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# Do accounting standards matter? An exploratory analysis of earnings management before and after IFRS adoption

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### ABSTRACT

In this paper, we analyze the effect of the mandatory introduction of IFRS standards on earnings quality, and more precisely on earnings management. We concentrate on three IFRS first-time adopter countries, namely Australia, France, and the UK. We find that the pervasiveness of earnings management did not decline after the introduction of IFRS, and in fact increased in France. Our findings confirm that sharing rules is not a sufficient condition to create a common business language, and that management incentives and national institutional factors play an important role in framing financial reporting characteristics. We suggest that the IASB, the SEC and the European Commission should now devote their efforts to harmonizing incentives and institutional factors rather than harmonizing accounting standards.

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## 1. Introduction

With the globalization of international financial markets, the idea of adopting a common language for financial reporting to develop international comparability has become widespread. Of all the possible ways of implementing a single financial reporting language, adoption of International Financial Reporting Standards (from now on IFRS, which include old and revised IAS) was the approach selected by Europe and many other countries. More than 100 countries have agreed to require or allow adoption of IFRS, or have established timelines for the adoption of IFRS. In recent years, Brazil, Canada, China, and India have all committed to formal timelines for adoption of IFRS, and Japan has made 2011 its target for convergence to IFRS.<sup>1</sup> In November 2007, the US Securities and Exchange Commission

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<sup>1</sup> "Prepared statement of Gerrit Zalm, Chairman of the International Accounting Standards Committee Foundation, before the Economic and Monetary Affairs Committee of the European Parliament", 8 April 2008 <[http://www.iasb.org/NR/rdonlyres/A318265C-10E4-4051-A7D1-DCC9E4D763C5/0/Prepared\\_statement\\_Gerrit\\_Zalm.pdf](http://www.iasb.org/NR/rdonlyres/A318265C-10E4-4051-A7D1-DCC9E4D763C5/0/Prepared_statement_Gerrit_Zalm.pdf)>.

(SEC) also agreed to eliminate its reconciliation requirement, with immediate effect, for non-US companies using IFRS as prepared by the IASB. The SEC is even giving serious consideration to a proposal to permit US companies to use IFRS (Street and Linthicum, 2007).

Those in favor of implementing IFRS argued that a shared set of standards would make it easier to compare the financial performance of companies across different countries. This would enhance the effectiveness of competition for international funds and make international capital markets more efficient, leading to a lower cost of capital for firms.

These expected benefits are based on the premise that mandating the use of IFRS increases transparency and improves the quality of financial reporting. However, there is evidence that accounting standards play only a limited role in determining observed reporting quality. The application of accounting standards involves considerable judgment and the use of private information, and as a result, IFRS (like any other set of accounting standards) provide managers with substantial discretion. How far this discretion is used depends on firm-specific characteristics (reporting incentives and operating characteristics) (Burgstahler et al., 2006), and national legal institutions (e.g., Ball et al., 2000, 2003).

In this article, we analyze whether the mandatory introduction of IFRS standards had an impact on earnings quality, and more precisely on earnings management. This paper makes two contributions to the literature. First, we concentrate on firms in countries in which early adoption of IFRS was not possible before the transition date. Past literature has studied the economic consequences of IFRS adoption (e.g., Leuz and Verrecchia, 2000; Barth et al., 2008) but the papers concerned analyzed firms that voluntarily adopted IFRS in jurisdictions where such a step was possible (e.g., Germany, Switzerland). By nature therefore, these studies suffer from a sample selection bias, as only firms which saw an advantage in this accounting change would make it (see Leuz and Verrecchia, 2000). This selection bias could potentially cause overestimation of the expected benefits of the transition to IFRS, which are inferred solely from studying firms that found it in their interest to adopt IFRS before their application was mandatory. The compulsory nature of the change across all public firms in our own sample removes any sample selection bias. Second, most of the past literature has concentrated on the economic consequences of adopting IFRS. For instance, Leuz and Verrecchia (2000) analyze the effect of IFRS adoption on trading volumes. Daske et al. (2007b) study the effects of IFRS adoption on market liquidity, cost of equity capital and Tobin's  $q$ . In this paper, we concentrate on the effect of mandatory IFRS adoption on earnings management. This is a more direct measure of the effect (if any) of IFRS adoption on financial reporting quality.

