The Effect of Accounting Standards on Management of Earnings: Evidens from Germany

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Abstract— IFRS (International Financial Reporting Standards) is an accounting standard for annual reports of companies. Since January 1, 2005, all listed companies in the EU are required to report under the IFRS, that it means all companies from EU- countries from 1-1 -2005 had to switch from reporting under GAAP (Generally Accepted Accounting Principles). German listed companies were allowed to present consolidated accounts prepared under German GAAP, IAS. This paper investigates whether the amount of management of earnings differs between the standards. While the manipulation under German GAAP and IFRS is relatively difference. I find that adoption of IFRS for reporting by listed companies in 2005 has surely reduced the use of management of earnings compared to German companies earlier reporting under generally accepted accounting principles GAAP. This is consistent with an interpretation that different amount of accounting choices enclosed firmly in different accounting standards affected the magnitude of management of earnings. The results of this paper hold for various proxies of management of earnings and after controlling for factors effecting the adoption of the standards. This paper documented that discretionary accruals under local GAAP are more valued in German listed companies. Moreover, the research finds that net income, accruals and discretionary accruals are more relevant than cash flow, non-discretionary accruals and non-discretionary income. The evidence shows that accruals improve the association of earnings with contemporaneous stock returns.

Keywords: Accruals, Management of Earnings, International Accounting Standards.

1 INTRODUCTION

Uniform accounting standards attempt to reduce managers’ ability to record similar economic transactions in dissimilar ways, either over time or across firms. The legal environment in which accounting differences between managers, auditors, investors are arbitrated can also have a significant effect on the quality of reported numbers (Palepu et al, 2008).

When studying the financial statements a lot of value is given to the item 'earnings' since the value of the company depends on it. The value of the company is the present value of future earnings. An increase or decrease in ‘earnings’ can lead to respectively an increase or decrease in the value of the company.

Given the importance of earnings, it is obvious that managers are trying to report earnings as positively as possible. Therefore, managers try to manage earnings (Lev, 1989).

Research shows that also in Germany management of earnings happens much more than is often suggested. According to Schipper (Schipper, 1989) and later Healy and Wahlen, (1999) earnings management is “a deliberate intervention by management for personal interest.”

Most of the prior studies on management of earnings have focused on why firms manage earnings. Several reasons have been identified that include; income smoothing (Yoon and Miller, 2002b), ownership control (DeAngelo, 1988), equity offerings (Rangan, 1998; Teoh et al., 1998; Yoon and Miller, 2002a) and political costs (Jones, 1991).

Healy and Wahlen (1999) define: “Earnings management occurs when managers use judgments in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholder about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.”

A distinction must be made between efficient and opportunistic earnings management. Utama and Siregar (2008) define both types. Efficient earnings management is to improve the information value of Earnings by communicating company-specific information to the external world. Management of earnings can thus lead to an appreciation of the accounting information (Healy and Wahlen, 1999). With opportunistic earnings management, management will manage the profits to maximize their utility. This can be a potential misallocation of resources and mislead stakeholders result (McNichols and Stubben, 2008).

Empirical Investigation in Germany

An empirical analysis of the development of earnings quality in Germany is useful for the following reason: an empirical
examination of earnings quality using a variety of measures for German listed companies has never been conducted with regard to the development over time. So far, analyses of earnings quality of the annual statements of German listed companies have solely been conducted as comparative studies, focusing on the comparison of the different accounting systems provided by German-GAAP, IFRS and US-GAAP. Prior research has compared properties of accounting amounts using samples of German companies (e.g., Hung and Subramanyam 2007; Bartov and Kim 2005; Barth et al. 2008, Barth et al. 2006). This study differs from prior research on adopting of IAS and IFRS accounting measures in that research examines the change in adopting of accounting caused by the revisions made to IASs and the development of new IFRSs.

This study compares the characteristics of accounting amounts using a sample of German companies reporting under IAS during 2000-2003, and under IFRS during 2003-2004 and 2005-2008. Specifically, it investigates whether management of earnings is applied before this period and then during the three times that IASB revised the existing IAS rules and issued new IFRS regulations to formulate a set of high quality international accounting standards for global financial reporting purpose.

One of the first studies of earnings quality in Germany is conducted by Gassen/Sellhorn (2006). They compare the relative quality of IAS/IFRS and German GAAP earnings by a sample of 354 German listed companies each, in the period from 1998 to 2004. They show that the persistence of earnings of those companies accounting by IAS/IFRS is significantly higher than of those companies accounting by German GAAP.

Similarly, the quality of accruals appears to be higher in IAS/IFRS accounting than in German GAAP. There is, however, no statistically significant difference detectable in this measure. Gassen/Sellhorn (2006) also find that the predictability of earnings for future earnings is significantly lower in IAS/IFRS reports than in German GAAP reports.

When research is done into management of earnings, I am however dealing with a process that is hard to predict. Hence, it is necessary for managers to make accruals. Accruals are needed in order to do measurements, and to measure management of earnings, so-called ‘accruals’ – pre-bookings are needed (Rath & Sun, 2008). These accruals form the difference between the reported profit on one side, and the cash flow on the other side. In other words, there exists a discrepancy between what is being reported and that, which is the true total amount of the net profit plus write-offs.

In general, accountants only look at the simple controls of the annual report, without questioning possible management of earnings (Richardson et al, 2003). The problem however lies more with the managers that use in their reporting the so-called accruals; the difference between cash flow and reported earnings, and thus give a representation that does not reflect the true earnings numbers.

2 Prior literatures on Management of Earnings

DeFond and Subramanyam (1998), Bartov, Gul and Tsui (2001), Frankel, Johnson and Nelson (2002), Larcker and Richardson (2004) have examined the relation between auditor independence and earnings management. They discovered that lack of audit independence is associated with earnings management. Balsam (1998) finds that cash compensation to CEO’s is associated with discretionary accruals. Baker, Baker, et al. (2003) found that managers opportunistically manage earnings relative to the award date when compensated with stock options. Gul, Chen and Tsui (2003) find higher managerial ownership reduces the positive association between discretionary accruals and audit fees, thus indicating that it is used to communicate value relevant information.

