International Financial Reporting Standards and Accounting Quality: Evidence from the European Union[*]

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ABSTRACT

This study compares the accounting quality of publicly listed companies in 15 member states of the European Union before and after the full adoption of International Financial Reporting Standards (IFRS) in 2005. We use five indicators, namely, earnings smoothing, managing earnings toward targets, the magnitude of absolute discretionary accruals, accruals quality, and timely loss recognition as proxies for accounting quality. Our results are mixed. We find that the majority of accounting quality indicators improved after IFRS adoption in the European Union. That is, there is less of managing earnings towards a target, a lower magnitude of absolute discretionary accruals, and higher accruals quality. However, prior research indicates that earnings smoothing and deferring losses are two popular earnings management vehicles. We find that firms engage in more earnings smoothing and recognize large losses in a less timely manner in post-IFRS periods.

Our research design takes into account the fact that the application of IFRS reflects the combined effects of the features of financial reporting systems, the interpretation and enforcement of accounting standards, and other environmental factors. As we compare the accounting quality indicators of the same countries between the pre- versus post-adoption periods, we effectively control for the influences of the business environment on accounting quality. Our inferences are also robust to a number of sensitivity tests.

Overall, accounting quality marginally improved after IFRS adoption in our sample EU firms and countries. However, we find that earnings smoothing and loss deferring are worse after IFRS adoption. The findings suggest that a change in accounting standards does not eliminate earnings management incentives, though it may restrict management opportunistic discretion. If firms have strong earnings management incentives, merely changing the accounting standards will not necessarily enhance accounting quality.

Keywords: *IFRS adoption; accounting quality; the European Union; International Convergence of Accounting Standards*

Data Availability: *The data used in this study are publicly available from the sources indicated in the text.*

I. INTRODUCTION

There are currently two main schools of thought in the debate on International Financial Reporting Standards (IFRS) and accounting harmonization or convergence. The proponents argue that a single global set of accounting standards helps reduce information asymmetry, lowers the cost of capital, and increases capital flow across borders. The opponents argue that the characteristics of local business environments and institutional frameworks determine the form and contents of accounting standards. Thus, accounting standards in two countries need not be the same and the use of IFRS does not necessarily improve accounting quality. Since more and more firms and countries have adopted IFRS or considered replacing their national standards with IFRS, in pace with the rapid development of economic globalization and the worldwide integration of capital markets since the 1990s, it is the right time to evaluate the impact of IFRS on accounting quality for the early adopters (firms and countries) of IFRS.[1]

The purpose of this study is to examine the effect of IFRS adoption on accounting quality in the European Union (EU). On 19 July 2002, the European Parliament passed a regulation of "The European Union Act 1606/2002—the Application of International Accounting Standards". This regulation mandates the official adoption of IFRS in the EU starting from 1 January 2005. This is one of the most significant capital market and accounting regulation reforms in the EU in recent years. It is also a milestone in the development of international accounting convergence. Since its passage, more and more countries and regions have fully adopted IFRS as domestic accounting standards or converged their domestic accounting standards with IFRS. To date, more than 100 countries and regions around the world require or allow the use of IFRS (Deloitte Touche Tohmatsu 2008). The United States' capital market regulator, the Securities and Exchange Commission (SEC), recently removed the requirement for US exchange-listed foreign companies to reconcile with US GAAP if they apply IFRS. The SEC is also considering the full adoption of IFRS for domestic US listed companies in the next 3-5 years (SEC 2008).

Although it is generally accepted that IFRS is a set of high quality accounting standards, this does not imply that once a country adopts IFRS it will produce high quality financial

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[1] For simplicity, this study uses the term IFRS to refer to both IFRS issued by IASB and International Accounting Standards (IAS) issued by IASC (the predecessor of IASB).

reporting (Ball 2006). High quality standards are a necessary condition, but not a sufficient condition, for high quality information (Ball et al. 2003). Given the SEC's consideration of adopting IFRS for US domestic firms, a study of the experience of countries and companies that have already adopted IFRS is certainly beneficial to evaluate the effectiveness of IFRS adoption. We take the advantage of unique institutional settings in the EU to conduct the research in order to provide insights into the issue of international convergence of accounting standards.

To empirically investigate the effect of IFRS adoption on accounting quality in the EU, this study employed two categories of accounting quality measures that have been widely used in prior studies: earnings management and timely loss recognition (e.g., Leuz et al. 2003; Lang et al. 2003, 2006; Barth et al. 2007, 2008; Christensen et al. 2008; Jones 1991; Dechow et al. 1995, 2003; DeFond & Jiambalvo 1994; Dechow & Dichev 2002; Larcker & Richardson 2004; Kothari et al. 2005; Jones et al. 2008). Using data from the publicly listed companies of 15 EU member countries for the years 2000 to 2007, this study finds some evidence of accounting quality improvement after IFRS adoption. That is, there is less of managing earnings towards a target, a smaller magnitude of absolute discretionary accruals, and higher accruals quality after IFRS adoption. However, firms engage in more earnings smoothing and less timely recognition of large losses after IFRS adoption. Given that earnings smoothing and deferring losses are two popular earnings management vehicles, our results suggest that IFRS may limit management opportunistic discretions by reducing available accounting alternatives, but it does not entirely eliminate earnings management incentives. If firms have strong earnings management incentives, changing accounting standards alone may not enhance accounting quality. Our evidence is consistent with this notion.

Factors other than a change in accounting standards may impact accounting quality in the EU. First, accounting quality is jointly affected by accounting standards and macro-economic factors, and institutional changes might have simultaneously taken place around 2005 in these countries. For example, some countries may have introduced a more effective enforcement system or more corporate governance regulations during the period. To address this concern, we compare the accounting quality of the same countries before and after IFRS implementation, so that each country acts as its own control and the influences of macro-economic variables are minimised. Second, some companies may have voluntarily adopted IFRS before 2005. In one of our robust tests we exclude these firms, the results are unchanged. Our study results are also robust to several additional sensitivity tests.

This study contributes to the extant literature examining the accounting quality effects of IFRS adoption in two ways. First, we use a large sample of publicly listed firms from the 15 EU member states so the results are more robust than those of prior studies. In addition, our data cover the first three years after IFRS adoption. In contrast, prior studies often concentrated on a single-country setting (e.g., Sweden or Germany) and the data covered only one or two years after IFRS adoption. Thus, our results should be more convincing than those of prior studies. Second, we use an array of accounting quality metrics that were widely used in prior studies, and our study results are robust. We believe that our research design is more representative of EU countries and that the results are therefore more generalizable.

The rest of this paper is organised as follows: The next section reviews prior research. Section III describes the unique institutional settings in the EU and develops our study's hypothesis. Section IV illustrates sample selection, data sources and research design. Section V presents descriptive statistics, empirical results and robustness tests. A brief conclusion is provided in Section VI.

II. LITERATURE REVIEW

2.1 Voluntary IFRS Adoption and Accounting Quality

More and more firms have voluntarily adopted IFRS to prepare financial statements since the end of the 1990s. Prior studies document that voluntary adoption of IFRS is beneficial to firms in such ways as offering a lower cost of equity capital (Daske et al. 2007; Kim & Shi 2007), making it relatively easily to cross-list in the well-developed international capital markets (e.g., NYSE, NASDAQ or LSE) (Cuijpers & Buijink 2005), improving transparency and comparability of financial reporting, reducing information asymmetry between insiders and outside minority shareholders (Leuz & Verrecchia 2000; Leuz 2003), improving analyst forecast accuracy (Ashbaugh & Pincus 2001), allowing for a more efficient allocation of savings worldwide (Street et al. 1999), and so on.

Barth et al. (2008) investigated whether voluntary IFRS adoption improves accounting quality using 1,896 firm-year observations from 21 countries and regions for the years 1994 to 2003. Their results show that accounting quality has generally improved after voluntary IFRS adoption. Van Tendeloo and Vanstraelen (2005) examined whether voluntary IFRS adoption is associated with lower earnings management using German firms from 1999 to 2001. After controlling for other differences in earnings management incentives and entrenchment mechanisms, contrary to Barth et al. (2008), they found that firms which voluntarily adopt IFRS have more discretionary accruals and a lower negative correlation between accruals and cash flows from operations than firms reporting under German GAAP. However, the decrease effect of voluntary IFRS adoption on accounting quality is significantly reduced when the firms is audited by Big 4/5 auditors.

Hung and Subramanyam (2007) investigated the financial statement effects of IFRS adoption on German firms from 1998 to 2002. They found that accounting quality is higher under IFRS than under German GAAP (i.e., HGB). However, they show no significant difference in the value relevance of book value and earnings between IFRS and HGB.

Following Barth et al. (2008), Christensen et al. (2008) investigated the impact of incentives on accounting quality changes around IFRS adoption using German publicly listed companies from 1998 to 2004. They found that the improvement effect of voluntary IFRS adoption only happens to firms with incentives to adopt, which is consistent with prior findings that incentives dominate accounting standards in determining accounting quality (e.g., Ball et al. 2003; Soderstrom & Sun 2007).

2.2 Mandatory IFRS Adoption and Accounting Quality

Beuselinck et al. (2007) examined the comparability of accounting earnings using 14 EU member states for the years 1990 to 2005. They used accruals-cash flows association as a proxy for earnings comparability and found that accruals measurement is substantially affected by business cycle stages and firm-specific reporting incentives. Overall, their results show that earnings comparability across Europe does not improve after mandatory IFRS adoption.

Paananen (2008) examined whether accounting quality increased after compulsory IFRS adoption using Swedish publicly listed firms from 2003 to 2006. Following Barth et al. (2008), earnings smoothing, managing earnings toward targets, timely loss recognition, and value relevance were used as proxies for accounting quality. Interestingly, Paananen found that accounting quality decreased after IFRS adoption in Sweden, especially in the committed adopters. Similarly, using German companies for the years 2000 to 2006, Paananen and Lin (2008) examined the development of accounting quality under IAS and IFRS over time and found that accounting quality decreased after IFRS adoption in Germany.

Horton et al. (2008) investigated the effects of the compulsory adoption of IFRS on firms' information environments using 16 European countries from 2003 to 2007. They used analysts' forecast accuracy, following disagreements and the volatility of revisions as proxies for firms' information environments. They found that the largest improvement in the information environment was confined to firms that had voluntarily adopted IFRS earlier. In addition, only non-financial firms' information environments improved; not financial firms'.

Landsman et al. (2009) investigated whether the information content of earnings announcements increases after mandatory IFRS adoption by using 28,143 firm-year observations from 27 countries from 2000 to 2007[2]. Abnormal return volatility and abnormal trading volume as developed by Beaver (1968) were used as proxies for the information content of earnings announcements. They found that information content increased in IFRS-adopting countries, but this happened only when they used abnormal return volatility as a proxy for information content. If abnormal trading volume was used as a proxy, the increase in information content disappeared. Moreover, they found that increases in abnormal return volatility are concentrated in code law countries.

Overall, the findings on the effects of IFRS adoption on accounting quality are mixed in prior studies. These studies were conducted shortly after IFRS adoption, so that their data are confined to the first one or two years after the mandatory adoption of IFRS. Also, the sample size is relatively small. Since publicly listed firms need some time to understand and implement IFRS, whether IFRS adoption is associated with the improvement of accounting quality is still an empirical issue. In our research design we use a larger sample, more

[2] There are 16 countries' adoption of IFRS and 11 countries' remaining adoption of domestic accounting standards in 2000 to 2007, respectively.

countries, more years following adoption and more accounting quality proxies to examine this issue.

III. INSTITUTIONAL SETTING AND HYPTOTHESIS DEVELOPMENT

The convergence of financial reporting practices worldwide is a controversial issue. The proponents of international accounting harmonization argue that a single set of global accounting standards will help reduce information asymmetry, lower the cost of capital, and increase capital flow across borders. The current version of IFRS has reduced allowable accounting alternatives, limited management's opportunistic discretion, and required accounting measurement and disclosure that can better reflect a company's financial position and economic performance. This will lead to higher quality financial statements (Leuz & Verrcchia 2000; Leuz 2003; Daske et al. 2007; Barth et al. 2008). The opponents argue that the characteristics of local business environments and institutional frameworks determine the form and contents of accounting standards. Thus, accounting standards in two countries with distinct economic systems and business cultures need not be the same. Moreover, restricting managerial discretion relating to accounting alternatives could eliminate a firm's ability to report accounting numbers that are more reflective of the firm's economic situation. In addition, the inherent flexibility in IFRS as the principles-based standards could provide greater opportunity for earnings management relative to rules-based domestic standards. As a result, the use of IFRS does not necessarily improve accounting quality (Ball et al. 2003, 2006; Bellselinck et al. 2007; Christensen et al. 2008).

Why we chose the EU as our research setting

Each EU member state used its own accounting standards before IFRS adoption in 2005. Since the 1960s, the European Commission (EC, the predecessor of the EU) has been dedicated to harmonizing the accounting practices of member states. The aim of the EC's accounting harmonization is to improve disclosure quality, such as comparability and transparency, of the publicly listed companies in the EC. The expected benefits include reducing transaction costs, increasing the global competitiveness of EC companies, promoting intra-trade among member states, and clearing barriers to establish a uniform

European financial market. Numerous efforts have been made to promote the integration of EU in the last four decades. These efforts include the adoption of a single European currency (the Euro) and the Schengen Agreement. The EU is becoming not only an international organization of regional integration, but also plays an active role in current world political affairs.

In May 2002, IASB issued the exposure draft, *The Improvement of Existing International Accounting Standards*, which sets forth many improvements of thirteen existing IAS. The revised version of IAS reduces or eliminates alternative accounting treatments (such as LIFO) and overlapping or contradiction among the existing IAS. Prior studies document that the reduction or elimination of alternative accounting treatments will limit management's opportunistic discretion in determining accounting numbers (Ashbaugh & Pincus 2001; Barth et al. 2008), and will better reflect a firm's underlying performance (Ewert & Wagenhofer 2005).

Eventually, on 19 July 2002, the EU Parliament passed a regulation requiring all publicly listed companies in the EU to adopt IFRS to prepare consolidated financial statements starting from 1 January 2005[3]. At the same time, the EU enacted several measures to ensure that IFRS will be strictly implemented and to strengthen accounting convergence, including establishing corresponding mechanisms to harmonize accounting standards-setting institutions in each member state, strengthening public monitoring of the auditing industry, revising the related EU Directives, and building an effective monitoring mechanism for accounting standards implementation. Moreover, the EU has solid institutional infrastructures, such as strong investor protection and legal enforcement, clean government, and so on (e.g., La Porta et al. 1998, 2006; Djankov et al. 2008; Kaufmann et al. 2008; Wingate 1997; Transparency International 2000-2007). Thus, it is expected that IFRS will be rigorously followed and implemented by publicly listed companies in the EU. We therefore posit that accounting quality will be higher in 2005-2007 (the adoption period) than in 2000-2004 (the most recent pre-adoption period).

It is generally accepted that the quality of IFRS is higher than most domestic accounting

[3] Two types of publicly listed companies in the EU can prepare their financial reports under IFRS until 2007: firms with a domicile in the EU that do not publicly list on any EU stock exchange and that use U.S. GAAP to prepare financial statements, and firms that have only publicly traded debt securities.

standards (e.g., Leuz & Verrecchia 2000; Leuz 2003; Ashbaugh & Pincus 2001; Barth et al. 2007, 2008). That is why we expect accounting quality to be higher after the adoption of IFRS. However, even if we observe that accounting quality indicators are improved, we may not be able to attribute the results to accounting standards. This is because the efficiency of legal/judicial systems and the quality of legal enforcement vary widely among different countries (La Porta et al. 1998), and the effectiveness of regulation depends largely upon proper enforcement (Bhattacharya & Daouk 2002; DeFond & Hung 2004; Tang et al. 2008). These macro-economic factors have a significant impact on accounting quality. We chose the EU as our research setting in order to control for these confounding macro-economic and business environmental influences. Since we compare the accounting quality between pre- and post IFRS adoption for the same countries, each country acts as its own control so that these non-accounting standards effects on accounting quality can be minimized.