We concentrate on three countries, namely Australia, France, and the UK. We select these three countries because they are IFRS first-time adopters – early adoption of IFRS (prior to 2005) was not possible in any of them – and between them cover a variety of institutional and geographical environments. France and the UK are two European Union countries governed by EU regulation 1606/2002, which made application of IFRS mandatory from 2005 for listed companies (European Union, 2002). However, they represent two different traditions: the continental code law tradition (France) and the Anglo-American common law tradition (the UK) (La Porta et al., 1998; Nobes and Parker, 2006). Australia is a “common law” country whose Financial Reporting Council (FRC) proposed in July 2002 to replace Australian national GAAP with International Accounting Standards by 1st January 2005, and this proposal was made final in 2004.<sup>2</sup> In other words, Australia followed a timeline close to Europe.

We analyze the distribution of earnings to discover whether companies in these three countries (Australia, France and the UK) have managed their earnings to avoid losses any less after the implementation of IFRS than in the pre-2005 period. Consistent with Burgstahler and Dichev (1997) and Degeorge et al. (1999), we analyze irregularities in distributions as an indication of earnings management.

We find that after the transition to IFRS, the pervasiveness of earnings management increased in France and remained stable in the UK and in Australia. Taken together, these findings suggest that the switch to IFRS was not a major vector of improvement in terms of earnings quality.

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<sup>2</sup> Source: <www.frc.gov.au>.

Our paper is subject to some caveats. First, our findings may be dependent on our proxy for earnings management: the desire to avoid losses. However, the use of other metrics (such as the discretionary accruals model) is problematic, because adoption of IFRS is too recent to provide enough data for researchers. Second, it is likely that the effects of IFRS adoption in terms of earnings management will not be visible for a while. It may take several years before financial analysts and investors can effectively compare financial statements of firms from different countries.

In the next section we review the roles of incentives, standards and institutional factors in explaining earnings quality. Section 3 describes the sample selection process and our research design. Section 4 presents our data analysis and results, and we report our conclusions in Section 5.

## 2. Roles of incentives, standards, and institutional factors in explaining earnings quality/earnings management

As the world's economies have become increasingly interlinked, many countries are trying to harmonize their accounting standards, and even to adopt a common set of reporting standards. Under the lead of the International Accounting Standards Board (IASB), more than 100 countries have either implemented International Financial Reporting Standards (IFRS) or plan to do so.<sup>3</sup> The US Securities and Exchange Commission (SEC) announced that it would promote international compatibility by allowing foreign companies to access US capital markets while reporting under IFRS (SEC, 2007).

In the European Union, companies were obliged to prepare their consolidated accounts in conformity with IFRS if, at their balance sheet date for financial years starting on or after 1st January 2005, their securities were admitted to trading on a regulated market of any EU Member State (European Union, 2002). A similar rule applies in Australia.<sup>4</sup>

Fig. 1 depicts the transition process from local GAAP to IFRS in Europe and Australia. Firms published their first IFRS financial statements for 2005 at the beginning of 2006 if their year-end date is in December (if not, then the first IFRS accounts were published later, according to the year-end date). The last financial statements under local GAAP (for the year 2004) were released in early 2005. Together with the 2005 financial statements, an IFRS version of the 2004 figures was disclosed.

The actual benefits of mandatory adoption of new standards across countries are a subject of debate among academics and practitioners. There are arguments that such adoption of IFRS brings about a significant improvement in accounting quality, but there are also arguments to the contrary.

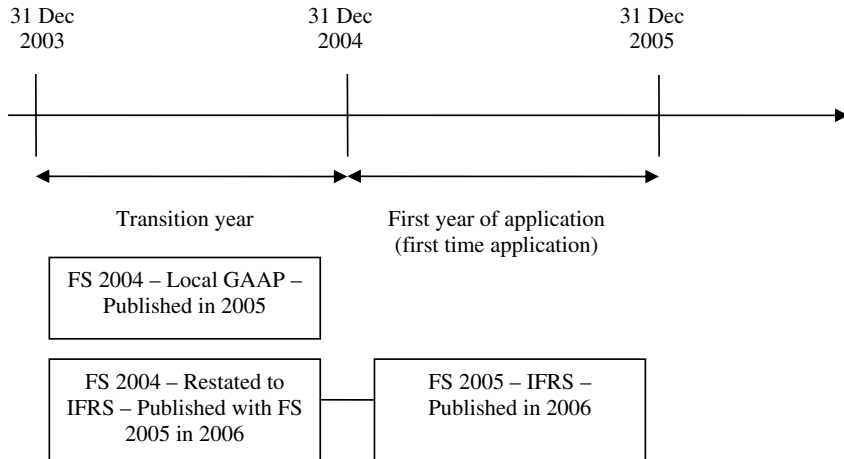
Arguments suggesting that mandatory adoption of IFRS reporting leads to significant benefits in terms of accounting quality often start from the premise that IFRS reporting increases transparency and improves the comparability of financial reporting. The European Commission, for instance, provides the following reasons for mandating one set of accounting rules, IFRS, across the entire EU (European Union, 2002):

