxy for earnings management. This is consistent with van Tendeloo and Vanstraelen (2005) and Gassen and Sellhorn (2006). To calculate nondiscretionary

accruals, we use the Jones (1991) approach in its modified version as introduced by Dechow, Sloan, and Sweeney (1995). We begin by computing accruals as earnings taken from the cash flow statement minus net cash flow from operating activities. We compute:

$$\frac{ACC_{it}}{ASSET_{it-1}} = \gamma_0 \frac{1}{ASSET_{it-1}} + \gamma_1 \frac{\Delta SALES_{it} - \Delta AR_{it}}{ASSET_{it-1}} + \gamma_2 \frac{PPE_t}{ASSET_{it-1}} + \varepsilon_{it} \quad (3)$$

where:

ACC is accruals;

ASSET is total assets;

PPE is property, plants, and equipment;

SALES denotes revenue; and

AR is the amount of accounts receivables.

SALES and AR are included with their first difference. The coefficients γ_0 , γ_1 , and γ_2 are computed annually at industry level.

Discretionary accruals, scaled by lagged total assets, are then defined as the residuals from Model (3):

$$DACC_{it} = |\hat{\varepsilon}_{it}|. \quad (4)$$

Note that we compute absolute values because we are interested in the magnitude of earnings management rather than the direction. We then use DACC as an endogenous variable in OLS1 and OLS2 from above.

$$DACC_{it} = \beta_0 + \beta_1 IFRS_{it} + \sum_Y \beta_Y YEAR_t + \varepsilon_{it} \quad (5)$$

$$DACC_{it} = \beta_0 + \beta_1 VOL_i + \beta_2 EAR_i + \beta_3 VOL_i IFRS_{it} + \beta_4 EAR_i IFRS_{it} + \beta_5 LAT_i IFRS_{it} + \sum_Y \beta_Y YEAR_t + \varepsilon_{it}. \quad (6)$$

5.2. Information asymmetry

Similar to previous research, for instance, Lang and Lundholm (1993) and Leuz and Verrecchia (2000), we use share price volatility as a proxy for information asymmetry. Thus, we compute:

$$VOLA_{it} = \frac{\sigma_{i(t-250tradingdays)}}{\mu_{i(t-250tradingdays)}} \quad (7)$$

where

σ denotes volatility and

μ is the average share price, both computed for the last 250 trading days prior to the account closing date.

The rationale behind VOLA is that a low extent of information asymmetry should lead to fewer shocks in the capital market, as information availability is more aligned between insiders and the general public. Consequently, unexpected upsets in the market should occur less often, decreasing overall volatility. The relationship between VOLA and information asymmetry is therefore positive. OLS1 and OLS2 are run as follows.

$$VOLA_{it} = \beta_0 + \beta_1 IFRS_{it} + \beta_2 BETA_{it} + \sum_Y \beta_Y YEAR_t + \varepsilon_{it} \quad (8)$$

$$VOLA_{it} = \beta_0 + \beta_1 VOL_i + \beta_2 EAR_i + \beta_3 VOL_i IFRS_{it} + \beta_4 EAR_i IFRS_{it} + \beta_5 LAT_i IFRS_{it} + \beta_6 BETA_{it} + \sum_Y \beta_Y YEAR_t + \varepsilon_{it}. \quad (9)$$

Note that VOLA could potentially also be influenced by factors other than accounting standards and reporting incentives, such as the general market environment, shifts in index composition, and

Table 1
Interpretation of coefficients from OLS1 and OLS2.