Focusing specifically on the impact of board characteristics on the incentives to manage earnings, one finds that corporate governance codes around the world emphasize the fiduciary role of the board of directors in curbing opportunistic earnings manipulation and in ensuring that earnings figures convey true information about firm operations (Peasnell, et al. 2000). In this regard, the existing literature largely supports the contention that board structure matters in management of earnings independence of the board of directors as well as the independence of audit committees, which are created with a subset of directors on the board with the primary responsibility of monitoring. The financial reporting process of a firm are found to constrain earnings management.

As Healy and Wahlen (1999, p. 370) explain, “despite the popular wisdom that earnings management exists, it has been remarkably difficult for researchers to convincingly document it. This problem arises primarily because in order to identify whether earnings have been managed, researchers first have to estimate earnings before the effects of earnings management”.

In other words, researchers need to distinguish a portion of the earnings from natural causes from the portion attributable to management of earnings activities. Research designs in prior literature on management of earnings more generally can be summarized into three approaches: (a) time series (b) cross-sectional (c) cross-country and mix of these two approaches (b and c).

Teoh et al, (1998), use in the time-series approach, the pre-Initial Public Offering (IPO) financial statements included in the prospectus as a benchmark to compare with IPO year numbers.1 (Ball and Shivakumar, 2005) use the cross-sectional approach to compare the financial statements of private and public companies in the United Kingdom (UK) The cross-country approach is a variation of cross-sectional approach that exploits international differences (Ball and Shavikumer, 2008).

Previous researchers categorize management of earnings into two groups: real earnings management and accruals management. They suggest that managers are much more willing to engage in real earnings management (i.e., affecting cash

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1 Teoh et al, (1998) also provide cross-section evidence comparing IPO firms with non-issuers
flow) than accruals management through changes by management in estimates and accounting policies (Graham et al. 2005). They suggest 80% would decrease discretionary spending, 55% would delay a project, compared with only 28% who would draw down reserves and 8% who would change accounting assumptions. Consequently, survey evidence in Graham et al. (2005) appears inconsistent with the higher cost of real earnings management. Estimates of managed (discretionary) and non-discretionary (unmanaged) accruals are compared for the models to check for better fit and then their capacity to detect management of earnings is assessed with samples where management of earnings is expected (Garza-Gómez, 2006).

The fact that the evidence on the willingness of managers to engage in management of earnings is more difficult to detect further undermines the conclusions in Ball and Shavikumer (2008). For their sample of IPO firms, only accruals management can be identified, and any real earnings management is excluded from the analysis. Bartov et al. (2005) also examine and compare the value relevance of earnings based US GAAP, IAS and German GAAP. They, on the other hand, find that IAS earnings are more value relevant than those based on German GAAP. The difference in the results of these two studies may be found in that Bartov et al. (2005) exclude loss-firm observations in their estimations while these are included in the Hung Subramaniam (2007) study.

Jermakowicz et al. (2007) examine German companies’ adoption of IFRS and US GAAP over the period 1995 to 2004. Specifically, they investigate the usefulness, proxied as value relevance, before and after the adoption of these GAAPs and the perceived benefits and costs related to the process of implementing IFRS among the DAX-30 companies. They find a significant increase in the value relevance of earnings after the adoption of these GAAPs. They also find that the key challenges related to the adoption of IFRS are the complexity of IFRS, the costs involved, and the lack of implementation guidance.

The challenges related to the adoption of IFRS documented by Jermakowicz et al. (2007). Christensen et al. (2007) investigate the change in management of earnings and timely loss recognition among German firms that voluntarily adopt IFRS and those who wait until the adoption of IFRS is mandatory. They find that companies that voluntarily adopt are less prone to management of earnings and recognize losses more timely compared to those that resist and wait until the adoption of IFRS becomes mandatory. They interpret their findings as a sign of how certain companies (i.e. insider-oriented companies) have less incentive to adopt IFRS since they will not benefit and the challenges involved are considerable. Finally, Barth et al. (2008) also study IAS adopters from a number of countries, where of Germany is one of the countries with greatest representation in the sample. They find that firms that adopt IAS are less prone to engage in earnings smoothing and recognize losses more timely.

I predict that earnings of German companies that report under IFRS or German GAAP do not have the same properties. The magnitude of management of earnings will not be the same under all sets of standards. Considering solely the results of the qualitative studies that compared the number of accounting choices under certain accounting frameworks, one could assume that IFRS earnings should outperform both German GAAP earnings in terms of earnings quality. IFRS earnings should be less managed than German GAAP earnings. However, the choices provided under two accounting frameworks do not overlap completely: German GAAP, which provides the highest latitude, does not include for instance all the choices provided by IFRS. It is also difficult to assess the specific costs of using an earnings management instrument. Accounting choices unique to an accounting framework may, for example, be used to a high extent due to its comparatively low costs. This study contributes to current research in several ways:

It introduces discretionary accruals model, which captures the relation between cash flows, Net income and accruals better than previous models. It provides evidence that the Jones’ (1991) model considers accruals as discretionary. It provides international evidence on the relevance of accruals accounting in an important market such as German stock market, allowing comparison to previous reports in Europe.

The importance of the study stems from being a serious attempt to find out the nature of the relationship between management of earnings and stock return in German listed companies. What’s more, this research provides evidence that the transition to IFRS had an impact on the use of management of earnings.

3. DATA AND SOURCES

The full sample in this paper concerns a period of 16 years (1994-2010). The data spans the years 1992 to 2010 to cover the sample period of 1994-2008. This involves 1448 German annual reports. Of all these companies, the necessary data is available through the data stream of Thomson one banker.

Companies listed in the above mentioned are very appealing for my research purposes as they are using different accounting standards but still operating in the German capital market. The choice of this period is particular to the stages of transition in corporate financial reporting. Many German listed companies started to report consolidated earnings under established international rather than domestic rules to improve their appeal to international investors.