- (1) The establishment of a single set of internationally accepted high quality financial reporting standards (compared to the many different local standards in force). The key target of this harmonization is firms listed on financial markets.
- (2) To contribute "to the efficient and cost-effective functioning of the capital market". The Commission's goal is to protect investors, by maintaining (or increasing) confidence in the financial markets, which would then reduce the cost of capital for firms in the EU.
- (3) To increase the overall global competitiveness of firms within the EU and thereby improve the EU economy.

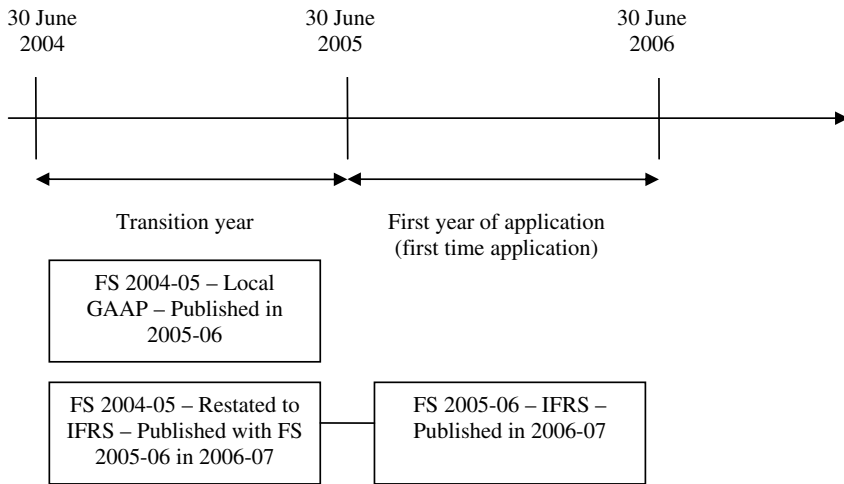
<sup>3</sup> "Prepared statement of Gerrit Zalm, Chairman of the International Accounting Standards Committee Foundation, before the Economic and Monetary Affairs Committee of the European Parliament", 8 April 2008 <[http://www.iasb.org/NR/rdonlyres/A318265C-10E4-4051-A7D1-DCC9E4D763C5/0/Prepared\\_statement\\_Gerrit\\_Zalm.pdf](http://www.iasb.org/NR/rdonlyres/A318265C-10E4-4051-A7D1-DCC9E4D763C5/0/Prepared_statement_Gerrit_Zalm.pdf)>.

<sup>4</sup> In July 2002, the Australian Financial Reporting Council (FRC) proposed that Australia replace its national GAAP with International Accounting Standards by 1st January 2005 (source: <[www.iasplus.com](http://www.iasplus.com)>). In 2004, the FRC agreed to make final its decision regarding the adoption of international accounting standards by Australia from 1st January 2005 (source: <[www.frc.gov.au](http://www.frc.gov.au)>).

Transition and first application  
 Example 1: Year-end = 31 December



Example 2: Year-end = 30 June



FS = Financial Statements

Fig. 1. Transition and first application.

The first argument generally put forward is the “transparency” argument: IFRS reduce the amount of reporting discretion relative to many local GAAP and, in particular, push firms to improve their financial reporting. Consistent with this argument, *Ewert and Wagenhofer (2005)* show that tightening the accounting standards can reduce the level of earnings management and improve reporting quality. However, reducing the amount of reporting discretion can in fact make it harder for firms to convey information through their financial statements (e.g., *Watts and Zimmerman, 1986*), and furthermore regional differences in economies may not be adequately reflected in a common set of

standards. Therefore, a single set of standards might not accommodate the differences in national institutional features (Ball et al., 2003; Ball, 2006), which caused divergent accounting systems to arise in the first place (Ali and Hwang, 2000; Ding et al., 2007).

The “comparability argument” is founded on the assumption that IFRS reporting makes it less costly for investors to compare firms across markets and countries (e.g., Armstrong et al., 2007; Covrig et al., 2007). Thus, even if the quality of corporate reporting *per se* does not improve, it is possible that financial information will become more useful to investors. For instance, a common set of accounting standards could help investors to differentiate between lower and higher quality firms, which in turn could reduce information asymmetries among investors and/or lower estimation risk.