Coefficients	Accounting standards used		IFRS–GGAAP
	GGAAP	IFRS	
Pooled	$\alpha_A = \beta_0^{OLS1}$	$\alpha_B = \beta_0^{OLS1} + \beta_1^{OLS1}$	$\alpha_C = \beta_1^{OLS1}$
VOL	$\alpha_1 = \beta_0^{OLS2} + \beta_1^{OLS2}$	$\alpha_4 = \beta_0^{OLS2} + \beta_1^{OLS2} + \beta_3^{OLS2}$	$\alpha_7 = \beta_3^{OLS2}$
EAR	$\alpha_2 = \beta_0^{OLS2} + \beta_2^{OLS2}$	$\alpha_5 = \beta_0^{OLS2} + \beta_2^{OLS2} + \beta_4^{OLS2}$	$\alpha_8 = \beta_4^{OLS2}$
LAT	$\alpha_3 = \beta_0^{OLS2}$	$\alpha_6 = \beta_0^{OLS2} + \beta_5^{OLS2}$	$\alpha_9 = \beta_5^{OLS2}$
VOL–EAR	$\alpha_{10} = \beta_1^{OLS2} - \beta_2^{OLS2}$	$\alpha_{13} = (\beta_1^{OLS2} + \beta_3^{OLS2}) - (\beta_2^{OLS2} + \beta_4^{OLS2})$	$\alpha_{16} = \beta_3^{OLS2} - \beta_4^{OLS2}$
VOL–LAT	$\alpha_{11} = \beta_1^{OLS2}$	$\alpha_{14} = (\beta_1^{OLS2} + \beta_3^{OLS2}) - \beta_5^{OLS2}$	$\alpha_{17} = \beta_3^{OLS2} - \beta_5^{OLS2}$
EAR–LAT	$\alpha_{12} = \beta_2^{OLS2}$	$\alpha_{15} = (\beta_2^{OLS2} + \beta_4^{OLS2}) - \beta_5^{OLS2}$	$\alpha_{18} = \beta_4^{OLS2} - \beta_5^{OLS2}$

The regression where the coefficient is taken from is shown in superscript.

changes in tax regulations, which may not be related to changes in information asymmetry at all. Nevertheless, when using companies with different accounting standards in a similar market environment and by including year fixed effects, we anticipate being able to control for most of the relevant factors. VOLA is particularly influenced by the level of risk that a certain company incorporates with respect to the capital market. We therefore control for this additional factor using its beta coefficient over the 250 day trading period prior to account closing date as an independent control variable (BETA).

6. Data selection

We use a sample of consolidated statements from companies listed in the German capital market between 1994 and 2005. Data from 1993 is included additionally in those regressions that require first differences and lagged values. Our data are collected from multiple sources. First, information from the balance sheet, profit and loss account, and cash flow statement is obtained from the December 2006 Bureau van Dijk OSIRIS database. In particular, we extract from OSIRIS information about the variables necessary to compute discretionary accruals (DACC).

Second, data about stock performance are gathered from the January 2007 online version of the Thomson Financial DataStream Advance database. From this database we gather the daily share price for the listed companies in our sample and the corresponding price of the DAX 30, an index composed of the 30 largest German companies. These variables are then used to compute the variables VOLA and BETA.

Finally, the accounting standards variable must be derived. Information on the set of accounting standards used is gathered both from OSIRIS and DataStream. Unfortunately, complete information is not available from both databases and data cannot be readily cross-checked between them. Therefore, to further increase the robustness of our accounting standard variable, we designed a questionnaire. Companies were asked to state whether they had ever reported a consolidated financial statement in line with USGAAP and to report the date when they had first reported their consolidated financial statement in IFRS. The questionnaire was sent to the 827 companies in our original data set; 402 of these companies (48.61%) replied to our questionnaire. The accounting standard used for all firm-years is then derived as follows: When information on a particular firm-year is available on DataStream, this information is used. Information on OSIRIS is used when it is available for the remaining firm-years. The data are then tested for robustness and, where necessary, completed using the available questionnaires. Additional data are hand-collected in cases of ambiguous information.

We drop all companies for which complete information about the chosen set of accounting standards cannot be obtained. We also drop all companies that reported in line with USGAAP at least once between 1994 and 2005 as well as all insurance companies and banks (NAICS starting with 52). Because it is necessary to obtain clear-cut results, particularly around the aforesaid changes in the German accounting environment, we also exclude all companies with at least one financial reporting year not corresponding to the calendar year. Our final sample contains 407 companies and 3118 firm-years.