From this initial sample, I exclude all financial firms because (a) their financial reporting environment differs from those of banks and other financial institutions are, however, often excluded from management of earnings research since their characteristics differ fundamentally from other firms (Peasnell, Pope and Young, 2000).

In accordance with other empirical research in this area, all companies with the SIC codes 6000 up to 6799 (i.e. banks, insurance companies and financial firms) are eliminated from the sample. This is due to the fact that the balance sheet structures of these firms are fundamentally different to those of non-financial firms and would not allow for comparison. Furthermore, all those firm years are eliminated, for which Worldscope does not provide data about net income and/or total-assets.
industrial firms and (b) they have fundamentally different accrual processes that are not captured very well by our expectations models of normal accrual activity.

The sample will be started covering the period before and after 2005 because a new regulation has come into force in 2005. It was decided that from 2005 onwards extra obligations have to be included in annual reports, which makes it impossible to manage earnings in a similar manner as before. The new regulation creates an increased transparency in annual reports. In view of this research, there is hence no use in using a qualitative method. One way of looking at quantitative methods is as a collection of techniques for organising, presenting, summarising, communicating and drawing conclusions from data, so that becomes informative (Morris, 2008).

The original sample consists of 1850 firm years during 1994-2010. All the financial institutions and observations where one or more of the variables such as stock return, accruals and net income are missing, are deleted, which results in a loss of 637 listed companies. Cases with extreme outliers in cash flow operating (CFO), net income (NI), total accruals (ACCR) and stock returns are deleted (values above +1 and below −1). This results in a further loss of 219 listed companies reducing the final sample to 1443 firm's years. Data is collected from the DataStream. Accruals are computed as ACCR = (∆CA - ∆CL - ∆LIQ + ∆STD - DEPR) / lagged total assets.

Research findings suggest either that the choice of accrual model should depend on the predicted form of management of earnings activity (e.g., revenue-based or expense-based), or that the use of several models in combination may offer the best opportunity of detecting accrual management, the specific form of which is unpredictable.

4. EVIDENCE OF MANAGEMENT OF EARNINGS

4.1 MEASURING OF MANAGEMENT OF EARNINGS

Discretionary accruals are used as the proxy for earnings management (Jones, 1991). The discretionary portion of total accruals is used in this study to capture management of earnings rather than the discretionary portion of a single accrual because total accruals should capture a larger portion of managers’ manipulation (Jones, 1991).

I relay on the estimates from Jones Model, Modified Jones Model, Modified Jones Cash Flow Model and Modified Jones net income model to obtain discretionary accruals for a given firm. I show the evolution of different models and why the Modified Jones net income model is superior in controlling firm to separate accruals to discretionary and non-discretionary earnings components. Additionally I use all these combinations of accounting items to detect management of earnings. Therefore, I use the methodology based on aggregate accruals. This increases the change to find management of earnings and secondly this increases the range in which I can make conclusions. All variables are defined in Figur 3.

4.1.1 THE JONES MODEL

Jones (1991) relaxes the previous assumptions that the difference between current and prior year accruals is due solely to changes in discretionary accruals because non-discretionary accruals are assumed to be constant from period to period. She uses, therefore, the following expectations model for total accruals to control changes in the economic circumstances of the firm:

\[ \text{ACCR}_t = \alpha_1 \left( \frac{1}{A_{t-1}} \right) + \alpha_2 (\Delta \text{REV}_t) + \alpha_3 (\text{PPE}_t) + \nu_t \]  

Where:
\[ \Delta \text{REV}_t = \text{revenue in year } t \text{ less revenue in year } t-1 \text{ scaled by total asset at } t-1 \]
\[ \text{PPE}_t = \text{gross property plant and equipment in year scaled by total asset at } t-1 \]
\[ A_{t-1} = \text{total asset at } t-1 \text{ and} \]
\[ \alpha_1, \alpha_2, \alpha_3 = \text{firm-specific parameters} \]
\[ \nu_t = \text{the error term} \]

She estimates non-discretionary accruals from the above model as:

\[ \text{NDA}_t = \alpha_1 \left( \frac{1}{A_{t-1}} \right) + \alpha_2 (\Delta \text{REV}_t) + \alpha_3 (\text{PPE}_t) \]

Dechow, et al record that an implicit assumption in the Jones model is that revenue is non-discretionary. If earnings are managed through discretionary revenue, then the Jones model will remove part of the managed earnings from discretionary accrual proxy.

An OLS regression of total accruals is regressed on the change in sales and gross property, plant and equipment. Coefficients \( \alpha_1, \alpha_2, \alpha_3 \) are industry-year specific parameters and discretionary accruals are estimated as the residual from the Jones model. All variables are deflated by beginning year total assets to control for heteroscedasticity. Since all the variables are deflated by lagged total assets, the magnitude of a firm’s discretionary accruals is indicated as a percentage of the total assets of a firm. There are two methods in computing total accruals, the balance sheet approach versus the cash flow statement approach. To analyse data prior to 1988, the balance sheet approach is necessary as cash flow information is not available (Sloan, 1996). From 1988, firms were required to report cash flow from operations. Hence, total accruals are avoided the substantial errors that the balance sheet approach has in accrual estimation. Therefore, this study computes total accruals from cash flow statements as:

\[ \text{TAC}_{it} = (\text{Eit} - \text{CFit}) / \text{Ait} \]

where \( \text{TAC}_{it} \) is total accruals for firm \( i \) in year \( t \); \( \text{Eit} \) is net income before extraordinary items for firm \( i \) in year \( t \); \( \text{CFit} \) is cash flows from operating activities for firm \( i \) in year \( t \) and all variables are deflated by lagged total assets \( \text{Ait-1} \). able to be calculated directly from cash flow statements, as the difference between earnings and operating cash flows. Hribar and Collins (2002) suggested that the direct cash flow approach avoids the substantial errors that the balance sheet approach has in accrual estimation.
4.1.2 The modified Jones model