In the same vein, Barth et al. (1999) also suggest that the cost of a country’s investors becoming accounting experts for another country is reduced when the GAAP for the two countries become more similar. Adopting IFRS can improve earnings quality through monitoring by investors, whose cost of acquiring expertise is reduced. Adopting IFRS reduces the cost of comparing firms across borders. It also reduces the cost to the investor of evaluating the quality of financial reports between two firms. The ease of comparison puts pressure on managers to reduce earnings management. When adopted in several countries, common standards may also lower the cost to analysts of monitoring and evaluating the performance of firms across countries (Ball, 2006). Moreover, accounting diversity could be a barrier to cross-border investment (Bradshaw et al., 2004). The global movement towards IFRS reporting may then facilitate cross-border investment and the integration of capital markets (Covrig et al., 2007). Making foreign investment easier could also improve the liquidity of the capital markets and enlarge firms’ investor base, which in turn could improve risk-sharing and lower the cost of capital (e.g., Merton, 1987).

However, from an economic perspective, there are reasons to be skeptical about the premise that mandating the use of IFRS is sufficient in itself to make corporate reporting more informative or more comparable. The evidence from several recent studies points to a limited role for accounting standards in determining observed reporting quality, considering instead the importance of firms’ reporting incentives (e.g., Ball et al., 2000, 2003; Leuz, 2003; Burgstahler et al., 2006). The underlying argument is that the application of accounting standards involves considerable judgment and the use of private information. As a result, IFRS (like any other set of accounting standards) provide firms with substantial discretion. How far this discretion is used depends on firm-specific characteristics (reporting incentives and operating characteristics), and countries’ legal institutions.

This “reporting incentives” argument casts doubt on whether simply changing standards will make the reported numbers more comparable across firms or improve firms’ reporting behavior. Firms that oppose the switch to IFRS or move towards greater transparency are unlikely to make material changes to their reporting policies (e.g., Ball, 2006; Daske et al., 2007a). Even when the standards mandate superior accounting practices (that is, more disclosures or disclosure of estimates), it is not clear whether or not firms disclose figures that are genuinely more informative. Even with common standards, observed reporting behavior is expected to differ across firms as long as firms have different reporting incentives (Leuz and Oberholzer-Gee, 2006). Ball et al. (2003) find, on a sample of firms from four East Asian countries, that the incentives faced by managers and auditors in issuing financial statements have greater influence than accounting standards, in spite of their standards being derived from high-quality accounting standards (US and UK GAAP and IFRS).

Countries’ institutional structures play an important role in explaining accounting quality after IFRS adoption. However, the role of institutional factors is unclear. On the one hand, strict enforcement regimes and institutional structures provide strong incentives for high-quality financial reports after the introduction of IFRS reporting. Leuz et al. (2003) find evidence consistent with strong shareholder protection limiting an insider’s ability to acquire private information, leading to a reduced incentive for management to mask firm performance. Lang et al. (2006) note that despite the use of the same accounting standards, financial statements of cross-listed (European/other) and US firms are not comparable and earnings management is more pervasive in non-US firms than in US-based companies. As noted by the American Accounting Association, “cross-country institutional differences will likely result in differences in the implementation of any single set of standards. Thus, IFRS may be a high-quality set of reporting standards (pre-implementation) but the resulting, published financial-statement

information could be of low quality given inconsistent cross-border implementation practices” (Financial Reporting Policy Committee, 2007). On the other hand, countries with better reporting practices (that is, with stricter enforcement regimes and institutional structures) before the introduction of IFRS should experience smaller accounting quality effects. This argument is based on the presumption that the change in accounting standards alone improves firms’ reporting practices, and ignores institutional reasons why firms in these countries have better reporting quality to begin with.

The net effect of adopting IFRS on accounting quality is therefore uncertain. The transparency and comparability arguments suggest that accounting quality should improve. The existence of other explanatory factors (particularly incentives and institutional factors), on the other hand, suggests that the influence of a mandatory transition to IFRS is negligible, or even negative, although recent empirical studies analyzing the transition from local GAAP to IFRS across countries provide evidence in support of the harmonization of accounting standards across countries and in support of the introduction of higher-quality financial standards. Barth et al. (2008) examine accounting quality before and after the introduction of IFRS for a sample of 327 firms (1896 observations) that voluntarily adopted IAS between 1994 and 2003. They find evidence of lower earnings management, higher value relevance and more timely recognition of losses after the introduction of IFRS, compared to the pre-transition local GAAP accounting. Their results are consistent with higher accounting quality after the IFRS introduction across countries. Daske et al. (2007b) examine the economic consequences of IFRS adoption for a sample of 3800 first-time voluntary adopters from 26 countries. They analyze the effects on market liquidity, cost of equity capital and Tobin’s *q*. They find that market liquidity and equity valuations increase around the time of the introduction of IFRS. Armstrong et al. (2007) identify 16 events between 2002 and 2005 that may change the likelihood of the adoption of IFRS. They find that stock market reaction is significantly positive (negative) in response to the events that increased (decreased) the likelihood of the adoption, and the reaction is stronger for firms that do not cross-list in the US. Taken together, these studies suggest that at least for early adopters, firms benefit from IFRS adoption. Our prediction is that accounting quality should increase after the mandatory IFRS adoption.