We therefore formalize the following study hypothesis:

Hypothesis: *Ceteris paribus, accounting quality in the European Union is higher in the IFRS adoption period (2005-2007) than in the pre-adoption period (2000-2004).*

IV. DATA AND RESEARCH DESIGN

4.1 Sample and Data

Sample Selection

This study uses the listed companies in 15 EU member states[4] to investigate the effect of IFRS adoption on accounting quality. Our sample period starts from year 2000, when the core standards issued by IASC in 1998 had been endorsed by the International Organization of Securities Commission (IOSCO), who recommended that the world's securities regulators permit foreign issuers to use IAS for cross-border offering (IOSCO 2000). Our sample period ends in year 2007, as it is the latest year data are available from databases. We define years 2000-2004 as the pre-adoption period, and years 2005-2007 as the adoption period.

[4] There were 27 member states in the EU as of 31 December 2008. However, this study uses only 15 EU member states to examine the effect of IFRS adoption on accounting quality. This is because ten member states (Cyprus, Czech, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia) and two member states (Bulgaria and Romania) joined the EU on 1 May 2004 and 1 January 2007, respectively, and these twelve EU member states all belong to emerging capital markets (Bhattacharya & Daouk 2002). The financial statement data in most of these countries are not available in the Worldscope dataset.

Data

Sample firm selection starts by reviewing annual financial statements (from the Worldscope dataset) of all publicly listed firms in the 15 EU member states from 2000 to 2007. These data are used to calculate accounting quality measures and related control variables, including total assets; net incomes; cash flow from operations; total liabilities; properties, plants and equipments; accounts receivables; sales; market value of equity; Big 4/5 auditors; industry; accounting standards followed; and so on. Consistent with prior studies (e.g., Hung 2001; Leuz et al. 2003; Francis & Wang 2008), this study excludes financial institutions (i.e., those with four-digit Standard Industrial Classification (SIC) codes between 6000 and 6999) from the sample of the main tests[5] due to their particular regulation and disclosure requirements. All variables (except for indicator variables) were Winsorized at the 1st and 99th percentiles to mitigate the effects of outliers (Francis et al. 2005).

4.2 Measurement of Accounting Quality

We adopt two categories of accounting quality measures that were frequently used in prior studies, namely, earnings management and timely loss recognition (e.g., Leuz et al. 2003; Lang et al. 2003, 2006; Barth et al. 2007, 2008; Christensen et al. 2008; Jones 1991; Dechow et al. 1995, 2003; DeFond & Jiambalvo 1994; Dechow & Dichev 2002; Larcker & Richardson 2004; Kothari et al. 2005; Jones et al. 2008).

4.2.1 *Earnings Management*

Earnings management by nature is either to mislead some stakeholders about a firm's underlying economic performance or to influence contractual outcomes that depend on reported accounting numbers (Healy & Whalen 1999). This study uses four earnings management metrics to assess accounting quality: earnings smoothing, managing earnings toward targets, the magnitude of cross-sectional absolute discretionary accruals, and accruals quality. More specifically, earnings smoothing includes two metrics: the variability of the change in net income, and the variability of the change in net income over the variability of the change in cash flow from operations. A high variability is consistent with less earnings

[5] When calculating the accounting quality indicators of earnings smoothing, managing earnings toward targets, and timely loss recognition, consistent with Barth et al. (2008), this study includes financial institutions. In robustness tests, the results are quantitatively unchanged after excluding financial institutions.

smoothing (Lang et al. 2003, 2006; Leuz et al. 2003; Ball & Shivakumar 2005, 2006; Barth et al. 2008; Christensen et al. 2008). The magnitude of cross-sectional absolute discretionary accruals is calculated based on estimated discretionary accruals, where estimated discretionary accruals are defined as total accruals minus estimated normal accruals. Estimated normal accruals are determined from eight discretionary accruals models that were widely used in prior studies: the Jones model, the modified Jones model, the adapted Jones model, the lagged model, the forward-looking model, the modified Jones model with book-to-market ratio and cash flows from operations, the modified Jones model with current-year ROA, and the modified Jones model with prior-year ROA (Jones 1991; DeFond & Jiambalvo 1994; Dechow et al. 1995, 2003; Larcker & Richardson 2004; Kothari et al. 2005; Jones et al. 2008). A higher magnitude of cross-sectional absolute discretionary accruals indicates a greater level of earnings management, or lower accounting quality. Accruals quality is measured as the standard deviation of a firm's residuals that are estimated by the cross-sectional Dechow-Dichev model (Dechow & Dichev 2002). A larger standard deviation of the firm's residuals indicates poorer accruals quality, or lower accounting quality.

Earnings Smoothing

This study uses the residuals from the regressions expressed in Equations (1) and (2) as a proxy for earnings smoothing to mitigate confounding effects (Barth et al. 2008):

$$\begin{aligned}\Delta NI_{i,t} = {} & \alpha_0 + \alpha_1 EMV_{i,t} + \alpha_2 GROWTH_{i,t} + \alpha_3 EISSUE_{i,t} + \alpha_4 LEV_{i,t} \\ & + \alpha_5 DISSUE_{i,t} + \alpha_6 TURN_{i,t} + \alpha_7 CFO_{i,t} + \alpha_8 AUD_{i,t} + \alpha_9 NUMEX_{i,t} \\ & + \alpha_{10} XLIST_{i,t} + \alpha_{11} CLOSE_{i,t} + \sum_{k=1}^{14} \alpha_{k+11} Country_i + \sum_{j=1}^{43} \alpha_{j+25} Industry_i + \varepsilon_{i,t}\end{aligned} \tag{1}$$

$$\begin{aligned}\Delta CFO_{i,t} = {} & \alpha_0 + \alpha_1 EMV_{i,t} + \alpha_2 GROWTH_{i,t} + \alpha_3 EISSUE_{i,t} + \alpha_4 LEV_{i,t} \\ & + \alpha_5 DISSUE_{i,t} + \alpha_6 TURN_{i,t} + \alpha_7 CFO_{i,t} + \alpha_8 AUD_{i,t} + \alpha_9 NUMEX_{i,t} \\ & + \alpha_{10} XLIST_{i,t} + \alpha_{11} CLOSE_{i,t} + \sum_{k=1}^{14} \alpha_{k+11} Country_i + \sum_{j=1}^{43} \alpha_{j+25} Industry_i + \varepsilon_{i,t}\end{aligned} \tag{2}$$

where $\Delta NI_{i,t}$ is the change in net income before extraordinary items scaled by end of year total assets for firm i year t; $\Delta CFO_{i,t}$ is the change in cash flow from operations scaled by end of year total assets for firm i year t; $EMV_{i,t}$ is the natural logarithm of end of year market value of equity in millions of US dollars for firm i year t; $GROWTH_{i,t}$ is the annual percentage change in sales for firm i year t; $EISSUE_{i,t}$ is the annual percentage change in common stock for firm i year t; $LEV_{i,t}$ is the end of year total liabilities divided by end of year equity book value for firm i year t; $DISSUE_{i,t}$ is the annual percentage change in total liabilities for firm i year t; $TURN_{i,t}$ is the sales divided by end of year total assets for firm i year t; $CFO_{i,t}$ is the annual net cash flow from operations scaled by end of year total assets for firm i year t; $AUD_{i,t}$ is an indicator variable that equals one if a Big 4/5 auditor is hired and zero otherwise for firm i year t; $NUMEX_{i,t}$ is the number of exchanges on which a firm's stock is listed for firm i year t; $XLIST_{i,t}$ is an indicator variable that equals one if the firm is also listed on any U.S. stock exchange[6] for firm i year t; $CLOSE_{i,t}$ is the percentage of closely held shares of the firm as reported by Worldscope for firm i year t[7]; *Country* is a country indicator variable (this study uses Austria as a benchmark); and *Industry* is a Fama-French (1997) industry classification indicator variable[8] (this study uses Agric (Agricultural) as benchmark). Consistent with Francis et al. (2005), we require at least 20 observations in each Fama-French (1997) industry classification, which defines 44 Fama-French (1997) industries.

Managing Earnings toward Targets

Prior studies document that corporate managements engage in managing earnings toward small positive earnings to avoid reporting negative earnings (Burgstahler & Dichev 1997; Leuz et al. 2003; Burgstahler et al. 2006; Tang et al. 2008). Barth et al. (2008) found that a firm's voluntary adoption of IFRS exhibits a less extent of managing earnings towards a target after controlling for potential incentives for voluntary IFRS adoption. However, different from Barth et al. (2008), this study investigates whether firms engage in managing earnings towards a target less after IFRS adoption in the EU. Various incentives for voluntary IFRS adoption do not exist in the EU member states since IFRS adoption is compulsory. Based on prior research (e.g., Lang et al. 2003, 2006; Barth et al. 2008), this study controls

[6] In the Worldscope dataset, there are nine US stock exchanges, i.e., ASE, BSE, CIN, MSE, NAS, NYSE, OTC, PBW, and PCS.

[7] In the Worldscope dataset, closely held shares of many firms are not available. To keep as many observations as possible, consistent with Barth et al. (2008), this study does not include this variable in the main test. In robustness tests, this variable is included in the regression model, and the results are virtually unchanged.

[8] In robustness tests, the results are virtually unchanged when we use a two-digit SIC to classify an industry.

for potential incentives for managing earnings toward targets even there is no incentive for voluntary IFRS adoption. More specifically, we run the logistic regression expressed in Equation (3) to investigate whether IFRS adoption reduces firms' managing of earnings toward small positive earnings:

$$\begin{aligned} SPOS_{i,t} = {} & \alpha_0 + \alpha_1 POST_{i,t} + \beta_1 EMV_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 EISSUE_{i,t} + \beta_4 LEV_{i,t} \\ & + \beta_5 DISSUE_{i,t} + \beta_6 TURN_{i,t} + \beta_7 CFO_{i,t} + \beta_8 AUD_{i,t} + \beta_9 NUMEX_{i,t} \\ & + \beta_{10} XLIST_{i,t} + \beta_{11} CLOSE_{i,t} + \sum_{k=1}^{14} \beta_{k+11} Country_i + \sum_{j=1}^{43} \beta_{j+25} Industry_i + \varepsilon_{i,t} \end{aligned} \tag{3}$$

where $SPOS_{i,t}$ is an indicator variable that equals one for observations of firms with annual net incomes scaled by total assets between 0 and 0.01 for firm i year t (Lang et al. 2003; Barth et al. 2008; Christensen et al. 2008); $POST_{i,t}$ is an indicator variable that equals one for observations in the adoption period (i.e., 2005 to 2007), and zero otherwise for firm i year t. The definitions of other variables are the same as in Equations (1) and (2).

A significant negative coefficient on *POST* (i.e., $\alpha_1 < 0$) demonstrates that firms managed earnings toward small positive amounts more frequently in the pre-adoption period than they did in the adoption period, which should indicate higher accounting quality in the adoption period.

The Magnitude of Cross-Sectional Absolute Discretionary Accruals

Prior studies frequently used discretionary accruals to measure the extent of earnings management. Discretionary (abnormal) accruals are defined as total accruals minus estimated normal (non-discretionary) accruals, where the estimated normal accruals are derived from a number of discretionary accruals models widely used in prior studies: including the Jones model, modified Jones model, the adapted Jones model, the Lagged model, the forward-looking model, the modified Jones model with book-to-market ratio and cash flows from operations, the modified Jones model with current-year ROA, and the modified Jones model with prior-year ROA (Jones 1991; DeFond & Jiambalvo 1994; Dechow et al. 1995, 2003; Larcker & Richardson 2004; Kothari et al. 2005; Jones et al. 2008).[9]

[9] Extant literature such as Dechow et al. (1995), Healy and Wahlen (1999), Young (1999) and McNichols (2000) has provided extensive earnings management literature reviews. According to the literature, the Healy model, the DeAngelo model, and the Industry model (Healy 1985; DeAngelo 1986) can also be applied to determine estimated normal accruals, although they are not widely used in earnings management studies. However, these models require time-series data to estimate non-discretionary accruals. Due to a lack of a sufficiently long period for time-series data, the three time-series

Since earnings management can involve either income-increasing accruals or income-decreasing accruals to meet earnings targets, consistent with prior studies (e.g., Warfield et al. 1995; Reynolds & Francis 2000; Klein 2002; van Tendeloo & Vanstraelen 2005; Wang 2006; Bowen et al. 2008), the magnitude of absolute discretionary accruals is used in this study to assess the extent of earnings management. A higher magnitude of absolute discretionary accruals corresponds to a greater level of earnings management, or lower accounting quality, and vice versa. More specifically, discretionary accruals are estimated as the residuals of the following cross-sectional discretionary accruals models. Since the purpose of this study is to examine the effect of IFRS adoption on accounting quality in the EU, all 15 EU member countries are viewed as a single economy entity in the estimation of various non-discretionary accruals, so we do not separately use each EU member state to estimate non-discretionary accruals.

1) Cross-sectional Jones Model

Following prior studies (Jones 1991; DeFond & Jiambalvo 1994), discretionary accruals are estimated as the residuals of the cross-sectional Jones model. Under this model, discretionary accruals equal total accruals minus estimated non-discretionary accruals. The estimated non-discretionary accruals of the cross-sectional Jones model are estimated as follows:

$$NDA_{i,t} = a_1(1/Assets_{i,t-1}) + a_2\Delta REV_{i,t} + a_3 PPE_{i,t} \quad (4)$$

where $NDA_{i,t}$ is estimated non-discretionary accruals scaled by lagged total assets for firm i year t; $Assets_{i,t-1}$ is total assets in US dollars[10] for firm i year t-1; $\Delta REV_{i,t}$ is the change in sales scaled by lagged total assets for firm i year t; $PPE_{i,t}$ is the gross amount of properties, plants and equipment scaled by lagged total assets for firm i year t; and a_1, a_2 and a_3 are

discretionary accruals models are excluded from this study. Moreover, Bartov et al. (2001) found that the cross-sectional Jones model and the cross-sectional modified Jones model outperform their time-series counterparts (or the three time-series discretionary accruals models) in detecting earnings management.

[10] Our sample includes 15 EU member states from 2000 to 2007. Before the Euro was circulated on 1 January 2002, each EU member state had its own local currency. Even after 1 January 2002, of our sample countries, Denmark, Sweden and the UK still used their own local currencies. To enhance comparability, this study uses total assets in US dollars to scale the intercept rather than the Euro or local currencies. However, in the other variables of various non-discretionary accruals estimated models, this study uses total assets in local currencies to scale other variables since they are denominated in local currencies.

industry-specific parameters generated using the regression expressed in Equation (5) for each two-digit SIC-year grouping. Consistent with prior studies (e.g., Francis et al. 2005), we require at least 20 observations in each two-digit SIC-year grouping[11].

$$TA_{i,t} = \alpha_1(1/Assets_{i,t-1}) + \alpha_2\Delta REV_{i,t} + \alpha_3 PPE_{i,t} + \varepsilon_{i,t} \quad (5)^{12}$$

where $TA_{i,t}$ is total accruals scaled by lagged total assets for firm i year t, while total accruals equal net income before extraordinary items minus cash flow from operations. α_1, α_2 and α_3 denote the ordinary least square (OLS) estimates of the coefficients in equation. Consistent with prior studies (e.g., Francis et al. 2005), we winsorize the extreme values of the distribution to the 1st and 99th percentiles. The same procedures were performed for the other cross-sectional non-discretionary accruals models.