The modification is designed to eliminate the assumption tendency of the Jones model to measure discretionary accruals with error when discretion is used over revenues. The modified Jones model estimates non-discretionary accruals (NDAC) as:

\[ NDAC_t = \alpha_1 (1/A_{i,t}) + \alpha_2 (\Delta REV_t - \Delta REC_t) + \alpha_3 (PPE_{t-1}) \quad \text{eq} \quad (3) \]

Where:

- \( \Delta REC_t \) = net receivables in year t less receivables in year t-1
- \( \Delta AR / A_t \) = operating cash flows, this study then estimates discretionary accruals by using the following variation of the Modified Jones model with an additional variable, the change in operating cash flows, \( \Delta CF_{it} \), which is consistent with Kasznik (1999). \( \Delta CF_{it} \) is the change in operating cash flows for firm \( i \) between year t-1 and t; other variables are defined as the Modified Jones model.

\[ Cash Flow Modified Jones model (Kasznik, 1999) \]

\[ TA_{it} / A_{it-1} = b_1 (1 / A_{it-1}) + b_2 (\Delta REV_{it} / A_{it-1}) + b_3 (PPE_{it} / A_{it}) + b_4 (\Delta CF_{it}) + \varepsilon_{it} \quad \text{eq} \quad (4) \]

4.1.3 Cash flow modified Jones model

McNichols and Wilson (1988) found that discretionary accruals are negatively associated with operating cash flows. In order to control the effect of operating cash flows, this study then estimates discretionary accruals by using the following variation of the Modified Jones model with an additional variable, the change in operating cash flows, \( \Delta CF_{it} \), which is consistent with Kasznik (1999). \( \Delta CF_{it} \) is the change in operating cash flows for firm \( i \) between year t-1 and t; other variables are defined as the Modified Jones model.

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4.1.4 Net Operating Income Modified Jones Model

Cash Flow Modified Jones model is attempt to control cash flow performance, however, researcher also found that the measurement error in estimation of discretionary accruals is correlated with firm extreme earnings performances—firms with low (high) earnings tend to have negative (positive) discretionary accruals (Dechow et al., 1995). In order to control the effect of net operating income, this study then estimates discretionary accruals by using the following variation of the Modified Jones model with an additional variable, the change of net operating income, \( NI_{LTA_{it}} \). In the spirit of Kasznik (1999), I also apply this technique to control the effect of earnings performance. \( NI_{LTA_{it}} \) is the change in net operating income for firm \( i \) between year t-1 and t; other variables are defined as the Modified Jones model. \( NI_{LTA_{it}} \) is often viewed as a good measure of company performance. Some believe this figure is less susceptible than other figures to manipulation by management.

The following formula will be using to calculate the effect of net operating income on discretionary accruals

\[ Net Operating Income Modified Jones Model: \]

\[ TA_{it} / A_{it-1} = b_1 (1 / A_{it-1}) + b_2 (\Delta REV_{it} / A_{it-1}) - \Delta AR / A_{it-1} + b_3 (PPE_{it} / A_{it}) + b_4 (NI_{LTA_{it}}) + \varepsilon_{it} \quad \text{eq} \quad (5) \]

Where: \( NI_{LTA_{it}} = Net Operating Income \)

4.2 Analyzing magnitude of management of earnings

The role of accruals proposed in Dechow (1994), is working capital accruals, while the dependent variable in my regressions is total accruals. However, the Dechow and Dichev (2002) model was developed to explain working capital accruals, and their empirical results are based on working capital accruals. As McNichols (2002) points out, their model may offer a noisy specification for total accruals.

This section will first look at the mean, median, minimum, maximum, and standard deviation of the total accruals and its components and then to the earnings and its components. Table 1 shows Skewness as indicator in distribution analysis as a sign of asymmetry and deviation from a normal distribution. Normal distributions produce a Skewness statistic of about zero. So a Skewness statistic of 0.322 and 0.523 would be an acceptable Skewness value for a normally distributed set of test scores because it is very close to zero and is probably just a chance fluctuation from zero. As the Skewness statistic departs further from zero, a positive value indicates the possibility of a positively skewed distribution (that is, with scores bunched up on the low end of the score scale) or a negative value indicates the possibility of a negatively skewed distribution (that is, with scores bunched up on the high end of the scale). Values of 2 standard errors of Skewness (ses) or more (regardless of sign) are probably skewed to a significant degree.

The ses can be estimated roughly using the following formula: and calculate a Skewness statistic. An approximate estimate of the ses for German companies test would be for:

\[ \sqrt{\frac{\text{ses}}{1433}} = 0.0647 \]

From the above, twice the Std. Error of Skewness is 2 X 0.0647 = 0.1294. It knows look at the range from -0.1294 to + 0.1294 and check whether the value for Skewness falls within this range. If it does it can consider the distribution to be approximately normal. If it doesn’t, it concludes that the distribution is significantly non-normal and in this case is significantly positively skewed. If the sign of the Skewness statistic is negative, it means that the distribution is negatively skewed. Alternatively, if the Skewness statistic had been positive, it means that the distribution was positively skewed. For our data would be that the skew statistic might fall within the range between, -0.1294 to + 0.1294 for German listed companies in which case, it means that the Skewness was within the expected range of chance fluctuations in that statistic, which would further indicate a distribution with no significant Skewness problem.

\text{Kurtosis: Another descriptive statistic that can be derived to describe a distribution is called kurtosis. It refers to the relative concentration of scores in the center, the upper and lower ends (tails), and the shoulders of a distribution (see Brown, 1996, pp. 138-142).}
A distribution is platykurtic if it is flatter than the corresponding normal curve and leptokurtic if it is more peaked than the normal curve.

The same numerical process can be used to check if the kurtosis is significantly non normal. A normal distribution will have Kurtosis value of zero. So again it constructs a range of "normality" by multiplying the Std. Error of Kurtosis by 2 and going from minus that value to plus that value. Here 2 X 0.1294 = 0.2588 for German listed companies and it can be considering the range from -0.2588 to +0.2588 and check if the value for Kurtosis falls within this range. The kurtosis, which would further indicate a distribution with no significant kurtosis problem.