7. Results

7.1. Descriptive statistics

Table 2 provides an overview of the accounting standards used for consolidated financial statements between 1994 and 2005 in the German capital market. This table is derived after all insurances, banks, and companies that reported at least one financial year with financial year-end other than December 31 are excluded but before the companies that reported at least once in USGAAP are dropped.

Table 2
Accounting standards chosen by listed German companies.

Year		Accounting standard chosen			Total
		GGAAP	IFRS	USGAAP	
1994	N	139	1	0	140
	%	99.29	0.71	0.00	100.00
1995	N	142	2	1	145
	%	97.93	1.38	0.69	100.00
1996	N	169	5	5	179
	%	94.41	2.79	2.79	100.00
1997	N	210	10	18	238
	%	88.24	4.20	7.56	100.00
1998	N	286	28	34	348
	%	82.18	8.05	9.77	100.00
1999	N	306	54	53	413
	%	74.09	13.08	12.83	100.00
2000	N	268	95	72	435
	%	61.61	21.84	16.55	100.00
2001	N	237	111	79	427
	%	55.50	26.00	18.50	100.00
2002	N	192	151	82	425
	%	45.18	35.53	19.29	100.00
2003	N	185	165	76	426
	%	43.43	38.73	17.84	100.00
2004	N	157	210	54	421
	%	37.29	49.88	12.83	100.00
2005	N	17	387	7	411
	%	4.14	94.16	1.70	100.00
Total	N	3372	1485	681	4008
	%	63.17	27.82	12.76	100.00

We highlight four notable observations in Table 2. First, we observe that the internationally accepted accounting standards IFRS and USGAAP are rarely used until 1998, the year in which it became possible to substitute the GGAAP consolidated statement. Second, starting in 1998, we observe a strong increase in utilization of IFRS and USGAAP, though slightly more companies seem to have opted for IFRS, whereas after 2002 we see a continuing increase in IFRS application but a decrease in USGAAP utilization. Third, the number of companies covered in the sample increases strongly until 1999 but is almost constant thereafter. Finally, it can be observed that in 2005, 17 consolidated statements are still reported in GGAAP. This result is caused by an exception for companies that reported in USGAAP before July 2002. These companies are not obliged to prepare their consolidated financial statements in IFRS for firm-years starting before 2007. We then drop all companies that report at least once in USGAAP. Table 3 reports the numbers of companies over time that follow IFRS and GGAAP in the final sample used in this investigation.

Table 3 shows that the share of IFRS reporters increases over time until it reaches 100% in 2005. Furthermore, the strong increase in the number of companies covered by the sample until 1999, as seen in Table 2, can be observed in Table 3 as well. Descriptive statistics for the variables used in the earnings quality analysis are shown in Table 4.

7.2. Earnings management

Earnings management results using discretionary accruals from the modified Jones (1991) model are reported in Table 5.

Generally, a relatively lower level of discretionary accruals, that is, a negative coefficient, indicates a decrease in earnings management, and thus an increase in earnings quality. For the average effect of IFRS reporting on earnings management with respect to the pooled sample and compared to GGAAP, we find no significant differences (α_c). This result of H1 is consistent with the findings of van Tendeloo and Vanstraelen (2005) as well as Gassen and Sellhorn (2006). However, for the isolated effects of IFRS reporting on the three groups of companies (α_7 , α_8 , α_9), as covered by H2, we find that for

Table 3
Accounting standards chosen by firms in sample.

Year		Accounting standard chosen		Total
		GGAAP	IFRS	
1994	N	126	1	127
	%	99.21	0.79	100.00
1995	N	126	2	128
	%	98.44	1.56	100.00
1996	N	143	5	148
	%	96.62	3.38	100.00
1997	N	173	10	183
	%	94.54	5.46	100.00
1998	N	246	28	274
	%	89.78	10.22	100.00
1999	N	266	53	319
	%	83.39	16.61	100.00
2000	N	242	91	333
	%	72.67	27.33	100.00
2001	N	216	108	324
	%	66.67	33.33	100.00
2002	N	176	148	324
	%	54.32	45.68	100.00
2003	N	166	161	327
	%	50.76	49.24	100.00
2004	N	134	188	322
	%	41.61	58.39	100.00
2005	N	0	309	309
	%	0.00	100.00	100.00
Total	N	2014	1104	3118
	%	64.59	35.41	100.00

voluntary adopters a decrease in the use of discretionary accruals can be found after IFRS adoption.