2) Cross-sectional Modified Jones Model

Dechow et al. (1995) argue that an implicit assumption in the Jones model is that revenues are non-discretionary. If earnings are managed through discretionary revenues, the discretionary accruals estimated from the Jones model will inevitably have measurement errors. Thus, Dechow et al. (1995) add the change in accounts receivables to modify the Jones model so that it may eliminate measurement errors of discretionary accruals when discretion is exercised over revenues. Discretionary accruals of the cross-sectional modified Jones model equal total accruals minus estimated non-discretionary accruals. The estimated non-discretionary accruals of the cross-sectional modified Jones model are estimated as follows:

$$NDA_{i,t} = a_1(1/Assets_{i,t-1}) + a_2(\Delta REV_{i,t} - \Delta REC_{i,t}) + a_3 PPE_{i,t} \quad (6)$$

where $\Delta REC_{i,t}$ is the change in accounts receivable scaled by lagged total assets for firm i year t. The definitions of other variables are the same as for Equation (4). The estimates of the industry-specific parameters a_1, a_2 and a_3 in each two-digit SIC-year grouping are those

[11] This is the same for the other cross-sectional non-discretionary accruals models used in this study. In robustness tests, consistent with Dechow et al. (2003), where we require at least 10 observations in each SIC-year grouping, the results are virtually unchanged.

[12] Kothari et al. (2005) argue that using an intercept is an additional control for heteroskedasticity, and that discretionary accruals are more symmetric when using an intercept. In robustness tests, this study includes an intercept in the discretionary accruals model; the results are virtually unchanged.

obtained from the original Jones model as expressed in Equation (5).

3) Cross-sectional Adapted Jones Model

The modified Jones model's identification of discretionary accruals has encountered some criticism from academics (e.g., Bernard & Skinner 1996; Dechow et al. 2003; Francis et al. 2005). For example, Dechow et al. (2003) argue that the modified Jones model assumes all credit revenues in each period are discretionary and induces a positive correlation between discretionary accruals and current sales growth. Thus, they modify the modified Jones model by including only the unexpected portion of the change in accounts receivables in discretionary accruals. This modification of the modified Jones model is called the adapted Jones model (Dechow et al. 2003). Since discretionary accruals equal total accruals minus estimated non-discretionary accruals, the estimated non-discretionary accruals of the cross-sectional adapted Jones model are estimated as follows[13]:

$$NDA_{i,t} = a_1(1/Assets_{i,t-1}) + a_2((1+k)\Delta REV_{i,t} - \Delta REC_{i,t}) + a_3 PPE_{i,t} \tag{7}$$

where the slope coefficient (k) is estimated from the following regression for each two-digit SIC-year grouping expressed in Equation (8) that captures the expected change in accounts receivables for a given change in sales. The definitions of variables are the same as for Equations (4) and (6).

$$\Delta REC_{i,t} = \alpha + k\Delta REV_{i,t} + \varepsilon_{i,t} \tag{8}$$

The estimates of the industry-specific parameters a_1, a_2 and a_3 in each two-digit SIC-year grouping are those obtained from the original Jones model as expressed in Equation (5).

4) Cross-sectional Lagged Model

Accruals by definition reverse through time and are less persistent than cash flows. However, a certain proportion of accruals is predictable based on the previous year's accruals. Similar to Chambers (1999), based on the adapted Jones model, Dechow et al. (2003) add the lagged value of total accruals (*LagTA*) to the adapted Jones model to capture the predictable

[13] Different from prior studies, Dechow et al. (2003) did not scale the intercept by lagged total assets. This is because they were interested in comparing the explanatory power of four discretionary accruals models (i.e., the modified Jones model, the adapted Jones model, the lagged model, and the forward-looking model) while not estimating non-discretionary accruals. Contrary to Dechow et al. (2003), this study is interested in the estimation of non-discretionary accruals rather than the explanatory power of the models. Consistent with the other non-discretionary accruals models (e.g., the Jones model and the modified Jones model), this study scales the intercept by lagged total assets in the three non-discretionary accruals models that were developed by Dechow et al. (2003).

component, which is called the lagged model. As discretionary accruals equal total accruals minus estimated non-discretionary accruals, the estimated non-discretionary accruals of a cross-sectional lagged model are estimated as follows:

$$NDA_{i,t} = a_1(1/Assets_{i,t-1}) + a_2((1+k)\Delta REV_{i,t} - \Delta REC_{i,t}) + a_3 PPE_{i,t} + a_4 LagTA_{i,t} \tag{9}$$

where $LagTA_{i,t}$ is the lagged value of scaled total accruals for firm i year t. The definitions of other variables are the same as for Equations (4), (6) and (7). The estimates of the industry-specific parameters a_1, a_2, a_3 and a_4 are generated using the following model for each two-digit SIC-year grouping:

$$TA_{i,t} = \alpha_1(1/Assets_{i,t-1}) + \alpha_2 \Delta REV_{i,t} + \alpha_3 PPE_{i,t} + \alpha_4 LagTA_{i,t} + \varepsilon_{i,t} \tag{10}$$

$\alpha_1, \alpha_2, \alpha_3$ and α_4 denote the OLS estimations of the coefficients concerned.

5) Cross-sectional Forward-Looking Model

Dechow et al. (2003) argue that accruals by their nature are designed to smooth the reporting of financial transactions. They added a measure of future sales growth (*GR_REV*) to the lagged model to identify the misclassification aspect of accruals in the Jones model, creating the forward-looking model. Thus, the estimated non-discretionary accruals of the cross-sectional forward-looking model are estimated as follows:

$$\begin{aligned} NDA_{i,t} = {} & a_1(1/Assets_{i,t-1}) + a_2((1+k)\Delta REV_{i,t} - \Delta REC_{i,t}) + a_3 PPE_{i,t} \\ & + a_4 LagTA_{i,t} + a_5 GR\_REV_{i,t} \end{aligned} \tag{11}$$

where $GR\_REV_{i,t}$ is the change in sales from the current year to the next year, scaled by current sales for firm i year t. The definitions of other variables are the same as for Equations (4), (6), (7) and (9). The estimates of the industry-specific parameters a_1, a_2, a_3, a_4 and a_5 are generated using the following model for each two-digit SIC-year grouping:

$$TA_{i,t} = \alpha_1(1/Assets_{i,t-1}) + \alpha_2 \Delta REV_{i,t} + \alpha_3 PPE_{i,t} + \alpha_4 LagTA_{i,t} + \alpha_5 GR\_REV_{i,t} + \varepsilon_{i,t} \tag{12}$$

6) Cross-sectional Modified Jones Model with Book-to-Market Ratio and Cash Flow from Operations

Larcker and Richardson (2004) added the book-to-market ratio (*BM*) and cash flow from operations (*CFO*) to the modified Jones model to mitigate measurement errors associated with discretionary accruals. *BM* controls for expected growth in operations, while *CFO* controls for current operating performance. Larcker and Richardson (2004) noted that their model outperforms the modified Jones model. Since discretionary accruals equal total accruals minus estimated non-discretionary accruals, the estimated non-discretionary accruals of the cross-sectional modified Jones model with book-to-market ratio and cash flow from operations are estimated as follows:

$$NDA_{i,t} = a_1(1/Assets_{i,t-1}) + a_2(\Delta REV_{i,t} - \Delta REC_{i,t}) + a_3 PPE_{i,t} + a_4 BM_{i,t} + a_5 CFO_{i,t} \quad (13)$$

where $BM_{i,t}$ is the book-to-market ratio for firm i year t, while book-to-market ratio equals the book value of common equity to the market value of common equity; and $CFO_{i,t}$ is the cash flow from operations scaled by end of year total assets for firm i year t. The definitions of other variables are the same as for Equations (4) and (6). The estimates of the industry-specific parameters a_1, a_2, a_3, a_4 and a_5 are generated using the following model for each two-digit SIC-year grouping:

$$TA_{i,t} = \alpha_1(1/Assets_{i,t-1}) + \alpha_2 \Delta REV_{i,t} + \alpha_3 PPE_{i,t} + \alpha_4 BM_{i,t} + \alpha_5 CFO_{i,t} + \varepsilon_{i,t} \quad (14)$$

7) Cross-sectional Modified Jones Model with Current-year ROA

Kothari et al. (2005) argued that the accruals of firms that have experienced unusual performance are expected to be systematically nonzero, and thus firm performance is correlated with accruals. Kothari et al. (2005) added current-year ROA and prior-year ROA to the modified Jones model as additional controls for performance and especially extreme performance, respectively. Following Kothari et al. (2005), Jones et al. (2008) used the modified Jones model with ROA to detect the association between discretionary accruals and fraudulent and restated earnings. Thus, the non-discretionary accruals of the cross-sectional modified Jones model with current-year ROA are estimated as follows:

$$NDA_{i,t} = a_1(1/Assets_{i,t-1}) + a_2(\Delta REV_{i,t} - \Delta REC_{i,t}) + a_3 PPE_{i,t} + a_4 ROA_{i,t} \quad (15)$$

where $ROA_{i,t}$ is the return on assets for firm i year t, while the returns on assets equals net income before extraordinary items scaled by lagged total assets. The definitions of other variables are the same as for Equations (4) and (6). The estimates of the industry-specific parameters a_1, a_2, a_3 and a_4 are generated using the following model for each two-digit SIC-year grouping:

$$TA_{i,t} = \alpha_1(1/Assets_{i,t-1}) + \alpha_2\Delta REV_{i,t} + \alpha_3 PPE_{i,t} + \alpha_4 ROA_{i,t} + \varepsilon_{i,t} \quad (16)$$

8) Cross-sectional Modified Jones Model with Prior-year ROA

Discretionary accruals of the cross-sectional modified Jones model with prior-year ROA equal total accruals minus estimated non-discretionary accruals. The estimated non-discretionary accruals of the cross-sectional modified Jones model with prior-year ROA are estimated as follows:

$$NDA_{i,t} = a_1(1/Assets_{i,t-1}) + a_2(\Delta REV_{i,t} - \Delta REC_{i,t}) + a_3 PPE_{i,t} + a_4 ROA_{i,t-1} \quad (17)$$

where $ROA_{i,t-1}$ is the return on assets for firm i year t-1. The definitions of other variables are the same as for Equations (4) and (6). The estimates of the industry-specific parameters a_1, a_2, a_3 and a_4 are generated using the following model for each two-digit SIC-year grouping:

$$TA_{i,t} = \alpha_1(1/Assets_{i,t-1}) + \alpha_2\Delta REV_{i,t} + \alpha_3 PPE_{i,t} + \alpha_4 ROA_{i,t-1} + \varepsilon_{i,t} \quad (18)$$

Accruals Quality

Dechow and Dichev (2002) argued that accruals shift or adjust the recognition of cash flow over time, so that the adjusted numbers (earnings) are a better measure of firm performance. Based on this notion, they developed a new measure of accruals quality, which is based on the past, current, and future cash flow from operations. The original Dechow-Dichev (hereafter DD) model is a firm-level time-series regression model which requires that each firm has at least eight years of data to use in estimating firm-specific parameters. However, since our sample period is from 2000 to 2007, we do not have a long enough period of time-series data to meet this data requirement. Thus, consistent with Francis et al. (2005), this study uses the cross-sectional DD model. The cross-sectional DD model is estimated for each two-digit SIC-year grouping with at least 20 observations in year t as follows[14]:

[14] In robustness tests, consistent with Dechow et al. (2003), we require at least 10 observations in each SIC-year grouping; the results are quantitatively unchanged.

$$TCA_{i,t} = \alpha_{0,i} + \alpha_{1,i} CFO_{i,t-1} + \alpha_{2,i} CFO_{i,t} + \alpha_{3,i} CFO_{i,t+1} + \varepsilon_{i,t} \qquad (19)$$

where $TCA_{i,t}$ is the total current accruals scaled by lagged total assets for firm i year t, while the total current accruals are calculated from the following equation:

$$TCA_{i,t} = (\Delta CA_{i,t} - \Delta CL_{i,t} - \Delta Cash_{i,t} + \Delta STDEBT_{i,t}) / Assets_{i,t-1} \qquad (20)$$

where $\Delta CA_{i,t}$ is the change in current assets for firm i year t, $\Delta CL_{i,t}$ is the change in current liabilities for firm i year t, $\Delta Cash_{i,t}$ is the change in cash for firm i year t, $\Delta STDEBT_{i,t}$ is the change in short-term debt in current liabilities for firm i year t, $Assets_{i,t-1}$ is the total assets for firm i year t-1, and $CFO_{i,t+\tau}$ is the cash flow from operations scaled by lagged total assets for firm i year $t+\tau$ (τ=-1, 0, 1). Consistent with Francis et al. (2005), accruals quality is measured by the metric $AQ_{i,t} = \sigma(\varepsilon_i)_t$, which is the standard deviation of firm i's residuals $\varepsilon_{i,t}$ calculated over years t-4 through t. Larger standard deviations of residuals indicate poorer accruals quality.

In summary, this study calculates earnings smoothing, the magnitude of cross-sectional absolute discretionary accruals and standard deviations of residuals as proxies for earnings management and accruals quality. Based on these measures, we use t-test (the Wilcoxon rank sum test) to examine whether firms engage in less earnings management or have higher accruals quality in the adoption period than they did in the pre-adoption period. That is, less earnings smoothing, a lower magnitude of cross-sectional absolute discretionary accruals or smaller standard deviations of residuals would indicate that firms engage in less earnings management or have higher accruals quality in the adoption period, which will imply a higher accounting quality after IFRS adoption.

4.2.2 Timely Loss Recognition

Prior studies suggest that the timely recognition of large losses is a sign of higher accounting quality (Ball et al. 2000; Lang et al. 2006; Ball & Shivakumar 2005, 2006; Barth et al. 2007, 2008). Barth et al. (2008) found that firms which voluntarily adopt IFRS exhibit a more timely recognition of losses (after controlling for potential incentives of voluntary IFRS adoption). However, as noted above, different from Barth et al. (2008), this study investigates whether firms have a more timely recognition of large losses after IFRS adoption in the EU. Thus, incentives for voluntary IFRS adoption do not exist, since IFRS adoption is compulsory. Based on prior research (e.g., Ball et al. 2000; Ball & Shivakumar 2005, 2006; Barth et al. 2008), this study controls for potential incentives for the timely recognition of large losses without the incentives of voluntary IFRS adoption. More specifically, we run the logistic regression expressed in Equation (21) to investigate whether firms in the 15 EU member states have a more timely recognition of large losses after IFRS adoption:

$$\begin{aligned} LNEG_{i,t} = {} & \alpha_0 + \alpha_1 POST_{i,t} + \beta_1 EMV_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 EISSUE_{i,t} + \beta_4 LEV_{i,t} \\ & + \beta_5 DISSUE_{i,t} + \beta_6 TURN_{i,t} + \beta_7 CFO_{i,t} + \beta_8 AUD_{i,t} + \beta_9 NUMEX_{i,t} \\ & + \beta_{10} XLIST_{i,t} + \beta_{11} CLOSE_{i,t} + \sum_{k=1}^{14} \beta_{k+11} Country_i + \sum_{j=1}^{43} \beta_{j+25} Industry_i + \varepsilon_{i,t} \end{aligned} \qquad (21)$$

where $LNEG_{i,t}$ is an indicator variable that equals one for observations of firms with annual net income scaled by total assets less than -0.20, and zero otherwise for firm i year t. The definitions of other variables are the same as for Equations (1), (2) and (3).

A significant positive coefficient on *POST* (i.e., $\alpha_1 > 0$) reveals that firms recognize large losses in a timely manner more frequently in the adoption period than they did in the pre-adoption period, which indicates higher accounting quality in the adoption period.

4.3 Empirical Models

Besides using t-test (the Wilcoxon rank sum test) for testing the hypothesis, this study constructs the following four multiple regression models to test our hypothesis:

1) IFRS Adoption and Managing Earnings toward Targets

Equation (3) examines whether firms engage in managing earnings toward targets less after IFRS adoption in the EU.