**Further Explanation**

Panel A, B and C of table 1 shows total accruals, its components and independent variables in the regression model of accruals respectively. Panel A of this table shows that total accruals are negative on average (-.0.0428 for listed companies). It means that operating cash flows are greater than net income and an amount is subtracted from the cash flows to get net income.

Panel B of these tables show components of accruals (working capital). Looking at those tables it observes that current assets (CA_LTA), current liabilities (CL_LTA) and deprecations (DEP_LTA) are on average greater than the rest of the components (0.0611, 0.0372 & 0.0656 for listed companies). It is observable that some variables have values larger than one. This is possible as a result of the fact that the scaling is to log total assets not to total assets of the current years.

Panel C of the tables display the independent variables used to estimate non-discretionary accruals. The plant property and equipment (PPE) is taken as net plant, property and equipment. However, the gross amount of PPE explains better the depreciation components of accruals, because it is a better indicator of the level of expected depreciation. Unfortunately the data on gross PPE was not available on the DataStream and it was beyond the scope of this research to manually gather this information from the firms' annual reports.

A Pearson correlation in Table 2 was run for listed companies to determine the relationship between predicted variables. The data showed no violation of normality, linearity or homoscedasticity. There is a significant, positive correlation between accruals and its components, R² = 0.999 and Adjusted R² = 0.967, Std.Error = 0.0033, Durbin-Watson= 1.722, which was statistically significant at the 0.01 and 0.05 levels (2-tailed).

Table 3 reports descriptive statistics on earnings and its components in German listed companies. Net income is positive in over 90% of the samples, and cash flows from operations are positive in over 86% of the samples. Mean and median of discretionary accruals are close to zero. It is observed that discretionary accruals are more variable than the non-discretionary accruals and both are less variable than the total accruals.

Bases on the table it can be noted that cash flow from operations is negative by 11% of the sample in the listed companies. However a lesser percentage of the sample firms display negative income of the sample in German listed companies. It can be observed that 4% of German listed companies are showing negative income, possibly upgrading earnings. These evidences are based on the fact that the variations in non-discretionary accruals are smaller than the variation in the discretionary accruals, which provides a reliable base to reach this conclusion. Therefore, the discretionary accrual is a significant variable in explaining the difference.

The descriptive statistics therefore, indicate that it is possible that earnings have been managed more or less in Germany.

It is observed that the degree of management of earnings is higher in the German listed companies. It can be explained that Germany is one of the code law countries where the accounting standards give greater discretion to managers in deciding when economic gains and losses are incorporated in accounting income (Ball et al, 2000). McNichols and Wilson (1988) found that discretionary accruals are negatively associated with operating cash flows. In order to control the effect of operating cash flows, this study then estimates discretionary accruals by using the following variation of the Modified Jones model with an additional variable, the change of operating cash flows, ΔCFO, which is consistent with Kasznik (1999). ΔCFO is the change in operating cash flows for firm i between year t-1 and t; other variables are defined as the Modified Jones model.

**Cash Flow Modified Jones model (Kasznik, 1999)**

\[ TA_{it} = A_{it-1} = b_1 (1/ A_{it-1}) + b_2 (\Delta REV_{it}/ A_{it} - \Delta AR / A_{it}) + b_3 (PPE_{it}/ A_{it}) + b_4 (\Delta COF) + \epsilon_{it} \]

After obtaining discretionary accruals from the Jones model, the Modified Jones model and the Cash flow Modified Jones model respectively, this study further examines whether these discretionary accrual estimates are correlated with earnings performance. This study then estimates discretionary accruals by using an additional variable, the change in net operating income NL-Lta, which is consistent with Kasznik (1999). NL-Lta is the change in operating net income for firm i between year t-1 and t, other variables are defined as the Modified Jones model. More details will be explained in table 4.

**Net operating income Modified Jones Model**

\[ TA_{it} / A_{it-1} = b_1 (1/ A_{it-1}) + b_2 (\Delta REV_{it} / A_{it} - \Delta AR / A_{it}) + b_3 (PPE_{it}/ A_{it} - 1.0) + b_4 (NL_LTA) + \epsilon_{it} \]

Where: NL_LTA = Net operating income

Table 4 reports summary statistics for German listed companies for cross-sectional ordinary least squares (OLS) regressions based on the Jones model, the Modified Jones Model, the Cash Flow Modified Jones Model, and the Net operating income Modified Jones Model. Discretionary accruals are estimated as residuals from these four models. Each of the four models is estimated cross sectionally from 1994 to 2003. So, the mean (median) coefficient estimates are the average values for 1443 firm-year pairs, for German respectively. Mean (median) coefficients are in the line with t-statistics (Wilcoxon z-scores) and p-values. One sample test and Wilcoxon signed rank test are applied to test whether mean and median coefficients are significantly different from zero. In concept, the predicted sign of the change in sales (ΔREV) usually is ambiguous. A given change in sales can associate with either
income-increasing accruals or income-decreasing accruals, depending on the relative change of current assets and current liabilities associated with operations. Property, plant, and equipment (PPE) should have a negative relationship with total accruals since the level of property, plant and equipment is linked to the income-decreasing accruals such as depreciation, depletion and amortization (Jones, 1991). For the Jones Model, both mean and median coefficient estimates on ΔREV are positive, and 64.68% of the coefficient estimates are positive, respectively for listed companies. The Wilcoxon signed rank test shows that the median coefficient on ΔREV is significant different from zero at 5% level. The mean and median coefficients on PPE are significantly negative at less than 1% level under both the t-test and the Wilcoxon signed rank test, further, 74.49% of the coefficient estimates are negative (which is equivalent to 25.06% positive). For the Modified Jones Model, the sign on (ΔREV - ΔAR) is unclear. Both mean and median coefficients are negative and insignificantly different from zero. Dechow et al. (1995) argued that it is easier for managers to exercise discretion over credit sales than cash sales. So, they modified the original Jones model by removing all the credit sales from revenue.