Regarding the differences between groups in the GGAAP statements (α_{10} , α_{11} , α_{12}), we find that early compliers have a significantly lower level of earnings management than do voluntary adopters (α_{10}) and late followers (α_{12}). Voluntary adopters have a significantly higher level of earnings management compared to late followers (α_{11}). In IFRS statements (α_{13} , α_{14} , α_{15}) we find that voluntary adopters utilize marginal significantly more discretionary accruals than do early compliers (α_{15}). All other coefficients are insignificant. Therefore, with regard to H3, we find evidence that differences in level of earnings quality between the three groups exist in their GGAAP statements and that these differences either disappear or are only marginally significant in the IFRS statements.

With regard to H4, we observe that interaction effects of reporting incentives and accounting standards (α_{16} , α_{17} , α_{18}) are not significant.

7.3. Information asymmetry

We utilize share price volatility (VOLA) as our proxy for information asymmetry. The results for the information asymmetry analysis are shown in Table 6.

From theory, we expect to find a positive correlation between volatility and information asymmetry. Hence, a lower coefficient in the regressions in Table 6 indicates lower information asymmetry,

Table 4
Descriptive statistics.

Variable	Quartiles			Mean	Std dev
	25%	50%	75%		
ACC [thsd. €]	−11,450	20,500	2544	−94,911	994,613
PPE [thsd. €]	4134	27,712	135,520	702,549	4,074,313
DACC	0.028	0.073	0.173	0.153	0.246
VOLA	0.078	0.134	0.236	0.189	0.195
BETA	0.000	0.302	0.783	0.455	0.842

Table 5
Earnings management.

DACC	Accounting standard chosen		IFRS–GGAAP
	GGAAP	IFRS	
Pooled	0.098	0.089	−0.010
F-statistic			0.700
VOL	0.130	0.095	−0.035
F-statistic			2.820*
EAR	0.068	0.050	−0.019
F-statistic			0.520
LAT	0.100	0.042	−0.058
F-statistic			1.660
VOL–EAR	0.061	0.046	−0.016
F-statistic	11.320***	3.290*	0.260
VOL–LAT	0.030	0.053	0.023
F-statistic	2.840*	1.330	0.230
EAR–LAT	−0.032	0.008	0.039
F-statistic	7.480**	0.040	1.030

* Indicates significance at 10% level.

** Indicates significance at 5% level.

*** Indicates significance at 1%.

thus higher earnings quality. The coefficients on BETA, which was included to indicate the level of risk of a particular stock and thereby control for differences in volatility caused solely by differences in risk, are all positive, as is expected from capital market theory, and highly significant (not tabulated).

For H1, we find that IFRS reporting, on average, increases share price volatility (α_C), which is in line with findings by Leuz and Verrecchia (2000). Comparing α_7 , α_8 , and α_9 , as demanded by H2, we also find significant increases of VOLA in IFRS compared to GGAAP, but these arise only for early compliers (α_8) and late followers (α_9).

Comparing differences in the GGAAP statements of the three groups reveals that early compliers have a significantly lower level of VOLA than do voluntary adopters (α_{10}) and late followers (α_{12}). After IFRS adoption, these differences principally prevail between early compliers and voluntary adopters, as well as between early compliers and late followers. Hence, with regard to H3, we find that differences between the three groups of companies in terms of earnings quality are somewhat similar in their GGAAP and IFRS reported statements.

With regard to H4, α_{16} , α_{17} , and α_{18} are all nonsignificant.

Table 6
Information asymmetry.