2) IFRS Adoption and Cross-Sectional Absolute Discretionary Accruals

Prior studies (e.g., Becker et al. 1998; Reynolds & Francis 2000; Bartov et al. 2001; Klein 2002; Lang et al. 2003, 2006; Cheng & Warfield 2005; van Tendeloo & Vanstraelen 2005; Wang 2006; Bowen et al. 2008) document that firms' discretionary accruals are affected by factors such as firm size, financial leverage, sales growth, cash flow from operations, auditors, reported negative earnings, and cross-listing in the US. After controlling for these potential factors of discretionary accruals, this study constructs the multiple regression model expressed in Equation (22) to explore the relationship between the effects of IFRS adoption and cross-sectional absolute discretionary accruals:

$$\begin{aligned}\left|DA_{i,t}\right| = {} & \alpha_0 + \alpha_1 POST_{i,t} + \beta_1 SIZE_{i,t} + \beta_2 Leverage_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 CFO_{i,t} \\ & + \beta_5 AUD_{i,t} + \beta_6 LOSS_{i,t} + \beta_7 XLIST_{i,t} + \sum_{k=1}^{14} \beta_{k+7} Country_i + \varepsilon_{i,t}\end{aligned} \tag{22}$$

where $|DA_{i,t}|$ is the magnitude of cross-sectional absolute discretionary accruals for firm i year t. This study uses eight cross-sectional absolute discretionary accruals that are estimated from the eight discretionary accruals models for each two-digit SIC-year grouping as proxies for dependent variables, respectively. That is, $|DA_{i,t}|_{JM}$ is the magnitude of the absolute discretionary accruals estimated by the cross-sectional Jones model for each two-digit SIC-year grouping for firm i year t. $|DA_{i,t}|_{MJM}$ is the magnitude of the absolute discretionary accruals estimated by the cross-sectional modified Jones model for each two-digit SIC-year grouping for firm i year t. $|DA_{i,t}|_{AJM}$ is the magnitude of the absolute discretionary accruals estimated by the cross-sectional adapted Jones model for each two-digit SIC-year grouping for firm i year t. $|DA_{i,t}|_{LJM}$ is the magnitude of the absolute discretionary accruals estimated by the cross-sectional lagged model for each two-digit SIC-year grouping for firm i year t. $|DA_{i,t}|_{FLM}$ is the magnitude of the absolute discretionary accruals estimated by the cross-sectional forward-looking model for each two-digit SIC-year grouping for firm i year t. $|DA_{i,t}|_{MJM+BMCFO}$ is the magnitude of the absolute discretionary accruals estimated by the cross-sectional modified Jones model with book-to-market ratio and cash flow from operations for each two-digit SIC-year grouping for firm i year t. $|DA_{i,t}|_{MJM+CROA}$ is the magnitude of the absolute discretionary accruals estimated by the cross-sectional modified Jones model with current-year ROA for each two-digit SIC-year grouping for firm i year t. $|DA_{i,t}|_{MJM+PROA}$ is the magnitude of the absolute discretionary accruals estimated by the cross-sectional modified Jones model with prior-year ROA for each two-digit SIC-year grouping for firm i year t. $POST_{i,t}$ is an indicator variable that equals one for observations in the adoption period (2005 to 2007), and zero otherwise. $SIZE_{i,t}$ is the natural logarithm of end of year sales in millions of US dollars for firm i year t. $Leverage_{i,t}$ is the end of year total liabilities divided by end of year total assets for firm i year t. $LOSS_{i,t}$ is an indicator variable that equals one for observations of firms with annual net income less than 0, and zero otherwise for firm i year t. The definitions of $GROWTH_{i,t}$, $CFO_{i,t}$, $AUD_{i,t}$, $XLIST_{i,t}$ and *Country* are the same as for Equations (1) and (2).

A significant negative coefficient on $POST_{i,t}$ (i.e., $\alpha_1 < 0$) indicates that firms have lower cross-sectional absolute discretionary accruals in the adoption period than they do in the pre-adoption period. That is, firms engage in less earnings management in the adoption period, which should indicate higher accounting quality in the adoption period.

3) IFRS Adoption and Accruals Quality

Prior studies identify the following five innate factors that affect accruals quality: firm size, the magnitude of cash flow from operations volatility, the magnitude of sales volatility, the length of the operating cycle, and the incidence of reporting negative earnings (Dechow & Dichev 2002; Francis et al. 2005). After controlling for these innate factors of accruals quality, this study constructs the multiple regression model expressed in Equation (23) to explore the association between IFRS adoption and accruals quality:

$$\begin{aligned} AQ_{i,t} &= \alpha_0 + \alpha_1 POST_{i,t} + \beta_1 LnTA_{i,t} + \beta_2 \sigma(CFO)_{i,t} + \beta_3 \sigma(Sales)_{i,t} \\ &\quad + \beta_4 OperCycle_{i,t} + \beta_5 NegEarn_{i,t} + \sum_{k=1}^{14} \beta_{k+5} Country_i + \varepsilon_{i,t} \end{aligned} \tag{23}$$

where $AQ_{i,t}$ is the standard deviation of the residual for firm i year t, calculated over the past five years (i.e., year t-4 through year t), and a firm's residuals are estimated by the cross-sectional DD model for each two-digit SIC-year grouping. Greater *AQ* means a wider deviation of residuals and a lower quality of accruals. $POST_{i,t}$ is an indicator variable that equals one for observations in the adoption period (2005 to 2007), and zero otherwise for firm i year t. *LnTA* is the natural logarithm of end of year total assets in millions of US dollars for firm i year t. $\sigma(CFO)_{i,t}$ is the standard deviation of cash flow from operations for firm i year t, calculated over the past ten years. $\sigma(Sales)_{i,t}$ is the standard deviation of sales for firm i year t, calculated over the past ten years. Consistent with Francis et al. (2005), we require at least five observations in each rolling 10-year window when we calculate $\sigma(CFO)_{i,t}$ and

$\sigma(Sales)_{i,t}$. $OperCycle_{i,t}$ is the natural logarithm of a firm's operating cycle for firm i year t, where the operating cycle equals the sum of turnover days for accounts receivables and inventories. $NegEarn_{i,t}$ is the incidence of negative earnings over the past ten years for firm i year t.

A significant negative coefficient on $POST_{i,t}$ (i.e., $\alpha_1 < 0$) indicates that firms have a lower standard deviation of residuals in the adoption period than they do in the pre-adoption period, which indicates higher accruals quality in the adoption period.

V. EMPIRICAL RESULTS

5.1 Summary Statistics

1) Distribution of Firm-year Observations

Table 1 presents the distribution of firm-year observations. Panel A of Table 1 shows the distribution by country and year, based on the magnitude of cross-sectional absolute discretionary accruals estimated by the cross-sectional Jones model for each two-digit SIC-year grouping[15]. There are 21,955 total firm-year observations in the 15 EU member states from 2000 to 2007. More specifically, there are 12,837 (58.47%) in the pre-adoption period (2000 to 2004) and 9,118 (41.53%) in the adoption period (2005 to 2007). Panel A of Table 1 also shows that the total firm-year observations per country range from 126 observations for Luxembourg to 6,676 (30.41%) observations for the UK. The firm-year observations in France and Germany are 3,689 (16.80%) and 3,290 (14.99%), respectively.

Panel B of Table 1 presents the distribution of firm-year observations by Fama-French (1997) industry classification. It shows that there are 12,040 firm-year observations to calculate earnings smoothing, managing earnings toward targets, and timely loss recognition[16]. Precious metals (Gold) has the smallest number of observations (i.e., 21 or 0.17%), while business services (BusSv) has the largest number (i.e., 1482 or 12.31%).

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[15] Note that the firm-year observations by country and year are different based on different magnitudes of cross-sectional absolute discretionary accruals, and the same as when calculating the accounting quality indicators of earnings smoothing, managing earnings toward targets, and timely loss recognition. We just use the magnitude of cross-sectional absolute discretionary accruals estimated by the cross-sectional Jones model for each two-digit SIC-year grouping as an example.

[16] In order to calculate the accounting quality indicators of earnings smoothing, from Equation (1) and (2) we can see that it requires each firm survives in 2000 to 2007. In other words, Equation (1) and (2) by nature are time-series regression model, which largely reduce the sample size. Thus, the firm-year observations are different based on different accounting quality indicators.

Insert Table 1 here

2) Descriptive Statistics of Test and Control Variables

Table 2 presents descriptive statistics for related variables. Panel A of Table 2 shows the test and control variables on earnings smoothing, managing earnings toward targets, and timely loss recognition. Regarding test variables, there is a significant difference in the change in net incomes (ΔNI) between the pre-adoption period and the adoption period (the mean and median are both significant at the 1% level). The change is significantly larger in the adoption period, which could be a sign of a higher growth in profits. However, the change in cash flow from operations (ΔCFO) is not significantly different. Firms manage earnings toward small positive amounts (*SPOS*) less frequently in the adoption period than they do in the pre-adoption period (the mean and median are both significant at the 1% level), which indicates that firms engage in managing earnings toward targets less during the adoption period. This result is consistent with our hypothesis. However, firms recognized large losses (*LNEG*) in a timely manner less frequently in the adoption period than they did in the pre-adoption period (the mean and median are both significant at the 1% level), which is not consistent with the hypothesis. Regarding control variables, the results show that firms have larger sizes (*EMV*); greater sales growth (*GROWTH*) and debt issues (*DISSUE*); lower equity issues (*EISSUE*), asset turnover rates (*TURN*), cash flow from operations (*CFO*) and shares held closely by insiders (*CLOSE*) in the adoption period than they do in the pre-adoption period. There is no significant difference in financial leverage (*LEV*), Big 4/5 auditors (*AUD*), the number of exchanges listing the firm (*NUMEX*) and cross-listing in the US (*XLIST*) between the pre-adoption period and the adoption period.

Panel B of Table 2 presents the variables used in estimating the magnitude of the cross-sectional absolute discretionary accruals. The results show that total accruals (*TA*), changes in sales (ΔREV), changes in accounts receivables (ΔREC), lagged total accruals (*LagTA*), future growth rates (*GR_REV*), cash flow from operations (*CFO*), current-year ROA (*ROA*) and prior-year ROA (ROA_{t-1}) are all significantly higher in the adoption period than in the pre-adoption period, while lagged total assets (*1/Assets*); gross properties, plants and equipments (*PPE*); and book-to-market ratios (*BM*) are significantly lower in the adoption period than in the pre-adoption period.

Panel C of Table 2 reports the variables used in the calculation of accruals quality. The results show that total current accruals (*TCA*) is significantly higher while future cash flow from operations (CFO_{t+1}) is lower in the adoption period than in the pre-adoption period. There is no significant difference in past cash flow from operations (CFO_{t-1}) and current cash flow from operations (CFO_t) between the adoption period and the pre-adoption period.

Panel D of Table 2 shows the descriptive statistics of the test and control variables for the estimates of cross-sectional absolute discretionary accruals in respect to IFRS adoption. The eight different magnitudes of cross-sectional absolute discretionary accruals ($|DA|$) are all significantly lower in the adoption period than in the pre-adoption period (the mean and median are both significant at the 1% level), which indicates that firms engage in earnings management less during the adoption period. This result is consistent with the hypothesis. Regarding control variables, firms have larger sizes (*SIZE*), lower financial leverage (*Leverage*), Big 4/5 auditors (*AUD*) and negative reported earnings (*LOSS*), higher sales growth (*GROWTH*) and greater cash flow from operations (*CFO*) in the adoption period than in the pre-adoption period. There is no significant difference in cross-listings in the US (*XLIST*) between the adoption period and the pre-adoption period.

Panel E of Table 2 presents the descriptive statistics of the test and control variables of IFRS adoption on accruals quality. It shows that the standard deviation of firms' residuals (*AQ*) is significantly lower in the adoption period than in the pre-adoption period (the mean and median are both significant at the 5% level), which indicates that firms have a higher accruals quality in the adoption period. This result is consistent with the hypothesis. Regarding control variables, firms have smaller sizes (*LnTA*), and higher cash flow from operations volatility ($\sigma(CFO)$) and incidence of negative earnings realizations (*NegEarn*) in the adoption period than in the pre-adoption period. There is no significant difference in sales volatility ($\sigma(Sales)$) and operating cycle length (*OperCyble*) between the adoption period and the pre-adoption period.

Insert Table 2 here

5.2 Univariate Analysis

Table 3 presents a correlation matrix between IFRS adoption and the test (explanatory) and control variables used in our analyses. The upper (lower) triangle reports the Pearson (Spearman) correlation coefficients. Panel A of Table 3 reports the correlation matrix between IFRS adoption and earnings smoothing, managing earnings toward targets, and timely loss recognition. Regarding the change in net incomes (ΔNI), as expected, a statistically significant positive association between ΔCFO and ΔNI is found (p=0.000). *POST* is positively and significantly related to ΔNI (p=0.000), which indicates that the change in net income is significantly larger in the adoption period. Regarding the change in cash flow from operations (ΔCFO), there is no significant relation between *POST* and ΔCFO. Regarding managing earnings toward small positive amounts (*SPOS*), as expected, a statistically significant positive association between *SPOS* and *POST* is found (p=0.003), which indicates that firms engage in managing earnings toward targets less during the adoption period. This result is consistent with the hypothesis. Regarding timely loss recognition (*LNEG*), contrary to the prediction, a statistically significant negative association between *LNEG* and *POST* (p=0.000) is found, which indicates that firms recognize large losses in a timely manner less frequently during the adoption period. This result is not consistent with the hypothesis.

Turning to managing earnings toward targets (*SPOS*) and control variables, we find that firms with higher sales growth (*GROWTH*), asset turnover rates (*TURN*) and cash flow from operations (*CFO*) engage in managing earnings toward targets less, while firms with higher financial leverage (*LEV*) engage in managing earnings toward targets more. We do not find a significant relation between firm size (*EMV*), equity issues (*EISSUE*), debt issues (*DISSUE*), Big 4/5 auditors (*AUD*), number of exchange listings (*NUMEX*), cross-listing in the US (*XLIST*), shares closely held by insiders (*CLOSE*) and *SPOS*.

Regarding timely loss recognition (*LNEG*) and control variables, we find that firms with larger sizes (*EMV*), greater sales growth (*GROWTH*), debt issuing (*DISSUE*), cash flow from operations (*CFO*), and Big 4/5 auditors (*AUD*) are less likely to recognize losses in a timely manner, while firms with higher equity issuing (*EISSUE*) are more likely to do so. We do not find a significant association between financial leverage (*LEV*), asset turnover rates (*TURN*), number of exchange listings (*NUMEX*), cross-listing in the US (*XLIST*), shares closely held by insiders (*CLOSE*) and *LNEG*.

Panel B of Table 3 presents the correlation matrix between IFRS adoption and cross-sectional absolute discretionary accruals. It shows that eight different magnitudes of cross-sectional absolute discretionary accruals (|*DA*|) are highly correlated (i.e., most of the Pearson correlation coefficients are greater than 0.90). As expected, we find that the correlations between the eight different magnitudes of cross-sectional absolute discretionary accruals (|*DA*|) and *POST* are all significantly negative at the 1% level, which indicates that firms engage in earnings management less during the adoption period. These results are consistent with our hypothesis. Regarding cross-sectional absolute discretionary accruals (|*DA*|) and control variables, all |*DA*| are negatively and significantly related to firm size (*SIZE*), cash flow from operations (*CFO*) and Big 4/5 auditors (*AUD*) at the 1% level. |*DA*| are positively and significantly related to financial leverage (*Leverage*) at the 1% or 5% level. |*DA*| are all positively and significantly related to sales growth (*GROWTH*) and negative reported earnings (*LOSS*) at the 1% level. This means that firms with larger size, higher cash flow from operations, and are audited by Big 4/5 auditors engage in earnings management less, while firms with higher financial leverage, sales growth and negative reported earnings engage in more earnings management. A negative relation between |*DA*| and cross-listing in the US (*XLIST*) is found, but it is not statistically significant.