### 3. Research design and sample

#### 3.1. Research design

Following McNichols (2000) and Stolowy and Breton (2004), we classify the research design for studies of earnings management in three categories: those that use discretionary accruals (e.g., DeAngelo, 1986; Jones, 1991; Dechow et al., 1995), those that use specific accruals (e.g., McNichols et al., 1988), and those that study statistical properties of earnings to identify thresholds (e.g., Burgstahler and Dichev, 1997; Degeorge et al., 1999; Glaum et al., 2004).

Given constraints on data availability, and consequently the difficulties of implementing the methods based on accruals, in this paper we apply the third methodology and analyze the distribution of earnings in three countries, Australia, France and the UK. We want to discover whether companies managed their earnings to avoid losses any less after the implementation of IFRS.<sup>5</sup> As Glaum et al. (2004) remind readers, threshold-oriented earnings management studies (Burgstahler and Dichev, 1997; Degeorge et al., 1999) analyze the distributions of reported earnings and find that the frequencies of small losses are unusually low, whereas the frequencies of small profits are extraordinarily high. Following these studies, we examine earnings distributions for discontinuities around thresholds before and after IFRS implementation. “Such irregularities in distributions indicate that companies avoid reporting net income below thresholds by managing it upward. Without earnings management, we would expect the distribution to be relatively smooth around thresholds” (Glaum et al., 2004).

We test the “loss avoidance threshold” by analyzing the distribution of income before extraordinary items. Following Leuz et al. (2003), we scale accounting variables by lagged total asset<sup>6</sup> and

<sup>5</sup> Earnings management studies based on earnings thresholds usually analyze firms’ propensity to avoid losses, decreases in earnings and earnings’ forecasts. Given the exploratory nature of this paper and the lack of data, we focus on the first threshold: loss avoidance.

<sup>6</sup> Our robustness checks include the scaling of accounting variables by net sales, as in Glaum et al. (2004).

classify a firm-year observation as a small profit if income before extraordinary items<sup>7</sup> (scaled by lagged total assets) is in the range  $[0, 0.01]$ . A firm-year observation is classified as a small loss if income before extraordinary items (scaled by lagged total assets) is in the range  $[-0.01, 0]$ .

Various ratios can be used to measure discontinuities in distributions (Glaum et al., 2004, p. 51–52). Given the exploratory nature of this paper, we use one ratio: the ratio of small reported profits to small reported losses. In practice, we divide the number of observations to the right of zero by the number of observations to the left of zero. This simple measure of asymmetry has been used in past literature (Brown and Higgins, 2001; Leuz et al., 2003; Glaum et al., 2004).

### 3.2. Data collection and sample

We selected three countries for our study, Australia, France and the UK, for the following reasons: As stated earlier, Australia is a non-European country that adopted IFRS in 2005; France and the UK are two European Union countries governed by EU regulation 1606/2002, which made application of IFRS mandatory from 2005 for listed companies (European Union, 2002). However, they represent two different traditions: the continental code law tradition (France) and the Anglo-American common law tradition (the UK) (La Porta et al., 1998; Nobes and Parker, 2006).

Our objective is to see whether the transition to IFRS was accompanied by a decline in earnings management. Since we are going to use a thresholds approach (presented above), we need the following data: income before extraordinary items (IBEX), total assets and sales. As income before extraordinary items is scaled by lagged total assets or lagged sales,<sup>8</sup> we encountered a difficulty concerning the year of first application of IFRS. This is illustrated by the year 2005, which corresponds to the first application in most of the firms studied (see Table 1). When we calculate the IBEX/Total assets for 2005, we have to use IBEX (2005)/Total assets (2004). The numerator and denominator of the ratio must be calculated under the same standards (in this case IFRS). While the IBEX (2005) is naturally under IFRS, the Total assets for 2004 must also be calculated under the same standards. For 2005, the company published its financial statements for 2005 under IFRS, together with figures for 2004 restated to comply with IFRS. In 2004, it published its financial statements for 2004 with comparative figures for 2003, both under local GAAP. Although the information we require (figures for 2004 restated to IFRS) is theoretically available (because it is included in the 2005 financial statements), it is by no means always contained in the databases, as most of them do not restate previous years' financial statements. Therefore, by default, the databases contain the financial statements for 2004 under local standards and 2005 under IFRS.