VOLA	Accounting standard chosen		IFRS–GGAAP
	GGAAP	IFRS	
Pooled	0.088	0.192	0.104
F-statistic			108.730***
VOL	0.112	0.148	0.037
F-statistic			1.290
EAR	0.042	0.103	0.061
F-statistic			22.870***
LAT	0.064	0.137	0.073
F-statistic			14.300***
VOL–EAR	0.070	0.045	−0.025
F-statistic	5.220**	16.920***	0.560
VOL–LAT	0.048	0.012	−0.036
F-statistic	2.410	0.430	1.070
EAR–LAT	−0.022	−0.033	−0.012
F-statistic	8.250***	3.200*	0.330

* Indicates significance at the 10% level.

** Indicates significance at the 5% level.

*** Indicates significance at the 1%.

8. Discussion and sensitivity

8.1. Discussion

We investigate the effects of accounting standards and reporting incentives on earnings quality in a German sample of listed companies over 1994 to 2005 using four different hypotheses.

For the average effect of accounting standards on earnings quality without the consideration of reporting incentives (H1), we find similar effects than previous earnings quality research on the German market. Specifically, IFRS reporting compared to GGAAP reporting on average – contrary to theoretical expectations⁶ – either has nonsignificant effects on earnings quality (earnings management) or earnings quality is in fact decreased (information asymmetry).

Investigating these effects of IFRS reporting compared to GGAAP reporting separately for voluntary adopters, early compliers, and late followers, and thereby controlling for reporting incentives (H2), we find more heterogeneous results. More specifically, IFRS reporting tends to have positive effects on voluntary adopters only while effects for early compliers and late followers tend to be negative relative to the GGAAP statements: On the one hand, with regard to earnings management, where earnings quality of the pooled sample (H1) did not change significantly, voluntary adopters decreased their earnings management activity while financial statements of early compliers and late followers were not significantly different between GGAAP and IFRS. With regard to information asymmetry on the other hand, where earnings quality decreased significantly in the pooled sample (H1), earnings quality changes of voluntary adopters were nonsignificant while earnings quality for early compliers and late followers decreased significantly.

When comparing the three groups of companies on an isolated basis with their GGAAP statements (H3 for GGAAP), considerable differences in earnings quality characteristics are observable. For both earnings management and information asymmetry, voluntary adopters initially have the lowest earnings quality, followed by late followers and then early compliers.

As an interim result of H1, H2, and H3 for GGAAP, it may be stated that, prior to IFRS adoption, voluntary adopters appear in greatest need of all three groups for a signal of high earnings quality to the capital markets, as they have the lowest earnings quality level in their GGAAP statements. Given that IFRS is widely viewed as being of higher quality than is GGAAP, early and moreover voluntary IFRS adoption represents such a signal. More importantly, reconsidering results from H2, it can be observed that voluntary adopters do not merely use IFRS to signal high earnings quality but that they then in fact provide higher earnings quality in their IFRS statements relative to their GGAAP statements. Considered altogether, the early adoption of IFRS, the initially low level of earnings quality in their GGAAP statements, and the earnings quality improvements after IFRS adoption; it may be conjectured that voluntary adopters were unable to provide desired earnings characteristics in their GGAAP statements. As a solution, they chose to convert their accounting to IFRS, despite the risk that another internationally accepted accounting standard may become mandatory in the long term, which enabled them to report highest possible earnings quality to the capital markets. Consequently, voluntary adopters may be regarded as having high incentives with regard to reporting.

Early compliers, which adopted IFRS after voluntary adopters but prior to late followers, have the highest earnings quality of all three groups in their GGAAP statements. By adopting high quality IFRS relatively early, they likely thrive to send a positive earnings quality signal. Therefore it can be concluded that early compliers are

generally concerned about the perception of their quality of accounting by the capital markets. However, reconsidering H2, they in fact do not use IFRS to increase earnings quality (earnings management) or even decrease earnings quality after IFRS adoption (information asymmetry). Therefore, it must be stated that they appear willing to achieve good reputation on the capital markets even by means of sending misleading signals to stakeholders. In consequence, early compliers appear to be shareholder-oriented in general, but with a less favorable approach towards reporting than voluntary adopters.

Finally, late followers, despite their medium level of earnings quality in their GGAAP statements, also appear to generally use IFRS for a reduction of earnings quality. However, contrary to early compliers, they do not attempt to send a misleadingly positive earnings quality signal to the market. On this basis, it might be concluded that late followers are the least shareholder oriented of all three groups and, in addition, that they have the lowest reporting incentives.