This model implicitly assumes that all changes in credit sales result from management of earnings, however, the uncertain and insignificant coefficient sign indicates that in a German context, management of earnings activities may be carried out through accounts other than credit sales. For the Cash Flow Modified Jones Model, Kasznik (1999) included the change in operating cash flows in the Modified Jones Model to control the effect of operating cash flows. This modification seems to improve the accrual estimation. Both mean and median coefficient estimates on (ΔREV - ΔAR) are positive; 64.76% of the coefficient estimates being positive. Moreover, the t-test and the Wilcoxon signed rank test show that both mean and median coefficients are significantly different from zero at less than 1% level. The mean and median coefficients on PPE are significantly negative at less than 1% level with 73.35% of the coefficient estimates being negative (which is equivalent to 26.65% positive). The mean and median coefficients on ΔCFO are significantly negative at less than 1% level, with 79.98% of the coefficients being negative, which it means only 20.10% of the coefficient estimates are positive for listed companies. This is consistent with the estimation that a change in cash flow from operations is negatively correlated with total accruals since the level of property, plant and equipment is linked to the income-decreasing accruals such as depreciation, depletion and amortization (Jones, 1991).

This result is consistent with the result which earlier has been achieved from the descriptive statistics, tables 3 which implicitly showed that earnings have been managed in Germany. Discretionary accruals can be used to either increase or decrease earnings. Positive discretionary accruals suggest income-increasing earnings management while negative discretionary accruals suggest income-decreasing earnings management.

Table 5 reports the summery of regression analysis of independent variables and dependent variable. Table 5 indicates multi-regressions which are applied to test whether independent variables such as NI_LTA, PPE, DREV, OCF_LTA, ACC, have relationship with or effect on dependent variable Stock return Sq-str. The analysis implies that the relationship between the two variables strong significant at less than 1%. It appears from the determination coefficient R²-square for the Cash Flow Modified Jones Model is 0.1531 (0.0707) which is equivalent to 25.06% positive. For the Cash flow Modified Jones model, Kasznik (1999) included the change in operating cash flows from operations is negatively correlated with total accruals since the level of property, plant and equipment is linked to the income-decreasing earnings management while negative discretionary accruals suggest income-decreasing earnings management. Table 5 indicates multi-regressions which are applied to test whether independent variables such as NI_LTA, PPE, DREV, OCF_LTA, ACC, have relationship with or effect on dependent variable Stock return Sq-str. The analysis implies that the relationship between the two variables strong significant at less than 1%. It appears from the determination coefficient R²-square for the Cash Flow Modified Jones Model is 0.1531 (0.0707) which is equivalent to 25.06% positive. For the Jones Model, the sign on (ΔREV - ΔAR) is unclear. Both mean and median coefficients are negative and insignificantly different from zero. Dechow et al. (1995) argued that it is easier for managers to exercise discretion over credit sales than cash sales. So, they modified the original Jones model by removing all the credit sales from revenue.

### 4.3 Demonstration the Effect of Accounting Standards on Management of Earnings

Demonstration effects are effects on the behaviour of determined variables caused by observation of the actions of independent variables and their consequences. Table 6 provides estimated magnitudes statistics of discretionary accruals that are estimated from Jones Model, Modified Jones Model, Cash Flow Modified Jones Model and Net operating income Modified Jones Model. Both signed and absolute values of discretionary accruals are reported. All variables are defined in Figure1.

Table 6 presents the overall level of management of earnings before adoption of IFRS that estimated from Jones Model, Modified Jones Model, Cash Flow Modified Jones Model and Net income Modified Jones Model. For the Jones Model, the overall magnitude of management of earnings is measured by the absolute value of discretionary accruals as a percentage of beginning total assets, Abs DA_J. In general, the average level of management of earnings activity is 0.1508, indicating the average level of management of earnings that occurred among German companies is approximately around 16 % of total assets which is relatively significant. The Modified Jones Model displays very similar result as that of the Jones Model. The mean (median) total absolute value of discretionary accruals, Abs DA_JM, shows the average level of management of earnings activity respectively to be 0.1615 (0.0830) which is around 16 % of total assets. For the Cash flow Modified Jones model, the mean (median) total absolute value of discretionary accruals, Abs_DACF, is 0.1623 (0.0797). The mean (median) total absolute value of discretionary accruals of Net income Modified Jones model, Abs_DANIMJ, is 0.1531 (0.0707) for listed companies. This average level 15% of total asset is
lower than the 16% of total assets from the Jones model, the Modified Jones model and Cash flow Modified Jones Model. These indicate that Net operating income Modified Jones Model results in a lower absolute measure of discretionary accruals. It shows that the level of management of earnings has further decreased with the performance adjusted model. This average level 15% of total assets, for listed companies, is lower than the results from all previous three models. The decline in level of management of earnings suggested the measurement error in the discretionary accruals correlated with earnings performance is largely removed.

Previous research has documented management of earnings evidences across companies. In this section, management of earnings behaviour is examined across German companies. Under the null hypothesis that German listed companies do not engage in management of earnings, one should expect to see the discretionary component of accruals to be zero. This proposition is tested by examining the mean, median and proportion of discretionary accruals through total absolute value of discretionary accruals. Therefore, it can be concluded that earnings have been managed in Germany. Thus, the null hypothesis is rejected and the alternative hypothesis has been accepted, figures 1 and 2.

Table 7 demonstrates the estimated levels of management of earnings for German listed companies after adoption of IFRS. For Jones model, the overall level of management of earnings is measured by the absolute value of discretionary accruals as a percentage of beginning total assets. The modified Jones model demonstrates very similar results as that of Jones model. The mean (median) total absolute value of discretionary accruals of Modified Jones model, $\text{Abs}_{-}\text{DAMJ}$, demonstrates the average level of management of earnings activity for listed companies respectively to be 0.0678 (0.0056) which are around 7% of total assets. For the Cash Flow Modified Jones model, the mean (median) total absolute value of discretionary accruals, $\text{Abs}_{-}\text{DACFMJ}$, is 0.0660 (0.0058). The mean (median) total absolute value of discretionary accruals of Net operating income Modified Jones model, $\text{Abs}_{-}\text{DANIMJ}$, is 0.0543 (0.0048). This average level, 6% of total assets, is lower than the 7% of total assets from the Jones model, Modified Jones model and Cash flow Modified Jones model. This demonstrates that the Net operating income Modified Jones model results in a low absolute measure of discretionary accruals. It demonstrates the average level of management of earnings activities have been supplementary decreased with the adjusted model of Net operating income Modified Jones model. This average level, 6%, of total assets, is lower than the results which provided by all previous three models. The drop in level of management of earnings suggested the measurement error in the discretionary accruals correlated with performance is largely removed.