In the Worldscope (Thomson Financial) database, it is possible to display the restated financial statements for 2004 alongside the original 2004 figures in the web browser. Unfortunately, to the best of our knowledge and after checking with Thomson Financial, it is impossible<sup>9</sup> to extract the restated data for 2004. The Datastream (Thomson Financial) database also contains both series of accounts for 2004, but unlike Worldscope, it is possible to extract the restated 2004 data.

Of course, the example given for 2004 must be transposed to the year before the first application of IFRS. If the year-end is in December, the transition took place in 2004 with first application in 2005. For all other year-end dates, the transition took place in 2004–2005 and the first application in 2005–2006. Many companies in our sample have a financial year-end date later than 31st December 2004 and therefore made the transition to IFRS in 2005–2006. Fig. 1 reported earlier illustrates the transition and first application phenomenon by year-end date.

Determining the year of first application is thus important. To do so, we used the coding for accounting standards proposed by Datastream, which defines the following categories: (1) Commonwealth countries standards; (2) IFRS; (3) International standards; (4) International standards and some EEC guidelines; (5) Local standards; (6) Local standards with EEC and IASC guidelines; (7) Local standards with a certain reclassification for foreigners; (8) Local standards with some EEC guidelines;

<sup>7</sup> Leuz et al. (2003) use the net earnings. For reasons of data availability, we include income before extraordinary items in our research design.

<sup>8</sup> The variables IBEX/Total assets and IBEX/Sales are winsorized at 1% by country.

<sup>9</sup> At the time of writing (May 2008).

**Table 1**  
Financial year-ends for the first-time application of IFRS

Year-end	Australia N	France N	UK N	Total N
31-March-05	0	1	0	1
30-June-05	1	2	0	3
30-September-05	0	1	0	1
30-December-05	0	0	2	2
31-December-05	56	267	171	494
1-January-06	0	0	3	3
4-January-06	0	0	1	1
28-January-06	0	0	10	10
29-January-06	0	0	3	3
31-January-06	1	1	5	7
25-February-06	0	0	3	3
28-February-06	1	1	3	5
2-March-06	0	0	1	1
25-March-06	0	0	2	2
31-March-06	3	15	87	105
1-April-06	0	0	9	9
2-April-06	0	0	1	1
29-April-06	0	0	4	4
30-April-06	2	3	9	14
28-May-06	0	0	1	1
31-May-06	1	1	4	6
3-June-06	0	0	1	1
24-June-06	1	0	1	2
25-June-06	1	0	0	1
30-June-06	330	8	25	363
1-July-06	1	0	2	3
2-July-06	2	0	0	2
28-July-06	0	0	1	1
29-July-06	2	0	0	2
30-July-06	0	0	3	3
31-July-06	6	1	7	14
5-August-06	0	0	1	1
19-August-06	0	0	1	1
31-August-06	2	6	4	12
2-September-06	0	0	2	2
16-September-06	0	0	1	1
30-September-06	12	14	27	53
1-October-06	0	0	2	2
28-October-06	0	0	1	1
29-October-06	0	0	1	1
31-October-06	0	0	2	2
30-November-06	0	0	2	2
Total	422	321	403	1146

(9) Local standards with some IASC guidelines; (10) Not disclosed; (11) Other; (12) Specific standards set by the group; (13) US standards (GAAP). We considered that first application of IFRS had taken place if the accounting standards code was (2) for a given year, and (5)–(9) for the previous year. We did not consider categories (3) and (4) as equivalent to (2) because of the ambiguity over the content of the categories (which in any case only correspond to a very low number of observations). Accordingly, only firms coded (2) in the year of first application and (5)–(9) the previous year were selected. Table 1 shows the distribution by country of the year of first-time application for our sample.

Several year-end dates exist in the sample, the predominant date being 30 June in Australia and 31st December in France and the UK.