In continuing the analysis of hypotheses, earnings quality differences between the three groups of companies in their IFRS statements (H3 for IFRS) are generally less or not significant compared to respective differences in their GGAAP statements. Thus, even though it can be concluded that the isolated effects of reporting incentives on earnings quality can in principle be found with both accounting standards; more importantly, earnings quality across groups is more homogeneous in IFRS reported statements than in GGAAP reported statements. Consequently, IFRS reporting appears to decrease the dependence of stakeholders on investigating reporting incentives when interpreting accounting information. Given that reporting incentives are very costly to observe, this is a considerable advantage of IFRS compared to GGAAP.

Interaction effects between reporting incentives and accounting standards (H4) do not exist in our data. Considering H2 and H4 jointly, we thus find only limited statistical evidence that reporting incentives must be considered in earnings quality research. Most importantly, findings from H4 indicate that reporting incentives of individual groups have no amplifying or counteracting effect on the earnings quality effects of an accounting standard change. However, statistical findings from H2 indicate that earnings quality analyses would be biased if reporting incentives have an impact on a company's probability to be included into a data set, or differently stated, findings from the pooled sample may not necessarily be valid in certain sub samples. Given that this selection bias cannot be controlled for without at least implicitly controlling for reporting incentives, reporting incentives should at a minimum be qualitatively considered by researchers and regulators wherever possible.

Overall, with respect to our particular analyses of the German capital market we find that IFRS reporting does not increase earnings quality compared to GGAAP reporting, but instead has a negative effect if any. At the same time, we find indication that IFRS reporting appears to decrease the impact of reporting incentives on earnings quality. Given that explicit consideration of reporting incentives is sophisticated if not impossible, the fact that IFRS reporting possibly decreases earnings quality on average may potentially be offset by its ability to homogenize earnings quality across all groups of firms despite their different reporting incentives. From a more technical point of view, we find indication that timing of IFRS adoption presents a sensible proxy for reporting incentives, as empirical findings with regard to the behavior of the three distinguished groups over time are reasonable in consideration of the historic evolution of the German accounting environment.

8.2. Sensitivity

As with any applied research, a few caveats merit discussion. In particular, our analysis relies strongly on our classification of the

⁶ For instance, refer to Ball et al. (2003) and van Tendeloo and Vanstraelen (2005) who state that common law accounting standards, such as IFRS, are widely viewed as higher quality than code law accounting standards, such as GGAAP.

three groups of companies, namely, voluntary adopters, early compliers, and late followers. Companies are sorted into these groups solely based on the year of their accounting standard change from GGAAP to IFRS, and we assume that the timing of the accounting standards choice can be used as a proxy for differences in companies' reporting incentives. This line of argument has at least two major limitations. First, certain market segments of the German capital market have their own restrictions regarding the accounting standards for consolidated financial statements. Thus, companies wishing to be listed in one particular market segment may be obliged to report in line with a particular accounting standard, regardless of their legal obligations. We note, however, that companies are never obliged to enter any particular market segment. Nevertheless, choice of market segment and choice of accounting standards influence one another and it must be acknowledged that our analysis assumes that the latter dominates the former. Second, adoption of a new set of accounting standards requires a certain amount of time after the respective management decision. Thus, even after management has concluded that gross benefits from IFRS reporting outweigh the costs, it can be argued that the consolidated financial statement for the year of the decision would still be prepared in GGAAP. We therefore expect companies with characteristics similar to voluntary adopters in the early compliers group and companies with characteristics similar to early compliers in the late followers group. As such, it is worth noting that, particularly for companies that changed accounting standards in a year close to one of the two thresholds, distinction between the groups may not be clear-cut. However, the rationale of decreasing benefits from IFRS adoption over time continues to hold, and hence the resulting bias should be negligible.