Panel C of Table 3 presents the correlation matrix between IFRS adoption and accruals quality. As expected, we find that the association between the standard deviation of a firm's residuals (*AQ*) and *POST* is significantly negative (p=0.027), which indicates that firms have higher accruals quality in the adoption period. This result is consistent with our hypothesis. Regarding the standard deviation of a firm's residuals (*AQ*) and control variables, as expected, *AQ* is negatively and significantly related to firm size (*LnTA*) at the 1% level. All *AQ* are positively and significantly related to cash flow from operations volatility ($\sigma(CFO)$), sales volatility ($\sigma(Sales)$), the length of operating cycles (*OperCyble*) and the incidence of negative earnings realizations (*NegEarn*) at the 1% level. The results demonstrate that larger firms have higher accruals quality, while firms with higher cash flow from operations volatility and sales volatility, longer operating cycles, and more frequently reported negative earnings have lower accruals quality.

Insert Table 3 here

5.3 Empirical Results

5.3.1 Univariate Results

Table 4 presents the univariate analysis results of IFRS adoption on accounting quality. Panel A of Table 4 shows the univariate results of IFRS adoption and earnings smoothing. Contrary to the prediction, there is a significant decrease in the variability of change in net incomes (ΔNI^*) in the adoption period (the mean and median are both significant at the 1% level), which implies that earnings smoothing increases after IFRS adoption. That is, a lower accounting quality. Consistent with the prediction, when controlling for the variability driven by cash flows from operations, the variability of change in net incomes (ΔNI^*) over the variability of change in cash flow from operations (ΔCFO^*) is larger during the adoption period than in the pre-adoption period—that is, the mean difference is marginally significant at the 10% level (not tabulated). However, the median difference is significantly positive at the 1% level (p-value = -3.21). Overall, the results of two earnings smoothing measures suggest that accounting quality is not improved after IFRS adoption, which is not consistent with our hypothesis.

Panel B of Table 4 provides the univariate results of IFRS adoption and the magnitude of cross-sectional absolute discretionary accruals. Different from prior studies (e.g., van Tendeloo & Vanstraelen 2005), this study applies eight estimated discretionary accruals models that have been widely used in prior studies. As expected, the eight different magnitudes of cross-sectional absolute discretionary accruals are all statistically significantly lower in the adoption period than in the pre-adoption period (the mean and median are both significant at the 1% level), which indicates that firms engage in earnings management less in the adoption period. These results are consistent with the hypothesis.

Panel C of Table 4 reports the univariate results of IFRS adoption and accruals quality. As predicted, the standard deviation of firms' residuals as estimated by the cross-sectional DD model is lower in the adoption period than in the pre-adoption period (the median difference is significant at the 10% level; the mean difference is negative as predicted, but it is not significant), which indicates that firms have higher accruals quality in the adoption period. This result is consistent with the hypothesis.

Insert Table 4 here

5.3.2 Multiple Regression Analysis

In this section, we provide further evidence of the effect of IFRS adoption on accounting quality after controlling for other factors. Following prior studies (Lang et al. 2006; Barth et al. 2007, 2008), in the multiple regression analysis of managing earnings toward targets and timely loss recognition, we report ordinary least squares (OLS) estimation results rather than logistic estimation results since Greene (1993) reports that logistic models are extremely sensitive to the effects of heteroskedasticity. Thus, this study reports OLS coefficient estimates for multiple regression models and t-statistics based on heteroskedasticity-consistent standard errors.

1) IFRS Adoption and Managing Earnings toward Targets

Table 5 presents the OLS regression results of IFRS adoption on managing earnings toward targets. We control for industry and country fixed effects in all models, but for the sake of brevity, the results of industry and country dummies are not reported. After controlling for potential factors of managing earnings toward targets, as expected, we find a significantly negative association between managing earnings toward small positive amounts (*SPOS*) and IFRS adoption (*POST*) in both time-series data ($t=-2.05$, $p<0.05$, two-tailed) and cross-sectional data[17] ($t=-2.21$, $p<0.05$). The results indicate that firms engage in managing earnings toward targets less during the adoption period, which is consistent with our hypothesis.

Regarding control variables, firm size (*EMV*) is significantly negatively associated with S*POS*, suggesting that larger firms engage in managing earnings toward targets less. The association between sales growth (*GROWTH*) and S*POS* is significantly negative at the 10% and 1% level for time-series and cross-sectional data, respectively. The association between financial leverage (*LEV*) and S*POS* is significantly positive, while that between asset turnover rates (*TURN*) and S*POS* is negative, both as predicted. S*POS* is positively and significantly

[17] As noted above, the Equation (1) and (2) that are used to calculate earnings smoothing by nature are time-series regression model. This study uses time-series data to examine the association between IFRS adoption and managing earnings toward targets in order to keep consistent with the data that has been used in the calculation of earnings smoothing. However, the sample size of time-series data is relatively small and the survivorship bias inevitably exists. In order to obtain more generlizable result, this study also reports the result that based on the cross-sectional data, which largely enhances the sample size and avoids the survivorship bias. This methodology is also applied to IFRS adoption and timely loss recognition.

related to debt issuing (*DISSUE*) at the 1% level (time-series data is not significant). S*POS* is negatively and significantly related to cash flow from operations (*CFO*) at the 1% level (cross-sectional data is not significant). S*POS* is positively and significantly related to Big 4/5 auditors (*AUD*) at the 5% level (time-series data is not significant). We do not find a significant relation between equity issues (*EISSUE*), the number of exchange listings (*NUMEX*), cross-listing in the US (*XLIST*) and *SPOS*.

Insert Table 5 here

2) IFRS Adoption and Cross-Sectional Absolute Discretionary Accruals

Table 6 presents the OLS regression results of IFRS adoption on cross-sectional absolute discretionary accruals. We control for country fixed effects in all models, but for the sake of brevity, the results of country dummies are not reported. After controlling for potential factors of discretionary accruals, as expected, we find that eight different magnitudes of cross-sectional absolute discretionary accruals (|*DA*|) and *POST* are all significantly negative at either the 1% or the 5% level, which indicates that firms engage in earnings management less in the adoption period. These results are consistent with the hypothesis.

Regarding control variables, all |*DA*| are negatively and significantly related to firm size (*SIZE*) and cash flow from operations (*CFO*) (with the exception of $|DA|_{LJM}$, $|DA|_{FLM}$ and $|DA|_{MJM+BMCFO}$) at the 1% level, which indicates that firms with larger size and greater cash flow from operations have lower cross-sectional absolute discretionary accruals or less earnings management. All |*DA*| are positively and significantly related to financial leverage (*Leverage*), sales growth (*GROWTH*) and negative reported earnings (*LOSS*) at the 1% level, which indicates that firms with more financial leverage, greater sales growth, and negative reported earnings would have higher cross-sectional absolute discretionary accruals or more earnings management. A negative relation between |*DA*| and Big 4/5 auditors (*AUD*) is found, but it is not statistically significant (with the exception of $|DA|_{MJM+BMCFO}$), suggesting that clients of Big 4/5 auditors have lower cross-sectional absolute discretionary accruals to a certain extent. We do not find a significant relation between |*DA*| and cross-listing in the US (*XLIST*).

Insert Table 6 here

3) IFRS Adoption and Accruals Quality

Table 7 presents the OLS regression results of IFRS adoption on accruals quality. We control for country fixed effects in the model, but for the sake of brevity, the result of country dummies are not reported. After controlling for innate factors of accruals quality, as expected, we find a significantly negative association between the standard deviations of a firm's residuals (*AQ*) and IFRS adoption (*POST*) (t=-6.25, p<0.01). This result indicates that firms have higher accruals quality in the adoption period, which is consistent with our hypothesis. Regarding control variables, as expected, *AQ* is negatively and significantly related to firm size (*LnTA*) at the 1% level. *AQ* are all positively and significantly related to cash flow from operations volatility ($\sigma(CFO)$), sales volatility ($\sigma(Sales)$), the length of operating cycles (*OperCyble*) and the incidence of negative earnings realizations (*NegEarn*) at the 1% level. These results suggest that firms with larger size, lower cash flow from operations volatility and sales volatility, shorter operating cycles and less reported negative earnings have higher accruals quality.

Insert Table 7 here

4) IFRS Adoption and Timely Loss Recognition

Table 8 presents the OLS regression results of IFRS adoption on timely loss recognition. We control for industry and country fixed effects in all models, but for the sake of brevity, the results of industry and country dummies are not reported. After controlling for potential factors of timely loss recognition, contrary to the prediction, we find a significantly negative association between timely loss recognition (*LNEG*) and IFRS adoption (*POST*) in both time-series data (t=-3.06, p<0.01) and cross-sectional data (t=-7.36, p<0.01). The results indicate that firms recognize large losses in a timely manner less frequently during the adoption period, which is not consistent with our hypothesis.

Regarding control variables, firm size (*EMV*) is significantly negatively related to *LNEG*, suggesting that larger firms less frequently recognize large losses in a timely manner. The association between sales growth (*GROWTH*) and *LNEG* is significantly negative at the 5% level (cross-sectional data is not significant). *LNEG* is positively and significantly related to equity issuing (*EISSUE*) at the 5% level (time-series data is not significant). *LNEG* is negatively and significantly related to debt issuing (*DISSUE*) and cash flow from operations

(*CFO*) at the 1% level. The association between the number of exchange listings (*NUMEX*) and *LNEG* is significantly positive, as predicted (cross-sectional data is not significant). We do not find a significant relation between financial leverage (*LEV*), asset turnover rates (*TURN*), Big 4/5 auditors (*AUD*), cross-listing in the US (*XLIST*) and *LNEG*.

Taken as a whole, the empirical results of this study reveal that the majority of indicators of accounting quality improved after IFRS adoption in the 15 EU states. That is, there are fewer incidences of managing earnings towards a target, a lower magnitude of cross-sectional absolute discretionary accruals, and higher accruals quality. However, our study results also indicate that firms engage in more earnings smoothing and recognize large losses in a less timely fashion in the adoption period.

Insert Table 8 here

5.4 Robustness Tests

As noted earlier, consistent with Francis et al. (2005), we require at least 20 observations in each two-digit SIC-year grouping to calculate accounting quality indicators. However, some prior studies relax this requirement, requiring only 10 observations in each two-digit SIC-year grouping (e.g., Dechow et al. 2003). Does this larger sample size affect our results?

Some prior studies argue that using an intercept in various discretionary accruals models is an additional control for heteroskedasticity (e.g., Kothari et al. 2005; Jones et al. 2008). Will the results change when an intercept is included in the discretionary accruals model?

Panel A of Table 1 shows that the firm-year observations in the UK, France and Germany account for 62.20% (i.e., 13,655/21,955) of the total firm-year observations in this study. Will the results change if we include only the UK's, France's and Germany's publicly listed companies?

The pre-adoption period (2000 to 2004) and the adoption period (2005 to 2007) are not symmetric. Will the results change if we use symmetric periods (i.e., 2002 to 2004 vs. 2005 to 2007)?

Some firms voluntarily adopted IFRS or U.S. GAAP to prepare financial statements in the pre-adoption period (2000 to 2004). There were some full IFRS adopters and some partial IFRS adopters (Daske et al. 2007; Kim & Shi 2007). If we exclude these firms, will the empirical results change?

Consistent with Barth et al. (2008), this study includes financial institutions in calculating the accounting quality indicators of earnings smoothing, managing earnings toward targets, and timely loss recognition. Will the results change if we exclude financial institutions?

Due to the fact that data on closely held shares (*CLOSE*) of many firms are not available in the Worldscope dataset, this variable is not included in our main tests. If we include this variable in the regression models, will the results change?

We run a number of robustness tests to answer the above questions. Overall, the results are virtually unchanged. For the sake of brevity, these robustness test results are not presented.

VI. CONCLUDING REMARKS

The unique EU setting provides us with a great opportunity to investigate the relationship between accounting quality and IFRS adoption. Our study generates evidence that the adoption of IFRS has a moderate positive impact on accounting quality. IFRS may reduce earnings management by limiting opportunistic management discretion in determining accounting amounts, but we argue that a change of accounting standards alone does not eliminate earnings management incentives. If firms' management have strong earnings management incentives, they may still opportunistically interpret and implement IFRS to achieve the desired accounting numbers. As a result, changing accounting standards may not enhance accounting quality. Our results support this notion. We find evidence that earnings management still exists in financial reporting after the adoption of IFRS by our sample firms in the EU. An inference of our results to the US context suggests that the replacement of US GAAP with IFRS would not necessarily increase accounting quality.

We recognise that there might be other factors that could influence our results. For example, IFRS are superior to some national standards, but may not be better than other domestic standards in our sample countries. Also, some countries may have harmonized their accounting standards with IFRS before 2005. We did not test these factors directly, which may be a limitation of this study.

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TABLE 1

Distribution of Firm-Year Observations

Panel A: Distribution of Firm-Year Observations by Country and Year

Country	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**Total**
Austria	35	40	41	46	48	55	55	60	380
Belgium	52	53	63	71	68	76	84	76	543
Denmark	80	78	94	103	90	92	86	82	705
Finland	88	96	108	114	113	109	109	105	842
France	397	449	498	513	497	498	472	365	3,689
Germany	263	306	410	434	443	475	489	470	3,290
Greece	24	66	59	68	72	190	197	201	877
Ireland	26	28	31	32	34	39	38	42	270
Italy	111	127	154	154	164	177	182	181	1,250
Luxembourg	10	13	14	18	16	18	18	19	126
Netherlands	126	123	133	134	137	135	127	115	1,030
Portugal	27	32	44	48	44	40	41	36	312
Spain	1	4	11	12	14	87	88	86	303
Sweden	134	149	228	229	237	236	235	214	1,662
United Kingdom	732	814	844	824	844	886	935	797	6,676
Total	2,106	2,378	2,732	2,800	2,821	3,113	3,156	2,849	21,955

Panel B: Distribution of Firm-Year Observations by Fama-French (1997) Industry Classification

Short industry name	**Long industry name**	**Four-digit SIC codes**	**Firm-year observations**	**Percentage of firm-year observations (%)**
Agric	Agriculture	0100-0799, 2048-2048	86	0.71
Food	Food Products	2000-2046, 2050-2063, 2070-2079, 2090-2095, 2098-2099	201	1.67
Soda	Candy and Soda	2064-2068, 2086-2087, 2096-2097	95	0.79
Beer	Alcoholic Beverages	2080-2085	127	1.05
Toys	Recreational Products	0900-0999, 3650-3652, 3732-3732, 3930-3949	87	0.72
Fun	Entertainment	7800-7841, 7900-7999	226	1.88
Books	Printing and Publishing	2700-2749, 2770-2799	224	1.86
Hshld	Consumer Goods	2047-2047, 2391-2392, 2510-2519, 2590-2599, 2840-2844, 3160-3199, 3229-3231, 3260-3260, 3262-3263, 3269-3269, 3630-3639, 3750-3751, 3800-3800, 3860-3879, 3910-3919, 3960-3961, 3991-3991, 3995-3995	309	2.57