To maximize the sample size, we used the Datastream base for the period 2002–2006. As the transition year is unusual in that two sets of financial statements are published (one under local GAAP and one under IFRS), we decided to exclude that year from the study period. Furthermore, we cannot ex-



clude the possibility that firms indulged in particular “earnings management” during the transition year, with uncertain effects (Capkun et al., 2008). If we call the transition year “year 0”, we work on years  $-1$  and  $-2$  (before the transition) and  $+1$  and  $+2$  (after the transition). However, since we are using a threshold approach, we wished to compare the same firms before and after the transition to IFRS, as a principal test. We therefore created a constraint: each firm in the sample must have data available for at least one year before the transition year (years  $-1$  and  $-2$ ) and at least one year after the first application (years  $+1$  and  $+2$ ). This explains why in Table 2, Panel B the number of firms before and after the transition is the same, but the number of observations is different (due to data availability).

Our basic sample comprises 1146 firms (5051 firm-year observations): 422 (1933) for Australia, 321 (1316) for France and 403 (1802) for the UK. Banks, insurance and investment companies were excluded from the sample, because their very sector-specific accounts structure would prevent homogeneous statistical processing.

## 4. Findings

### 4.1. Descriptive statistics and univariate tests

Table 2 reports our descriptive statistics for the three countries, concerning the variables Income before extraordinary items (IBEX), Total assets and Sales (Panel A) and the variable of interest IBEX/Lagged total assets (Panel B). In Panel A, the medians are visibly much lower than the means. This is similar to the phenomenon found in Glaum et al.'s (2004, p. 56) paper. It may be explained by the skewness of accounting variables but is not a problem for our research, as we concentrate more specifically on observations close to zero. In Panel B, we carry out a Wilcoxon rank-sum test (equality test on unmatched data) which compares medians before and after the application of IFRS, and shows that the median IBEX/Lagged total assets has not decreased in any country; on the contrary, it has increased, and the difference is significant in the three countries studied (at the 0.01 level).

Our robustness checks include the scaling of IBEX by net sales, as in Glaum et al. (2004). Results for this alternative scaling variable are qualitatively similar to the results reported above. We also ran the Wilcoxon rank-sum test in the extended sample, which relaxes the constraint of having a firm present before and after the transition to IFRS. In this extended sample, some firms are only present before and some others are only present after. Results for this test (with both scaling variables: lagged total assets and lagged sales) are consistent with the previous results.

### 4.2. Distribution of reported earnings

Table 2 concerns the whole sample, and therefore the whole range of IBEX/Lagged total assets. But the focus must be on firms for which IBEX is a percentage relatively close to zero. Consequently, in Fig. 2 we present distributions of IBEX (scaled by lagged total assets) for firms within the three countries studied with IBEX (scaled by lagged total assets) of between  $-0.10$  and  $0.10$ . Each figure per country is divided into two sub-figures; before the application of IFRS (“Pre IFRS”) and afterwards (“Post IFRS”). The interval width for our histograms is 0.01 (IBEX scaled by lagged total assets).