To summaries, as expected that the stricter regulations of IFRS will lead to less management of earnings. It is observed that the degree of management of earnings is comparably higher in the German listed companies before the adoption of IFRS. It can be explained that Germany is one of the code law countries where the accounting standards give greater discretion to managers in deciding when economic gains and losses are incorporated in accounting income (Ball et al, 2000).
Fig. 3 presents the definition of variables.

### TABLE 1

**TOTAL ACCRUALS AND COMPONENTS OF ACCRUALS IN ACCRUALS MODEL NORMAL DISTRIBUTION TEST & DESCRIPTIVE STATISTICS FOR GERMAN COMPANIES**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Median</th>
<th>Std. Deviation</th>
<th>Positive Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>NI</td>
<td>0.28</td>
<td>2.950</td>
<td>0.525</td>
<td>0.423</td>
<td>0.0548</td>
<td>0.96</td>
</tr>
<tr>
<td>CFO</td>
<td>0.338</td>
<td>2.785</td>
<td>0.986</td>
<td>0.986</td>
<td>0.0845</td>
<td>0.89</td>
</tr>
<tr>
<td>ACCR</td>
<td>0.325</td>
<td>2.468</td>
<td>0.969</td>
<td>0.969</td>
<td>0.0709</td>
<td>0.24</td>
</tr>
<tr>
<td>DAC</td>
<td>-5.031</td>
<td>-0.003</td>
<td>-0.003</td>
<td>-0.003</td>
<td>0.0845</td>
<td>0.47</td>
</tr>
<tr>
<td>NDAC</td>
<td>-1.097</td>
<td>-0.037</td>
<td>-0.037</td>
<td>-0.037</td>
<td>0.0364</td>
<td>0.13</td>
</tr>
<tr>
<td>NDNI</td>
<td>0.520</td>
<td>0.0562</td>
<td>0.562</td>
<td>0.562</td>
<td>0.0364</td>
<td>0.79</td>
</tr>
<tr>
<td>St. Return</td>
<td>-1.000</td>
<td>0.0388</td>
<td>-0.0388</td>
<td>-0.0388</td>
<td>0.3684</td>
<td>0.45</td>
</tr>
</tbody>
</table>

The original sample consists of 1850 firm years during 1994-2010. All the financial institutions and observations where one or more of the variables such as stock return, accruals and net income are missing, are deleted, which results in a loss of 637 listed companies. Cases with extreme outliers in Operating cash flow (CFO), net income (NI), total accruals (ACCR) and stock returns are deleted (values above +1 and below −1). This results in a further loss of 219 firm years reducing the final sample to 1443 firm’s years. Data is collected from the DataStream.

Net income (NI) is net income before extraordinary items and preferred dividends (DataStream # WC01551). Total accruals (ACCR) are computed according to the Healy’s (1985) model as follows: ACCR = Δ current assets (# WC02201) - Δ current liabilities (# WC 03101) - Δ cash & equivalent (# WC02001) + Δ short term debt & current portion of long-term debt (# WC03051) - Δ deprecations, depletion & amortization (# WC 01151). Cash flows operating (CFO) is computed as the difference between net income (NI) and total accruals (ACCR). Discretionary accruals (DAC) are determined using the cross-sectional variation of the Jones (1991) model. Non-discretionary accruals are computed as the difference between total accruals (ACCR) and discretionary accruals (DAC). Non-discretionary net income (NDNI) is the difference between net income (NI) and discretionary accruals (DAC). Stock return is referred to the index of return on invested capital (ROI) as: St. Return = (ROI_t - ROI_{t-1}) / ROI_{t-1}. Where ROI is obtained from the Datastream item # WC08376.

**TABLE 2**

**A PEARSON CORRELATION AND A COEFFICIENT OF DETERMINATION OF WORKING CAPITAL ACCRUALS FOR GERMAN LISTED COMPANIES**

<table>
<thead>
<tr>
<th>Correlation Coefficients</th>
<th>(R)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>current assets</td>
<td>0.392</td>
<td>0.000</td>
</tr>
<tr>
<td>current liabilities</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>cash &amp; equivalent</td>
<td>0.235</td>
<td>0.000</td>
</tr>
<tr>
<td>net income</td>
<td>0.194</td>
<td>0.000</td>
</tr>
<tr>
<td>depreciation</td>
<td>-0.174</td>
<td>0.000</td>
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</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

### TABLE 4

**ESTIMATIONS OF ACCRUALS MODELS, GERMAN COMPANIES**

**Jones Model (Jones, 1991):**

\[
TA_t / A_{t-1} = b_1 (1 / A_{t-1}) + b_2 (\Delta REV_t / A_{t-1}) + b_3 (PPE_t / A_{t-1}) + \varepsilon_t
\]

**Modified Jones model (Dechow, 1995):**

\[
TA_t / A_{t-1} = b_1 (1 / A_{t-1}) + b_2 (\Delta REV_t / A_{t-1} - \Delta AR_t / A_{t-1}) + b_3 (PPE_t / A_{t-1}) + \varepsilon_t
\]

**Cash Flow Modified Jones model (Kasznik, 1999):**

\[
TA_t / A_{t-1} = b_1 (1 / A_{t-1}) + b_2 (\Delta REV_t / A_{t-1} - \Delta AR_t / A_{t-1}) + b_3 (PPE_t / A_{t-1}) + b_4 (\Delta CF_t) + \varepsilon_t
\]