Short industry name	Long industry name	Four-digit SIC codes	Firm-year observations	Percentage of firm-year observations (%)
Clths	Apparel	2300-2390, 3020-3021, 3100-3111, 3130-3159, 3965-3965	113	0.94
Hlth	Healthcare	8000-8099	58	0.48
MedEq	Medical Equipment	3693-3693, 3840-3851	191	1.59
Drugs	Pharmaceutical Products	2830-2836	170	1.41
Chems	Chemicals	2800-2829, 2850-2899	278	2.31
Rubbr	Rubber and Plastic Products	3000-3000, 3050-3099	141	1.17
Txtls	Textiles	2200-2295, 2297-2299, 2393-2395, 2397-2399	206	1.71
BldMt	Construction Materials	0800-0899, 2400-2439, 2450-2459, 2490-2499, 2950-2952, 3200-3219, 3240-3259, 3261-3261, 3264-3264, 3270-3299, 3420-3422, 3446-3452, 3490-3499, 3996-3996	407	3.38
Cnstr	Construction	1500-1549, 1600-1699, 1700-1799	455	3.78
Steel	Steel Works, Etc.	3300-3369, 3390-3399	160	1.33
FabPr	Fabricated Products	3400-3400, 3443-3444, 3460-3479	48	0.40
Mach	Machinery	3510-3536, 3540-3569, 3580-3599	606	5.03
ElcEq	Electrical Equipment	3600-3621, 3623-3629, 3640-3646, 3648-3649, 3660-3660, 3691-3692, 3699-3699	159	1.32
Autos	Automobiles and Trucks	2296-2296, 2396-2396, 3010-3011, 3537-3537, 3647-3647, 3694-3694, 3700-3716, 3790-3792, 3799-3799	329	2.73
Aero	Aircraft	3720-3729	69	0.57
Ships	Shipbuilding, Railroad Equipment	3730-3731, 3740-3743	24	0.20
Gold	Precious Metals	1040-1049	21	0.17
Mines	Nonmetallic Mining	1000-1039, 1060-1099, 1400-1499	46	0.38
Enrgy	Petroleum and Natural Gas	1310-1389, 2900-2911, 2990-2999	78	0.65
Util	Utilities	4900-4999	208	1.73
Telem	Telecommunications	4800-4899	171	1.42
PerSv	Personal Services	7020-7021, 7030-7039, 7200-7212, 7215-7299, 7395-7395, 7500-7500, 7520-7549, 7600-7699, 8100-8199, 8200-8299, 8300-8399, 8400-8499, 8600-8699, 8800-8899	69	0.57
BusSv	Business Services	2750-2759, 3993-3993, 7300-7372, 7374-7394, 7397-7397, 7399-7399, 7510-7519, 8700-8748, 8900-8999	1,482	12.31

Short industry name	Long industry name	Four-digit SIC codes	Firm-year observations	Percentage of firm-year observations (%)
Comps	Computers	3570-3579, 3680-3689, 3695-3695, 7373-7373	335	2.78
Chips	Electronic Equipment	3622-3622, 3661-3679, 3810-3810, 3812-3812	395	3.28
LabEq	Measuring and Control Equipment	3811-3811, 3820-3830	139	1.15
Paper	Business Supplies	2520-2549, 2600-2639, 2670-2699, 2760-2761, 3950-3955	246	2.04
Boxes	Shipping Containers	2440-2449, 2640-2659, 3210-3221, 3410-3412	57	0.47
Trans	Transportation	4000-4099, 4100-4199, 4200-4299, 4400-4499, 4500-4599, 4600-4699, 4700-4799	409	3.40
Whlsl	Wholesale	5000-5099, 5100-5199	850	7.06
Rtail	Retail	5200-5299, 5300-5399, 5400-5499, 5500-5599, 5600-5699, 5700-5736, 5900-5999	497	4.13
Meals	Restaurants, Hotel, Motel	5800-5813, 5890-5890, 7000-7019, 7040-7049, 7213-7213	208	1.73
Banks	Banking	6000-6099, 6100-6199	277	2.30
Insur	Insurance	6300-6399, 6400-6411	166	1.38
RlEst	Real Estate	6500-6553	568	4.72
Fin	Trading	6200-6299, 6700-6799	1,049	8.71
Total			12,040	100.00

Notes:

Panel A:

Annual financial statement data of publicly listed firms of the 15 EU member states from 2000 to 2007 are obtained from the Worldscope dataset. The firm-year observations by country and year are based on the magnitude of cross-sectional absolute discretionary accruals that is estimated by the cross-sectional Jones model for each two-digit SIC-year grouping.

Panel B:

The firm observations in each Fama-French (1997) industry classification are based on the following accounting quality metrics: earnings smoothing, managing earnings toward targets, and timely loss recognition, which are from Barth et al. (2008). Consistent with Francis et al. (2005), we require at least 20 observations in each Fama-French (1997) industry classification, which remains 44 Fama-French (1997) industries.

TABLE 2

Descriptive Statistics

Panel A: Variables Used in Tests on Earnings Smoothing, Managing Earnings toward Targets, and Timely Loss Recognition

	Pre-adoption period (n= 7,525)					Adoption period (n= 4,515)				
	Mean	**Median**	**Std Dev**	**Q1**	**Q3**	**Mean**	**Median**	**Std Dev**	**Q1**	**Q3**
Test variables										
Δ*NI*	0.002	0.003	0.093	-0.014	0.019	0.011***	0.008***	0.074	-0.005	0.028
Δ*CFO*	0.005	0.004	0.083	-0.028	0.039	0.005	0.003	0.073	-0.024	0.034
SPOS	0.094	0.000	0.292	0.000	0.000	0.078***	0.000***	0.269	0.000	0.000
LNEG	0.032	0.000	0.177	0.000	0.000	0.020***	0.000***	0.141	0.000	0.000
Control variables										
EMV	5.259	5.160	1.925	3.840	6.527	5.937***	5.865***	1.949	4.534	7.301
GROWTH	11.738	5.557	38.421	-3.114	17.619	12.420	8.762***	27.959	1.714	17.897
EISSUE	0.064	0.000	0.367	0.000	0.008	0.047***	0.000	0.311	0.000	0.009
LEV	2.156	1.328	3.229	0.652	2.367	2.134	1.300	3.405	0.644	2.295
DISSUE	0.140	0.032	0.543	-0.083	0.190	0.176***	0.066***	0.555	-0.050	0.236
TURN	1.017	0.976	0.693	0.496	1.417	0.988**	0.947**	0.667	0.495	1.383
CFO	0.063	0.065	0.088	0.017	0.113	0.059**	0.062**	0.092	0.017	0.104
AUD	0.711	1.000	0.453	0.000	1.000	0.712	1.000	0.453	0.000	1.000
NUMEX	1.304	1.000	0.854	1.000	1.000	1.304	1.000	0.855	1.000	1.000
XLIST	0.008	0.000	0.089	0.000	0.000	0.008	0.000	0.089	0.000	0.000
CLOSE[18]	38.651	36.790	26.030	16.045	59.259	37.478**	34.996**	26.556	14.260	57.200

[18] *CLOSE* data in some firms are not available in the Worldscope. Thus, number observations of *CLOSE* are 6,487 and 3,969 in the pre-adoption and adoption period, respectively.

Panel B: Variables Used in the Calculation of the Magnitude of Cross-Sectional Absolute Discretionary Accruals

	Pre-adoption period						Adoption period					
	N	**Mean**	**Median**	**Std Dev**	**Q1**	**Q3**	**N**	**Mean**	**Median**	**Std Dev**	**Q1**	**Q3**
TA	12,678	-0.059	-0.054	0.118	-0.103	-0.008	9,029	-0.032***	-0.031***	0.109	-0.076	0.012
1/Assets	12,678	0.000	0.000	0.000	0.000	0.000	9,029	0.000	0.000***	0.000	0.000	0.000
ΔREV	12,678	0.101	0.050	0.313	-0.036	0.182	9,029	0.150***	0.086***	0.315	0.004	0.230
ΔREC	12,678	0.021	0.005	0.102	-0.022	0.044	9,029	0.043***	0.019***	0.109	-0.006	0.065
PPE	12,678	0.567	0.464	0.437	0.210	0.833	9,029	0.554**	0.438***	0.445	0.190	0.822
LagTA	11,726	-0.080	-0.053	1.038	-0.105	-0.004	8,525	-0.201	-0.039***	27.467	-0.086	0.007
GR_REV[a]	10,382	0.072	0.039	0.282	-0.050	0.146	4,921	0.148***	0.096***	0.342	0.008	0.216
BM	11,545	0.741	0.603	0.571	0.350	1.002	8,257	0.577***	0.466***	0.448	0.287	0.750
CFO	11,545	0.054	0.070	0.125	0.010	0.123	8,257	0.057**	0.070	0.125	0.010	0.125
ROA	12,238	-0.019	0.025	0.180	-0.027	0.061	8,833	0.012***	0.038***	0.143	0.002	0.073
ROA_{t-1}	12,291	-0.017	0.026	0.180	-0.024	0.063	8,824	0.006***	0.033***	0.152	-0.002	0.069

Panel C: Variables Used in the Calculation of Accruals Quality

	Pre-adoption period (n= 5,484)					Adoption period (n= 3,266)				
	Mean	**Median**	**Std Dev**	**Q1**	**Q3**	**Mean**	**Median**	**Std Dev**	**Q1**	**Q3**
TCA	0.003	0.000	0.090	-0.035	0.037	0.012***	0.009***	0.112	-0.034	0.054
CFO_{t-1}	0.079	0.082	0.091	0.035	0.126	0.078	0.082	0.101	0.033	0.132
CFO_t	0.078	0.082	0.081	0.037	0.124	0.076	0.080	0.092	0.030	0.126
CFO_{t+1}	0.080	0.083	0.090	0.038	0.127	0.069***	0.073***	0.105	0.024	0.123

Panel D: Variables Used in the Multiple Regression of IFRS Adoption on Cross-sectional Absolute Discretionary Accruals

	Pre-adoption period						Adoption period					
	N	Mean	Median	Std Dev	Q1	Q3	N	Mean	Median	Std Dev	Q1	Q3
Test variables												
$\lvert DA\rvert_{JM}$	12,837	0.077	0.048	0.090	0.021	0.098	9,118	0.070***	0.044***	0.081	0.019	0.088
$\lvert DA\rvert_{MJM}$	12,678	0.077	0.048	0.089	0.021	0.096	9,029	0.069***	0.043***	0.080	0.019	0.088
$\lvert DA\rvert_{AJM}$	12,678	0.077	0.048	0.089	0.021	0.097	9,029	0.069***	0.044***	0.080	0.019	0.087
$\lvert DA\rvert_{LJM}$	11,325	0.072	0.046	0.080	0.020	0.091	8,154	0.067***	0.044***	0.074	0.019	0.085
$\lvert DA\rvert_{FLM}$ [b]	10,382	0.069	0.046	0.076	0.020	0.089	4,921	0.064***	0.043***	0.069	0.019	0.082
$\lvert DA\rvert_{MJM+BMCFO}$	11,545	0.082	0.058	0.085	0.027	0.106	8,257	0.071***	0.048***	0.075	0.022	0.093
$\lvert DA\rvert_{MJM+CROA}$	12,238	0.074	0.048	0.084	0.021	0.093	8,833	0.068***	0.044***	0.078	0.019	0.087
$\lvert DA\rvert_{MJM+PROA}$	12,291	0.076	0.048	0.088	0.021	0.095	8,824	0.068***	0.044***	0.078	0.019	0.087
POST	12,837	0.000	0.000	0.000	0.000	0.000	9,118	1.000	1.000	0.000	1.000	1.000
Control variables												
SIZE	12,837	5.047	4.961	2.030	3.619	6.443	9,118	5.162***	5.117***	2.066	3.712	6.587
Leverage	12,837	0.561	0.571	0.221	0.414	0.702	9,118	0.548***	0.559***	0.216	0.399	0.692
GROWTH	12,837	13.595	5.899	38.727	-4.010	20.020	9,118	19.362***	10.301***	40.184	1.817	23.959
CFO	12,837	0.053	0.069	0.136	0.007	0.124	9,118	0.056*	0.069	0.142	0.008	0.126
AUD	12,837	0.618	1.000	0.486	0.000	1.000	9,118	0.564***	1.000***	0.496	0.000	1.000
LOSS	12,837	0.325	0.000	0.468	0.000	1.000	9,118	0.238***	0.000***	0.426	0.000	0.000
XLIST	12,837	0.008	0.000	0.088	0.000	0.000	9,118	0.009	0.000	0.093	0.000	0.000

Panel E: Variables Used in the Multiple Regression of IFRS Adoption on Accruals Quality

	Non-adoption period (n= 5,496)					Adoption period (n= 3,189)				
	Mean	**Median**	**Std Dev**	**Q1**	**Q3**	**Mean**	**Median**	**Std Dev**	**Q1**	**Q3**
Test variables										
AQ	0.085	0.065	0.070	0.042	0.104	0.082**	0.062**	0.066	0.041	0.100
POST	0.000	0.000	0.000	0.000	0.000	1.000	1.000	0.000	1.000	1.000
Control variables										
LnTA	5.870	5.745	2.083	4.318	7.297	5.730***	5.555***	2.046	4.243	7.066
$\sigma(CFO)$	0.082	0.064	0.065	0.046	0.093	0.095***	0.064	0.093	0.042	0.109
$\sigma(Sales)$	0.327	0.232	0.297	0.136	0.412	0.337	0.234	0.311	0.135	0.421
OperCycle	4.922	4.942	0.542	4.593	5.237	4.910	4.913	0.551	4.583	5.228
NegEarn	0.251	0.000	0.434	0.000	1.000	0.197***	0.000***	0.397	0.000	0.000

Notes:

*, **, *** Significant at 0.10, 0.05 and 0.01 level respectively (two-tailed). t-test (Wilcoxon rank sum test) is used to test mean (median) difference between pre-adoption period (2000 to 2004) and adoption period (2005 to 2007, to 2006 for accruals quality). Q1 is 25 percentile, Q3 is 75 percentile. N is firm-year observations. All variables are winsorized at the 1^{st} and 99^{th} percentile except for indicator variables.

Panel A:

ΔNI is the change in net income before extraordinary items scaled by end of year total assets. ΔCFO is the change in cash flow from operations scaled by end of year total assets. *SPOS* is an indicator variable that equals one for observations with annual net income scaled by total assets between 0 and 0.01, and zero otherwise. *LNEG* is an indicator variable that equals one for observations with annual net income scaled by total assets less than -0.20, and zero otherwise. *EMV* is the natural logarithm of end of year market value of equity in millions of U.S. dollars. *GROWTH* is the annual percentage change in sales. *EISSUE* is the annual percentage change in common stock. *LEV* is the end of year total liabilities divided by end of year equity book value. *DISSUE* is the annual percentage change in total liabilities. *TURN* is the sales divided by end of year total assets. *CFO* is the annual net cash flow from operations scaled by end of year total assets. *AUD* is an indicator variable that equals one if the firm's auditor is from Big 4/5 auditors and zero otherwise. *NUMEX* is the number of exchanges on which a firm's stock is listed. *XLIST* is an indicator variable that equals one if the firm is listed on any U.S. stock exchange, and zero otherwise. *CLOSE* is the percentage of closely held shares as reported by the Worldscope.

Panel B:

TA is the total accruals scaled by lagged total assets, where total accruals equal net income before extraordinary items minus cash flow from operations. *1/Assets* is the reciprocal of lagged total assets in U.S. dollars. ΔREV is the change in sales scaled by lagged total assets. ΔREC is the change in accounts receivables scaled by lagged total assets. *PPE* is gross properties, plants and equipments scaled by lagged total assets. *LagTA* is the lagged value of scaled total accruals. *GR_REV* is the change in sales from current year to next year scaled by current sales. *BM* is the book value of common equity divided by the market value of common equity. *CFO* is the cash flows from operations scaled by lagged total assets. *ROA* is net income before extraordinary items scaled by lagged total assets. ROA_{t-1} is the lagged value of ROA. The descriptive statistics of *TA*, *1/Assets*, ΔREV , ΔREC and *PPE* are based on the cross-sectional modified Jones model. The descriptive statistics of *LagTA* is based on the cross-sectional lagged model. The descriptive statistics of *GR_REV* is based on the cross-sectional forward-looking model. The descriptive statistics of *BM* and *CFO* are based on the cross-sectional modified Jones model with book-to-market ratio and cash flows from operations. The descriptive statistics of *ROA* is based on the cross-sectional modified Jones model with current-year ROA. The descriptive statistics of ROA_{t-1} is based on the cross-sectional modified Jones model with prior-year ROA.

Panel C:

TCA is the total current accruals scaled by lagged total assets, where total current accrual = Δtotal current assets - Δtotal current liabilities - Δcash + Δshort-term debt. CFO_{t-1}, CFO_t and CFO_{t+1} are the cash flows from operations in year $t+\tau$ (τ = -1, 0, 1) scaled by total assets in year $t+\tau-1$, respectively.