Further, there may be alternative ways to sort companies into different groups with distinct reporting incentives. We check for robustness of our group selection in two ways. First, in our analysis above, we omit all companies that reported in line with USGAAP at least once between 1994 and 2005, which allows us to obtain clear-cut results for IFRS only. We in this regard recall that companies that reported in USGAAP before July 2002 were not obliged to prepare consolidated financial statements in IFRS for financial years starting before 2007, and we note that this may influence when they adopt IFRS. However, adoption of USGAAP at any time may indicate that similar reporting incentives also exist to adopt IFRS at that time. In order to address this issue, we rerun our analysis, treating both IFRS and USGAAP reporting as a decision to report according to internationally accepted accounting standards. We find virtually the same results (not tabulated), although the significance of coefficients and R-squared values are generally higher when including USGAAP reporters. Significance of coefficients increases particularly for voluntary adopters. This result is reasonable because until it became known in July 2002 that IFRS would be the mandatory set of standards for consolidated financial statements in the EU, European companies may not have distinguished between USGAAP and IFRS since both were internationally accepted. As a second check of results, it can be argued that including companies that chose IFRS prior to 1998 among the voluntary adopters group may introduce bias into the analysis. These 10 companies (Table 3) had a particularly strong interest in reporting in line with internationally accepted standards – an interest that was high enough to offset the additional costs of dual or parallel reporting. We find that excluding these companies has no effect on the results (not tabulated). Thus, we conclude that our results are robust to alternative approaches to group selection, as long as selection is based on the timing of accounting standards adoption. Nevertheless, we note that the question of whether timing of standards adoption can in fact be utilized as a proxy for reporting incentives remains ultimately unanswered.

In addition, R-squared is small in most of the regressions (not tabulated). This result is to be expected because exogenous variables are mostly dichotomous and thus cannot explain a great part of the

variation in the applied measures of earnings quality. However, we deliberately decide against including further control variables in order to avoid endogeneity bias in our analyses. Particularly in light of research on determinants of the choice of accounting standards by Gassen and Sellhorn (2006), Ashbaugh (2001), El-Gazzar, Finn, and Jacob (1999), Murphy (1999), and Dumontier and Raffournier (1998) together with our rationale for creating the binary variables VOL and EAR, prospective control variables should correlate strongly with VOL and EAR. Nevertheless, not including further controls raises the issue of omitted variable bias. This bias, however, should be negligible since we include observations before and after adoption of IFRS for each company and thereby implicitly control for pre-adoption characteristics.

9. Summary and conclusion

In this paper we investigate how reporting incentives and accounting standards affect earnings quality. To do so we use the setting of the German capital market between 1994 and 2005, which allows us to compare companies with different accounting standards, but in the exact same market setting. Using an approach that allows for investigation of reporting incentives based on timing of IFRS adoption, we distinguish among three groups of self-selectors, namely, voluntary adopters, early compliers, and late followers.

We find that IFRS on average, contrary to theoretical expectations, either has no significant effect on or even decreases earnings quality, compared to the level of earnings quality in the respective firms' GGAAP statements. Even though this result is contrary to common expectation, it is consistently found in previous empirical research on the German capital market as well. We moreover find that differences in earnings quality based on reporting incentives exist in both GGAAP and IFRS. More importantly however, we find in our data that earnings quality in IFRS statements appears less affected by reporting incentives than in GGAAP statements, and thus that IFRS might lead to a more homogenous level of earnings quality across firms. Finally, our results indicate that timing of IFRS adoption may in fact be used by researchers as a proxy for the reporting incentives of a company, as empirical results appear sensible in consideration of the historic evolution of the German accounting environment.

Given the importance of reporting incentives, further research is necessary. Future analyses on the effects of reporting incentives on earnings quality should focus on three main issues. First, it would be interesting to conduct comparative analyses of earnings quality between EU countries in which IFRS adoption was optional prior to 2005 and countries that made IFRS mandatory earlier than 2005. Such an analysis could indicate the generalizability of using the timing of (voluntary) IFRS adoption as a proxy for reporting incentives. Second, our research merely considers GGAAP relative to IFRS. It may therefore also be valuable to investigate respective effects when companies reported in a different (European) local GAAP prior to IFRS adoption. Finally, it is necessary to identify the determinants that influence the incentives of a company to report high quality earnings to its stakeholders. Such determinants would be key to ultimately advising regulators about how to create an environment in which companies provide the best possible information to the public. As we have shown, only by considering the effects of both accounting standards and reporting incentives on all economic agents can regulators thrive to design an effective and efficient set of (accounting) rules.