**Net operating income Modified Jones Model**

\[
TA_t / A_{t-1} = b_1 (1 / A_{t-1}) + b_2 (\Delta REV_t / A_{t-1} - \Delta AR_t / A_{t-1}) + b_3 (PPE_t / A_{t-1}) + b_4 (NI_{LTA}) + \varepsilon_t
\]
To obtain meaningful estimates with the three models are estimated for German listed companies. N refers to 102 firm-year regressions associated with the 1,443 firm-year observations. Mean (median) coefficients are reported with t-statistics (Wilcoxon z-scores) and p-values. Both parametric t test and non-parametric Wilcoxon signed rank test are applied to test whether mean and median coefficients are significantly different from zero. *, **, indicate statistical significance at the 5% and 1% respectively (two tailed). % Positive indicates the proportion with positive signs. Adj-R² is the average adjusted R-squares of 1443 industry-year pair’s regressions.

### TABLE 4
**ESTIMATION OF ACCRUALS MODEL**

**PANEL A**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Median</th>
<th>Std Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
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<tr>
<td></td>
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<td>Statistics</td>
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<tr>
<td></td>
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<td>Statistic</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Panel A: Total Accruals</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>ACRR</td>
<td>1443</td>
<td>0.719</td>
<td>0.394</td>
<td>0.124</td>
<td>-0.028</td>
<td>0.050</td>
<td>0.046</td>
<td>0.53</td>
<td>0.079</td>
</tr>
<tr>
<td>Panel B: Components of accruals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>deb 1n</td>
<td>1443</td>
<td>0.151</td>
<td>-0.48</td>
<td>0.14</td>
<td>0.061</td>
<td>0.003</td>
<td>0.157</td>
<td>0.896</td>
<td>0.079</td>
</tr>
<tr>
<td>del 1n</td>
<td>1443</td>
<td>1.12</td>
<td>0.44</td>
<td>0.77</td>
<td>0.009</td>
<td>0.019</td>
<td>0.117</td>
<td>0.613</td>
<td>0.079</td>
</tr>
<tr>
<td>Gla 1n</td>
<td>1443</td>
<td>1.77</td>
<td>0.48</td>
<td>1.39</td>
<td>0.025</td>
<td>0.000</td>
<td>0.108</td>
<td>0.79</td>
<td>0.079</td>
</tr>
<tr>
<td>del 1an</td>
<td>1443</td>
<td>1.01</td>
<td>0.49</td>
<td>0.51</td>
<td>0.001</td>
<td>0.006</td>
<td>0.073</td>
<td>0.234</td>
<td>0.079</td>
</tr>
<tr>
<td>dep 1n</td>
<td>1443</td>
<td>0.34</td>
<td>0.00</td>
<td>0.24</td>
<td>0.006</td>
<td>0.000</td>
<td>0.034</td>
<td>0.064</td>
<td>0.079</td>
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<tr>
<td>Panel C: Independent Variables</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(EBA LTA)</td>
<td>1443</td>
<td>2.57</td>
<td>0.858</td>
<td>1.649</td>
<td>0.140</td>
<td>0.087</td>
<td>0.321</td>
<td>0.947</td>
<td>0.079</td>
</tr>
<tr>
<td>(h)</td>
<td>1443</td>
<td>0.084</td>
<td>0.070</td>
<td>0.514</td>
<td>0.026</td>
<td>0.016</td>
<td>0.067</td>
<td>0.317</td>
<td>0.079</td>
</tr>
<tr>
<td>(INV LTA)</td>
<td>1443</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.079</td>
</tr>
<tr>
<td>(PPE_LTA)</td>
<td>1443</td>
<td>1.268</td>
<td>0.020</td>
<td>1.268</td>
<td>0.039</td>
<td>0.027</td>
<td>0.181</td>
<td>0.160</td>
<td>0.079</td>
</tr>
</tbody>
</table>

**PANEL B**

**WILCOXON SIGNED RANKS TEST STATISTICS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Jones Model</th>
<th>Modified Jones Model</th>
<th>Cash Flow Modified Jones Model</th>
<th>Net Operating Income Modified Jones Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>3.251a</td>
<td>-3.259b</td>
<td>-3.353c</td>
<td>-3.265d</td>
</tr>
<tr>
<td>W</td>
<td>0.002</td>
<td>0.000</td>
<td>0.001</td>
<td>0.001</td>
</tr>
</tbody>
</table>

a. Wilcoxon Signed Ranks Test
b. Based on paired ranks
c. Based on post-ranks
d. All variables defined in figure

### 5 CONCLUSION

This study detected that earnings are managed in Germany before and after adoption of IFRS. This paper examine the overall level of management of earnings before adoption of IFRS that estimated from Jones Model, Modified Jones Model, Cash Flow Modified Jones Model and Net operating income model.
Modified Jones Model. Adjusted Net operating income Modified Jones model demonstrate a low absolute measure of discretionary accruals. It demonstrates the average levels of management of earnings activities have been supplementary decreased with the adjusted of Net income Modified Jones model. The drop in level of management of earnings suggested the measurement error in the discretionary accruals correlated with performance is largely removed. I investigated the selection of listed companies of Germany, for estimating accruals using both simulations and empirical tests.

In general, the average level of management of earnings before the adoption of IFRS that occurred among German companies is approximately around 16% of total assets which is relatively significant. And the average level of management of earnings after the adoption of IFRS that occurred among German companies is around 8% of total assets which is significant. This research detected that management of earnings has been managed is relatively stronger under German GAAP rather than IFRS. Between those two frameworks, the level of earnings management is roughly difference. These results hold for the tests using the concept of discretionary accruals and for the additional tests of earnings components. A lower level of management of earnings by adoption of IFRS indicates that IFRS relatively more effectively against management of earnings than German GAAP or IAS. Research findings have two suggestions. First, IFRS seem to be better performing than German GAAP when institutional factors and economic incentives are the same. Second, supervisory body and marketplaces may consider increasing IFRS reporting requirements by elements taken from IAS.

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