Panel D:

The values of |*DA*| are the magnitudes of absolute discretionary accruals that are derived from the 8 estimation models as explained in Section IV. *POST* is an indicator variable that equals one for observations in the adoption period (2005 to 2007), and zero otherwise. *SIZE* is the natural logarithm of end of year sales in millions of U.S. dollars. *Leverage* is the end of year total liabilities divided by end of year total assets. *LOSS* is an indicator variable that equals one for observations with annual net income less than 0, and zero otherwise. *GROWTH*, *CFO*, *AUD*, and *XLIST* are as defined before. The descriptive statistics of test variable (i.e., *POST*) and control variables (i.e., *SIZE*, *Leverage*, *GROWTH*, *CFO*, *AUD*, *LOSS* and *XLIST*) are based on the magnitude of absolute discretionary accruals that are estimated by the cross-sectional Jones model for each two-digit SIC-year grouping.

Panel E:

AQ is the standard deviation of firm's residuals, calculated over the past five years, where firm's residuals are estimated by the cross-sectional DD model for each two-digit SIC-year grouping. *POST* is an indicator variable that equals one for observations in the adoption period, and zero otherwise. *LnTA* is the natural logarithm of end of year total assets in millions of U.S. dollars. $\sigma(CFO)$ is the standard deviation of firm's cash flows from operations, calculated over the past ten years. $\sigma(Sales)$ is the standard deviation of firm's sales, calculated over the past ten years. Consistent with Francis et al. (2005), we require at least five observations in each rolling 10-year windows to calculate $\sigma(CFO)$ and $\sigma(Sales)$.*OperCycle* is the natural logarithm of firm's operating cycle, where operating cycle equals the sum of turnover days for accounts receivables and inventories. *NegEarn* is the incidence of negative earnings over the past ten years.

[a] The period of *GR_REV* is from year 2000 to 2006.

[b] The period of cross-sectional forward-looking model is from year 2000 to 2006.

TABLE 3

Correlations Coefficients

Panel A: Correlations Coefficients among IFRS Adoption and Earnings Smoothing, Managing Earnings toward Targets, and Timely Loss Recognition (N= 12,040 [a])

	ΔNI	*ΔCFO*	***SPOS***	***LNEG***	***POST***	*EMV*	*GROWTH*	*EISSUE*	*LEV*	*DISSUE*	*TURN*	*CFO*	*AUD*	*NUMEX*	*XLIST*	*CLOSE*
ΔNI	1.000	0.233**	-0.013	-0.306**	0.047**	0.027**	0.079**	0.005	-0.025**	-0.026**	0.034**	0.111**	0.006	-0.001	0.002	0.003
		(0.000)	(0.151)	(0.000)	(0.000)	(0.003)	(0.000)	(0.554)	(0.006)	(0.004)	(0.000)	(0.000)	(0.507)	(0.953)	(0.847)	(0.739)
ΔCFO	0.263**	1.000	-0.017	-0.056**	0.001	0.012	0.101**	0.012	-0.011	0.031**	0.035**	0.431**	0.001	0.000	-0.001	0.010
	(0.000)		(0.067)	(0.000)	(0.945)	(0.193)	(0.000)	(0.170)	(0.241)	(0.001)	(0.000)	(0.000)	(0.890)	(0.983)	(0.905)	(0.286)
SPOS	-0.087**	-0.022*	1.000	-0.053**	**-0.027****	0.008	-0.015	0.008	0.294**	0.013	-0.141**	-0.089**	0.007	0.014	-0.008	0.005
	(0.000)	(0.015)		(0.000)	**(0.003)**	(0.397)	(0.092)	(0.392)	(0.000)	(0.145)	(0.000)	(0.000)	(0.465)	(0.126)	(0.369)	(0.637)
LNEG	-0.157**	-0.043**	-0.053**	1.000	**-0.036****	-0.158**	-0.036**	0.033**	-0.012	-0.033**	0.004	-0.322**	-0.039**	-0.013	0.002	-0.015
	(0.000)	(0.000)	(0.000)		**(0.000)**	(0.000)	(0.000)	(0.000)	(0.197)	(0.000)	(0.632)	(0.000)	(0.000)	(0.161)	(0.839)	(0.119)
POST	0.106**	0.000	**-0.027****	**-0.036****	1.000	0.167**	0.009	-0.023*	-0.003	0.032**	-0.021*	-0.023*	0.001	0.000	0.000	-0.022*
	(0.000)	(0.960)	**(0.003)**	**(0.000)**		(0.000)	(0.297)	(0.012)	(0.720)	(0.000)	(0.021)	(0.012)	(0.897)	(1.000)	(1.000)	(0.026)
EMV	0.062**	0.029**	0.003	-0.156**	0.164**	1.000	0.061**	0.027**	0.169**	0.046**	-0.192**	0.154**	0.378**	0.224**	0.074**	-0.223**
	(0.000)	(0.002)	(0.741)	(0.000)	(0.000)		(0.000)	(0.003)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GROWTH	0.249**	0.166**	-0.038**	-0.112**	0.103**	0.143**	1.000	0.142**	0.002	0.405**	-0.034**	-0.027**	0.000	-0.021*	-0.004	-0.002
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		(0.000)	(0.866)	(0.000)	(0.000)	(0.004)	(0.999)	(0.021)	(0.688)	(0.867)
EISSUE	0.057**	0.028**	-0.033**	0.033**	0.015	0.103**	0.210**	1.000	-0.004	0.139**	-0.020*	-0.042**	-0.008	-0.016	0.007	-0.011
	(0.000)	(0.002)	(0.000)	(0.000)	(0.103)	(0.000)	(0.000)		(0.691)	(0.000)	(0.032)	(0.000)	(0.398)	(0.086)	(0.465)	(0.267)
LEV	-0.021*	0.003	0.105**	-0.042**	-0.014	0.151**	0.044**	0.090**	1.000	0.024**	-0.069**	-0.070**	0.057**	0.048**	-0.018*	0.047**
	(0.022)	(0.737)	(0.000)	(0.000)	(0.121)	(0.000)	(0.000)	(0.000)		(0.007)	(0.000)	(0.000)	(0.000)	(0.000)	(0.046)	(0.000)
DISSUE	0.012	0.020*	-0.008	-0.082**	0.074**	0.115**	0.443**	0.143**	0.128**	1.000	-0.108**	-0.049**	-0.013	-0.012	-0.002	-0.012
	(0.192)	(0.032)	(0.369)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.160)	(0.171)	(0.807)	(0.214)

	ΔNI	*ΔCFO*	*SPOS*	*LNEG*	*POST*	*EMV*	*GROWTH*	*EISSUE*	*LEV*	*DISSUE*	*TURN*	*CFO*	*AUD*	*NUMEX*	*XLIST*	*CLOSE*
TURN	0.091**	0.042**	-0.152**	0.001	-0.019*	-0.208**	0.003	0.052**	0.218**	-0.078**	1.000	0.247**	-0.054**	-0.001	-0.027**	0.117**
	(0.000)	(0.000)	(0.000)	(0.885)	(0.032)	(0.000)	(0.732)	(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.939)	(0.003)	(0.000)
CFO	0.190**	0.444**	-0.147**	-0.179**	-0.022*	0.144**	0.047**	-0.007	0.008	-0.057**	0.328**	1.000	0.067**	0.024**	0.005	0.053**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.017)	(0.000)	(0.000)	(0.458)	(0.398)	(0.000)	(0.000)		(0.000)	(0.009)	(0.561)	(0.000)
AUD	0.004	0.003	0.007	-0.039**	0.001	0.385**	0.017	0.049**	0.073**	0.013	-0.062**	0.061**	1.000	0.055**	0.053**	-0.179**
	(0.657)	(0.701)	(0.465)	(0.000)	(0.897)	(0.000)	(0.060)	(0.000)	(0.000)	(0.138)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
NUMEX	0.002	0.006	0.018*	-0.004	0.000	0.163**	-0.025**	-0.017	0.102**	-0.020*	0.021*	0.039**	0.034**	1.000	0.151**	0.035**
	(0.840)	(0.498)	(0.042)	(0.677)	(0.958)	(0.000)	(0.007)	(0.062)	(0.000)	(0.024)	(0.018)	(0.000)	(0.000)		(0.000)	(0.000)
XLIST	0.004	0.002	-0.008	0.002	0.000	0.066**	-0.002	-0.005	-0.018	0.000	-0.030**	0.009	0.053**	0.148**	1.000	-0.061**
	(0.661)	(0.864)	(0.369)	(0.839)	(1.000)	(0.000)	(0.815)	(0.551)	(0.052)	(0.966)	(0.001)	(0.336)	(0.000)	(0.000)		(0.000)
CLOSE	0.011	0.020*	0.000	-0.015	-0.024*	-0.245**	-0.025**	-0.108**	0.134**	-0.024*	0.144**	0.068**	-0.183**	0.087**	-0.063**	1.000
	(0.258)	(0.039)	(0.986)	(0.115)	(0.012)	(0.000)	(0.009)	(0.000)	(0.000)	(0.015)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

Panel B: Correlations Coefficients among IFRS Adoption and Cross-sectional Absolute Discretionary Accruals (N= 21,955 [b])

	$\|DA\|_{JM}$	$\|DA\|_{MJM}$	$\|DA\|_{AJM}$	$\|DA\|_{LJM}$	$\|DA\|_{FLM}$	$\|DA\|_{MJM+BMCFO}$	$\|DA\|_{MJM+CROA}$	$\|DA\|_{MJM+PROA}$	***POST***	*SIZE*	*Leverage*	*GROWTH*	*CFO*	*AUD*	*LOSS*	*XLIST*
$\|DA\|_{JM}$	1.000	0.994**	0.995**	0.966**	0.949**	0.918**	0.964**	0.979**	**-0.042****	-0.269**	0.021**	0.110**	-0.214**	-0.115**	0.251**	-0.010
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	**(0.000)**	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.130)
$\|DA\|_{MJM}$	0.982**	1.000	0.999**	0.970**	0.954**	0.920**	0.972**	0.986**	**-0.043****	-0.267**	0.013	0.113**	-0.223**	-0.114**	0.248**	-0.010*
	(0.000)		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	**(0.000)**	(0.000)	(0.054)	(0.000)	(0.000)	(0.000)	(0.000)	(0.150)
$\|DA\|_{AJM}$	0.985**	0.996**	1.000	0.970**	0.953**	0.920**	0.969**	0.984**	**-0.042****	-0.266**	0.014*	0.113**	-0.219**	-0.113**	0.247**	-0.010
	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	**(0.000)**	(0.000)	(0.040)	(0.000)	(0.000)	(0.000)	(0.000)	(0.141)
$\|DA\|_{LJM}$	0.899**	0.909**	0.908**	1.000	0.984**	0.922**	0.953**	0.963**	**-0.032****	-0.252**	0.022**	0.068**	-0.176**	-0.110**	0.266**	-0.007
	(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)	(0.000)	**(0.000)**	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.325)
$\|DA\|_{FLM}$	0.864**	0.874**	0.873**	0.957**	1.000	0.904**	0.942**	0.949**	**-0.032****	-0.245**	0.026**	0.068**	-0.160**	-0.105**	0.277**	-0.011
	(0.000)	(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)	**(0.000)**	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.193)

	$\|DA\|_{JM}$	$\|DA\|_{MJM}$	$\|DA\|_{AJM}$	$\|DA\|_{LJM}$	$\|DA\|_{FLM}$	$\|DA\|_{MJM+BMCFO}$	$\|DA\|_{MJM+CROA}$	$\|DA\|_{MJM+PROA}$	***POST***	*SIZE*	*Leverage*	*GROWTH*	*CFO*	*AUD*	*LOSS*	*XLIST*
$\|DA\|_{MJM+BMCFO}$	0.756**	0.758**	0.759**	0.781**	0.755**	1.000	0.892**	0.913**	**-0.070****	-0.222**	0.009	0.100**	-0.171**	-0.092**	0.259**	-0.011
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	**(0.000)**	(0.000)	(0.227)	(0.000)	(0.000)	(0.000)	(0.000)	(0.111)
$\|DA\|_{MJM+CROA}$	0.898**	0.918**	0.910**	0.862**	0.844**	0.706**	1.000	0.980**	**-0.037****	-0.270**	0.008	0.114**	-0.230**	-0.118**	0.263**	-0.011
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		(0.000)	**(0.000)**	(0.000)	(0.218)	(0.000)	(0.000)	(0.000)	(0.000)	(0.115)
$\|DA\|_{MJM+PROA}$	0.940**	0.959**	0.953**	0.888**	0.860**	0.743**	0.940**	1.000	**-0.042****	-0.268**	0.011	0.109**	-0.223**	-0.116**	0.251**	-0.013
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		**(0.000)**	(0.000)	(0.095)	(0.000)	(0.000)	(0.000)	(0.000)	(0.064)
POST	**-0.039****	**-0.042****	**-0.041****	**-0.028****	**-0.029****	**-0.079****	**-0.036****	**-0.040****	1.000	0.028**	-0.030**	0.072**	0.011	-0.053**	-0.094**	0.005
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**		(0.000)	(0.000)	(0.000)	(0.096)	(0.000)	(0.000)	(0.478)
SIZE	-0.266**	-0.265**	-0.263**	-0.241**	-0.233**	-0.186**	-0.264**	-0.264**	0.029**	1.000	0.311**	-0.121**	0.342**	0.421**	-0.334**	0.045**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	-0.003	-0.007	-0.005	0.007	0.012	0.013	-0.010	-0.012	-0.028**	0.329**	1.000	-0.101**	0.013	0.030**	0.052**	0.000
	(0.700)	(0.314)	(0.466)	(0.333)	(0.125)	(0.069)	(0.139)	(0.084)	(0.000)	(0.000)		(0.000)	(0.061)	(0.000)	(0.000)	(0.958)
GROWTH	0.057**	0.059**	0.061**	0.027**	0.022**	0.045**	0.048**	0.050**	0.133**	-0.013	-0.071**	1.000	-0.083**	-0.021**	-0.020**	0.007
	(0.000)	(0.000)	(0.000)	(0.000)	(0.006)	(0.000)	(0.000)	(0.000)	(0.000)	(0.063)	(0.000)		(0.000)	(0.002)	(0.004)	(0.288)
CFO	-0.148**	-0.154**	-0.151**	-0.103**	-0.088**	-0.018**	-0.169**	-0.154**	0.010	0.284**	-0.049**	0.108**	1.000	0.132**	-0.478**	0.026**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.010)	(0.000)	(0.000)	(0.131)	(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
AUD	-0.111**	-0.113**	-0.112**	-0.099**	-0.093**	-0.082**	-0.112**	-0.111**	-0.053**	0.429**	0.039**	0.015*	0.145**	1.000	-0.110**	0.061**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.030)	(0.000)		(0.000)	(0.000)
LOSS	0.226**	0.225**	0.224**	0.234**	0.242**	0.222**	0.230**	0.223**	-0.094**	-0.328**	0.044**	-0.187**	-0.488**	-0.110**	1.000	-0.021**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		(0.002)
XLIST	-0.009	-0.008	-0.008	-0.005	-0.008	-0.011	-0.007	-0.009	0.005	0.048**	0.000	0.010	0.028**	0.061**	-0.021**	1.000
	(0.184)	(0.224)	(0.221)	(0.501)	(0.350)	(0.131)	(0.297)	(0.216)	(0.478)	(0.000)	(0.949)	(0.133)	(0.000)	(0.000)	(0.002)	

Panel C: Correlations Coefficients among IFRS Adoption and Accruals Quality (N= 8,685)

	AQ	*POST*	*LnTA*	$\sigma(CFO)$	$\sigma(Sales)$	*OperCycle*	*NegEarn*
AQ	1.000	**-0.024***	-0.196**	0.315**	0.263**	0.071**	0.165**
		(0.027)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
POST	**-0.026***	1.000	-0.033**	0.086**	0.016	-0.011	-0.063**
	(0.014)		(0.002)	(0.000)	(0.137)	(0.311)	(0.000)
LnTA	-0.213**	-0.035**	1.000	-0.262**	-0.223**	-0.026*	-0.208**
	(0.000)	(0.001)		(0.000)	(0.000)	(0.015)	(0.000)
$\sigma(CFO)$	0.388**	0.014	-0.390**	1.000	0.321**	-0.008	0.147**
	(0.000)	(0.197)	(0.000)		(0.000)	(0.448)	(0.000)
$\sigma(Sales)$	0.291**	0.006	-0.241**	0.407**	1.000	-0.186**	0.112**
	(0.000)	(0.553)	(0.000)	(0.000)		(0.000)	(0.000)
OperCycle	0.080**	-0.015	-0.039**	-0.031**	-0.190**	1.000	0.071**
	(0.000)	(0.172)	(0.000)	(0.004)	(0.000)		(0.000)
NegEarn	0.171**	-0.063**	-0.211**	0.185**	0.115**	0.073**	1.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

Notes:

1. *, ** Correlation is significant at 0.05 and 0.01 level, respectively (two-tailed). p-values are in parentheses. Pearson (Spearman) correlation coefficients in the upper (lower) triangle.
2. All variables are as defined before.