References

- Ashbaugh, H. (2001). Non-US firms' accounting standard choices. *Journal of Accounting and Public Policy*, 2(20), 129–153.
- Ball, R., Kothari, S. P., & Robin, A. (2000). The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics*, 1(29), 1–51.

- Ball, R., Robin, A., & Wu, J. S. (2003). Incentives versus standards: Properties of accounting income in four East Asian countries. *Journal of Accounting and Economics*, 1–3(36), 235–270.
- Burgstahler, D., Hail, L., & Leuz, C. (2006). The importance of reporting incentives: Earnings management in European private and public firms. *The Accounting Review*, 5(81), 983–1016.
- Bushman, R., & Piotroski, J. D. (2006). Financial reporting incentives for conservative accounting: The influence of legal and political institutions. *Journal of Accounting and Economics*, 1–2(42), 107–148.
- Daske, H. (2006). Economic benefits of adopting IFRS or US-GAAP – Have the expected cost of equity capital really decreased? *Journal of Business and Finance*, 3(33), 329–373.
- Dechow, P. M. (1994). Accounting earnings and cash flows as measures of firm performance. *Journal of Accounting and Economics*, 1(18), 3–42.
- Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. *The Accounting Review*, 2(70), 193–225.
- Dechow, P. M., & Dichev, I. (2002). The quality of accruals and earnings: The role of accrual estimation in errors. *The Accounting Review, Supplement*, 77, 35–59.
- Dumontier, P., & Raffournier, B. (1998). Why firms comply voluntarily with IAS: An empirical analysis with Swiss data. *Journal of International Financial Management and Accounting*, 3(9), 216–245.
- El-Gazzar, S. M., Finn, P. M., & Jacob, R. (1999). An empirical investigation of multinational firms' compliance with International Accounting Standards. *The International Journal of Accounting*, 2(34), 239–248.
- Gassen, J., & Sellhorn, T. (2006). Applying IFRS in Germany – Determinants and consequences. *Betriebswirtschaftliche Forschung und Praxis*, 4(58), 365–386.
- Harris, T., Lang, M., & Möller, H. P. (1994). The value relevance of German accounting measures: An empirical analysis. *Journal of Accounting Research*, 2(32), 187–209.
- Jones, J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, 2(29), 193–228.
- Joos, P., & Lang, M. (1994). The effects of accounting diversity: Evidence from the European Union. *Journal of Accounting Research, Supplement*, 32, 141–168.
- Lang, M., & Lundholm, R. (1993). Cross-sectional determinants of analyst ratings of corporate disclosures. *Journal of Accounting Research*, 2(31), 246–271.
- Lang, M., Raedy, J. S., & Wilson, W. (2006). Earnings management and cross listings: Are reconcile earnings comparable to US earnings? *Journal of Accounting and Economics*, 1–2(42), 255–283.
- Leuz, C., & Verrecchia, R. E. (2000). The economic consequences of increased disclosure. *Journal of Accounting Research, Supplement: Studies on Accounting Information and the Economics of the Firm*, 38, 91–124.
- Leuz, C. (2003). IAS versus U.S. GAAP: Information asymmetry-based evidence from Germany's new market. *Journal of Accounting Research*, 3(41), 445–472.
- Leuz, C., Dhananjay, N., & Wysocki, P. D. (2003). Earnings management and investor protection: An international comparison. *Journal of Financial Economics*, 3(69), 505–527.
- Murphy, A. B. (1999). Firm characteristics of Swiss companies that utilize International Accounting Standards. *The International Journal of Accounting*, 1(34), 121–131.
- van Tendeloo, B., & Vanstraelen, A. (2005). Earnings management under German GAAP versus IFRS. *The European Accounting Review*, 1(14), 155–180.