[a] The number observations of *CLOSE* is 10,456 since some firms' *CLOSE* data are not available in the Worldscope dataset.

[b] The number observations of $|DA|_{JM}$, $|DA|_{MJM}$, $|DA|_{AJM}$, $|DA|_{LJM}$, $|DA|_{FLM}$, $|DA|_{MJM+BMCFO}$, $|DA|_{MJM+CROA}$ and $|DA|_{MJM+PROA}$ are 21,955; 21,707; 21,707; 19,479; 15,303; 19,802; 21,071; and 21,115; respectively. The number observations of test variable (i.e., *POST*) and control variables (i.e., *SIZE*, *Leverage*, *GROWTH*, *CFO*, *AUD*, *LOSS* and *XLIST*) are all 21,955.

TABLE 4

Univariate Results of IFRS Adoption on Accounting Quality

Panel A: IFRS Adoption and Earnings Smoothing

Measure	Prediction	Observations		Mean (Median) of Earnings Smoothing		Mean (Median) Difference	t test (Wilcoxon rank sum test)
		Pre-	Post-	Pre-	Post-		
Variability of ΔNI^*	Post>Pre	1,505	1,505	0.0100 (0.0010)	0.0064 (0.0006)	-0.0036 (-0.0004)	-3.44^{***} (-5.42^{***})
Variability of ΔNI^* over ΔCFO^*	Post>Pre	1,505	1,505	4.8248 (0.5871)	25.2116 (0.4531)	20.3868 (-0.1340)	1.39 (-3.21^{***})

Panel B: IFRS Adoption and Cross-Sectional Absolute Discretionary Accruals

Measure	Prediction	Observations		Mean (Median) of $\lvert DA\rvert$		Mean (Median) Difference	t test (Wilcoxon rank sum test)
		Pre-	Post-	Pre-	Post-		
$\lvert DA\rvert_{JM}$	Post<Pre	13,916	10,043	0.0826 (0.0501)	0.0755 (0.0458)	-0.0071 (-0.0043)	-5.82^{***} (-5.72^{***})
$\lvert DA\rvert_{MJM}$	Post<Pre	13,736	9,939	0.0821 (0.0502)	0.0749 (0.0456)	-0.0072 (-0.0046)	-5.88^{***} (-5.93^{***})
$\lvert DA\rvert_{AJM}$	Post<Pre	13,736	9,939	0.0821 (0.0502)	0.0750 (0.0459)	-0.0071 (-0.0043)	-5.82^{***} (-5.80^{***})
$\lvert DA\rvert_{LJM}$	Post<Pre	12,199	8,963	0.0760 (0.0479)	0.0718 (0.0453)	-0.0042 (-0.0026)	-3.63^{***} (-3.49^{***})
$\lvert DA\rvert_{FLM}$ [a]	Post<Pre	11,141	5,351	0.0733 (0.0471)	0.0689 (0.0446)	-0.0044 (-0.0025)	-3.31^{***} (-2.99^{***})
$\lvert DA\rvert_{MJM+BMCFO}$	Post<Pre	12,491	9,081	0.0866 (0.0590)	0.0756 (0.0497)	-0.0110 (-0.0093)	-9.23^{***} (-10.81^{***})
$\lvert DA\rvert_{MJM+CROA}$	Post<Pre	13,243	9,686	0.0798 (0.0493)	0.0735 (0.0456)	-0.0063 (-0.0037)	-5.28^{***} (-5.14^{***})
$\lvert DA\rvert_{MJM+PROA}$	Post<Pre	13,281	9,684	0.0812 (0.0497)	0.0741 (0.0457)	-0.0071 (-0.0040)	-5.80^{***} (-5.60^{***})

Panel C: IFRS Adoption and Accruals Quality

Measure	Prediction	Observations		Mean (Median) of AQ		Mean (Median) Difference	t test (Wilcoxon rank sum test)
		Pre	Post	Pre	Post		
AQ_{DD}	Post<Pre	6,304	3,950	0.0893 (0.0673)	0.0874 (0.0658)	-0.0019 (-0.0015)	-1.24 (-1.80^{*})

Notes:

1. *, **, *** Significant at 0.10, 0.05 and 0.01 level respectively (two-tailed). t-test (Wilcoxon rank sum test) is used to test mean (median) difference between pre-adoption period (2000 to 2004) and adoption period (2005 to 2007, to 2006 for accruals quality).
2. ΔNI^* (ΔCFO^*) is defined as the variance of residuals from a regression of ΔNI (ΔCFO) on control variables. The variability of ΔNI^* over ΔCFO^* is the ratio of the variability of ΔNI^* divided by the variability of ΔCFO^*.

ΔNI , ΔCFO , and AQ are as defined before. The regressions are formally expressed in Equations (1) and (2).

3. The magnitudes of absolute discretionary accruals ($|DA|$) are derived from the 8 estimation models as explained in Section IV.

[a] The period of cross-sectional forward-looking model is from year 2000 to 2006.

TABLE 5

Regression Results of IFRS Adoption on Managing Earnings toward Targets

$$SPOS_{i,t} = \alpha_0 + \alpha_1 POST_{i,t} + \beta_1 EMV_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 EISSUE_{i,t} + \beta_4 LEV_{i,t} + \beta_5 DISSUE_{i,t} + \beta_6 TURN_{i,t}$$
$$+ \beta_7 CFO_{i,t} + \beta_8 AUD_{i,t} + \beta_9 NUMEX_{i,t} + \beta_{10} XLIST_{i,t} + \sum_{k=1}^{14} \beta_{k+10} Country_i + \sum_{j=1}^{43} \beta_{j+24} Industry_i + \varepsilon_{k,t} \quad (3)$$

	Predicted Sign	Time-series Data	Cross-sectional Data
Intercept	?	0.2929^{***}	0.1850^{***}
		(7.41)	(8.11)
POST	**-**	**-0.0112^{**}**	**-0.0066^{**}**
		(-2.21)	**(-2.05)**
EMV	-	-0.0085^{***}	-0.0046^{***}
		(-5.46)	(-4.81)
GROWTH	-	-0.0002^{*}	-0.0001^{***}
		(-1.93)	(-2.81)
EISSUE	-	0.0109	0.0017
		(1.31)	(0.76)
LEV	+	0.0202^{***}	0.0134^{***}
		(14.71)	(19.69)
DISSUE	+	0.0047	0.0065^{***}
		(0.67)	(2.79)
TURN	-	-0.0194^{***}	-0.0238^{***}
		(-4.23)	(-9.71)
CFO	-	-0.0745^{***}	0.0118
		(-3.23)	(1.46)
AUD	-	0.0083	0.0087^{**}
		(1.35)	(2.34)
NUMEX	-	0.0039	0.0045
		(0.94)	(1.53)
XLIST	-	0.0264	-0.0075
		(0.95)	(-0.45)
Country Fixed Effects	?	Yes	Yes
Industry Fixed Effects	?	Yes	Yes
R^2		0.1390	0.1034
F Value		18.54^{***}	27.04^{***}
N		12,040	31,392

Notes:

1. *, **, *** Significant at 0.10, 0.05 and 0.01 level, respectively (two-tailed). The table reports OLS coefficient estimates and t-statistics based on heteroskedasticity-consistent standard errors (in parentheses).

2. *SPOS* is an indicator variable that equals one for observations with annual net income scaled by total assets between 0 and 0.01, and zero otherwise. All other variables are as defined before.

TABLE 6

Regression Results of IFRS Adoption on Cross-Sectional Absolute Discretionary Accruals

$$\left|DA_{i,t}\right| = \alpha_0 + \alpha_1 POST_{i,t} + \beta_1 SIZE_{i,t} + \beta_2 Leverage_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 CFO_{i,t} + \beta_5 AUD_{i,t} + \beta_6 LOSS_{i,t} + \beta_7 XLIST_{i,t} + \sum_{k=1}^{14} \beta_{k+7} Country_i + \varepsilon_{i,t} \quad (22)$$

	Predicted Sign	Dependent Variable: Cross-Sectional Absolute Discretionary Accruals ($\|DA\|$)							
		$\|DA\|_{JM}$	$\|DA\|_{MJM}$	$\|DA\|_{AJM}$	$\|DA\|_{LJM}$	$\|DA\|_{FLM}$	$\|DA\|_{MJM+BMCFO}$	$\|DA\|_{MJM+CROA}$	$\|DA\|_{MJM+PROA}$
Intercept	?	0.0875***	0.0887***	0.0883***	0.0783***	0.0731***	0.0867***	0.0885***	0.0907***
		(20.46)	(20.68)	(20.59)	(19.50)	(16.89)	(20.66)	(20.11)	(19.94)
POST	**-**	**-0.0045*****	**-0.0049*****	**-0.0048*****	**-0.0022****	**-0.0030****	**-0.0085*****	**-0.0040*****	**-0.0050*****
		(-4.08)	**(-4.38)**	**(-4.32)**	**(-2.03)**	**(-2.52)**	**(-7.64)**	**(-3.75)**	**(-4.50)**
SIZE	-	-0.0088***	-0.0085***	-0.0085***	-0.0078***	-0.0075***	-0.0065***	-0.0080***	-0.0085***
		(-24.41)	(-23.45)	(-23.47)	(-22.18)	(-20.33)	(-17.87)	(-23.27)	(-23.44)
Leverage	+	0.0379***	0.0348***	0.0351***	0.0336***	0.0310***	0.0313***	0.0327***	0.0344***
		(10.79)	(9.88)	(9.98)	(9.68)	(8.33)	(8.90)	(9.58)	(9.71)
GROWTH	+	0.0002***	0.0002***	0.0002***	0.0002***	0.0002***	0.0002***	0.0002***	0.0002***
		(9.42)	(9.36)	(9.41)	(7.99)	(8.30)	(9.32)	(9.46)	(9.04)
CFO	-	-0.0414***	-0.0509***	-0.0474***	-0.0109	-0.0005	-0.0105	-0.0494***	-0.0507***
		(-5.05)	(-6.09)	(-5.69)	(-1.28)	(-0.06)	(-1.18)	(-5.93)	(-5.97)
AUD	-	-0.0018	-0.0020	-0.0019	-0.0018	-0.0007	-0.0020	-0.0023*	-0.0020
		(-1.37)	(-1.52)	(-1.40)	(-1.34)	(-0.52)	(-1.48)	(-1.77)	(-1.48)
LOSS	+	0.0260***	0.0246***	0.0250***	0.0326***	0.0357***	0.0338***	0.0271***	0.0252***
		(13.25)	(12.44)	(12.65)	(17.08)	(17.57)	(17.07)	(13.95)	(12.74)
XLIST	-	0.0015	0.0019	0.0016	0.0033	0.0000	-0.0026	0.0003	-0.0012
		(0.29)	(0.36)	(0.31)	(0.64)	(0.01)	(-0.48)	(0.07)	(-0.25)
Country Fixed Effects	?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2		0.1262	0.1248	0.1236	0.1194	0.1252	0.1079	0.1314	0.1259
F Value		88.45***	85.72***	84.93***	76.74***	64.68***	67.57***	88.30***	82.68***
N		21,955	21,707	21,707	19,479	15,303	19,802	21,071	21,115

Notes:

1. *, **, *** Significant at 0.10, 0.05 and 0.01 level, respectively (two-tailed). The table reports OLS coefficient estimates and t-statistics based on heteroskedasticity-consistent standard errors (in parentheses).
2. All variables are as defined before.

TABLE 7

Regression Results of IFRS Adoption on Accruals Quality

$$AQ_{i,t} = \alpha_0 + \alpha_1 POST_{i,t} + \beta_1 LnTA_{i,t} + \beta_2 \sigma(CFO)_{i,t} + \beta_3 \sigma(Sales)_{i,t} + \beta_4 OperCycle_{i,t}$$
$$+ \beta_5 NegEarn_{i,t} + \sum_{k=1}^{14} \beta_{k+5} Country_i + \varepsilon_{k,t} \qquad (23)$$

	Predicted Sign	Coefficients estimates	t-statistics
Intercept	?	0.0096	1.12
POST	**-**	**-0.0086*****	**-6.25**
LnTA	-	-0.0030***	-8.26
$\sigma(CFO)$	+	0.2725***	16.22
$\sigma(Sales)$	+	0.0338***	9.82
OperCycle	+	0.0127***	9.06
NegEarn	+	0.0126***	6.91
Country Fixed Effects	?	Yes	
R^2		0.1892	
F Value		57.74***	
N		8,685	

Notes:

1. *, **, *** Significant at 0.10, 0.05 and 0.01 level, respectively (two-tailed). The table reports OLS coefficient estimates and t-statistics based on heteroskedasticity-consistent standard errors.

2. All variables are as defined before.

TABLE 8

Regression Results of IFRS Adoption on Timely Loss Recognition

$$LNEG_{i,t} = \alpha_0 + \alpha_1 POST_{i,t} + \beta_1 EMV_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 EISSUE_{i,t} + \beta_4 LEV_{i,t} + \beta_5 DISSUE_{i,t} + \beta_6 TURN_{i,t} + \beta_7 CFO_{i,t} + \beta_8 AUD_{i,t} + \beta_9 NUMEX_{i,t} + \beta_{10} XLIST_{i,t} + \sum_{k=i}^{14} \beta_{k+10} Country_i + \sum_{j=i}^{43} \beta_{j+24} Industry_i + \varepsilon_{k,t} \quad (21)$$

	Predicted Sign	Time-series Data	Cross-sectional Data
Intercept	?	0.0757***	0.1614***
		(7.56)	(13.13)
POST	+	**-0.0085*** **	**-0.0199*** **
		(-3.06)	**(-7.36)**
EMV	-	-0.0081***	-0.0157***
		(-8.64)	(-18.61)
GROWTH	-	-0.0002**	-0.0000
		(-2.05)	(-0.02)
EISSUE	-	0.0104**	0.0010
		(1.99)	(0.41)
LEV	-	0.0004	-0.0005
		(0.58)	(-1.02)
DISSUE	-	-0.0110***	-0.0061***
		(-2.96)	(-2.74)
TURN	-	-0.0025	-0.0022
		(-0.71)	(-0.76)
CFO	-	-0.5985***	-0.9370***
		(-15.91)	(-58.69)
AUD	+	0.0044	0.0010
		(1.15)	(0.30)
NUMEX	+	0.0010	0.0052***
		(0.79)	(3.56)
XLIST	+	0.0043	0.0023
		(0.24)	(0.16)
Country Fixed Effects	?	Yes	Yes
Industry Fixed Effects	?	Yes	Yes
R^2		0.1577	0.3171
F Value		6.50***	92.96***
N		12,040	31,392

Notes:

1. *, **, *** Significant at 0.10, 0.05 and 0.01 level, respectively (two-tailed). The table reports OLS coefficient estimates and t-statistics based on heteroskedasticity-consistent standard errors (in parentheses).
2. All variables are as defined before.