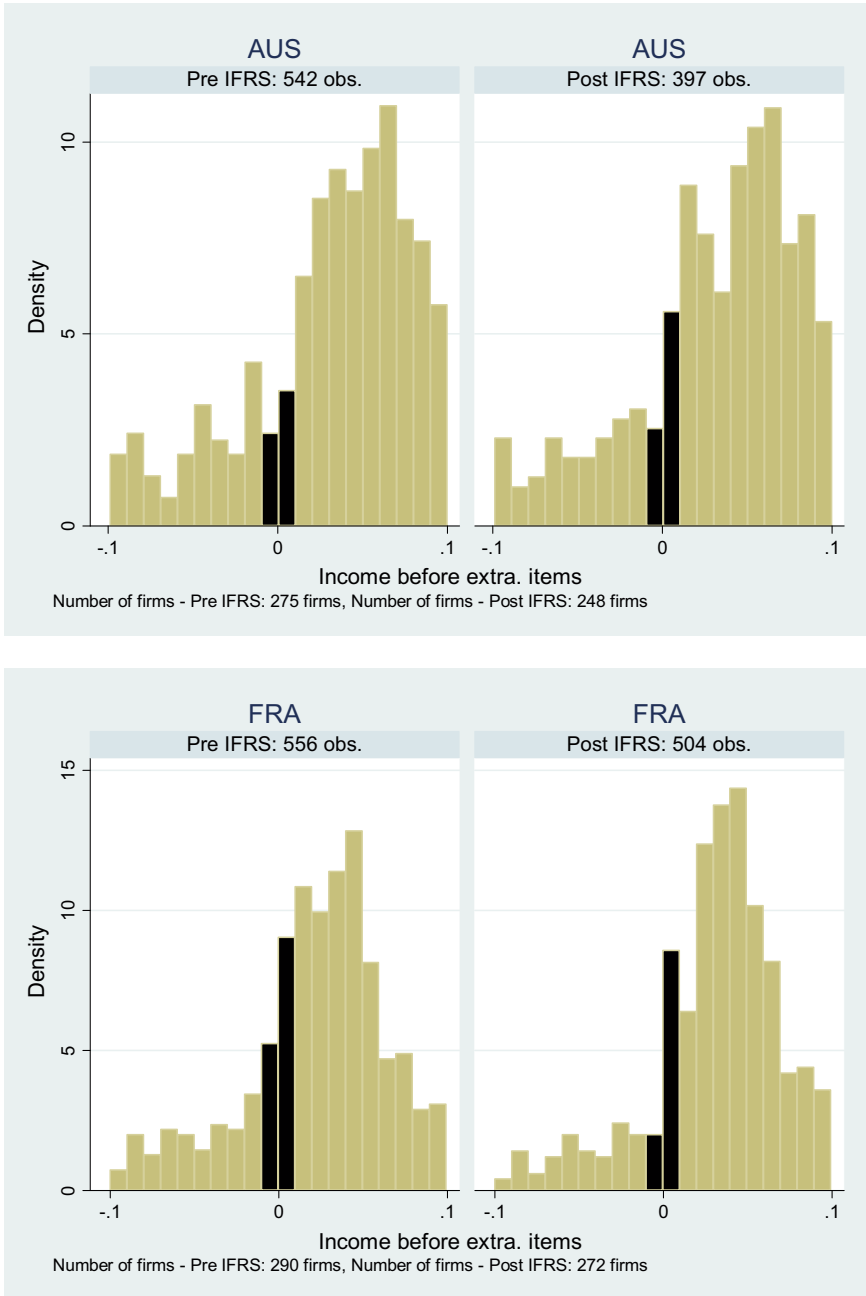
All the histograms show an abnormally high number of observations in the interval immediately to the right of zero. Also, the number of observations to the left of zero is abnormally low. Although this asymmetry is not unusual and has been widely commented on in the literature (e.g., Degeorge et al., 1999), the most important factor for our study is any disappearance, reduction, persistence or increase in the asymmetry. Examination of the graphs in Fig. 2 shows that discontinuities exist, not only before but also after IFRS. For Australia and France, it even appears that there is an increase in discontinuity. Developments in the UK are less clear from the graph.

As a robustness check, we established the same graphs using the variable IBEX scaled by lagged sales. Changes in the discontinuities are similar to those observed above with the other scaling variable.

**Table 2**  
Descriptive statistics–basic sample

Panel A: Income before extraordinary items (IBEX), total assets and sales													
	Total number of observations	Mean (IBEX)	Median (IBEX)	Mean (Total assets)	Median (Total assets)	Mean (Sales)	Median (Sales)						
Australia	1933	60,813.6	1628.0	857,779.4	55,443.0	756,547.2	47,678.0						
France	1316	99,387.9	6066.0	4,640,513.9	214,806.0	3,542,158.5	216,902.5						
UK	1802	71,492.4	8040.5	2,169,133.2	197,882.5	1,743,622.2	250,459.5						
Panel B: Income before extraordinary items scaled by total assets													
Basic sample	Total number of observations	Number of firms Pre IFRS	Number of observations Pre IFRS	p25	Median	p75	Number of firms Post IFRS	Number of observations Post IFRS	p25	Median	p75	z	Prob >  z
Australia	1933	422	1089	−0.177	0.029	0.084	422	844	−0.122	0.042	0.105	−2.848	0.004
France	1316	321	674	−0.003	0.029	0.058	321	642	0.016	0.041	0.072	−4.855	0.000
UK	1802	403	996	0.000	0.041	0.079	403	806	0.026	0.059	0.100	−6.353	0.000

Data is obtained from the Datastream database for the years 2002–2006. The variable of interest is Income before extraordinary items (IBEX) scaled by lagged total assets.



**Fig. 2.** Loss avoidance – Distribution of IBEX (scaled by lagged total assets). Distribution of IBEX (scaled by lagged total assets) for figures between  $-0.1$  and  $+0.1$ . Data is obtained from the Datastream database for the years 2002–2006. The total number of firm-year observations is disclosed above each graph for each sub-category (Pre IFRS or Post IFRS). The number of corresponding firms is displayed as a note below each couple of graphs. The interval width is 0.01. Intervals directly adjacent to zero are printed in black.

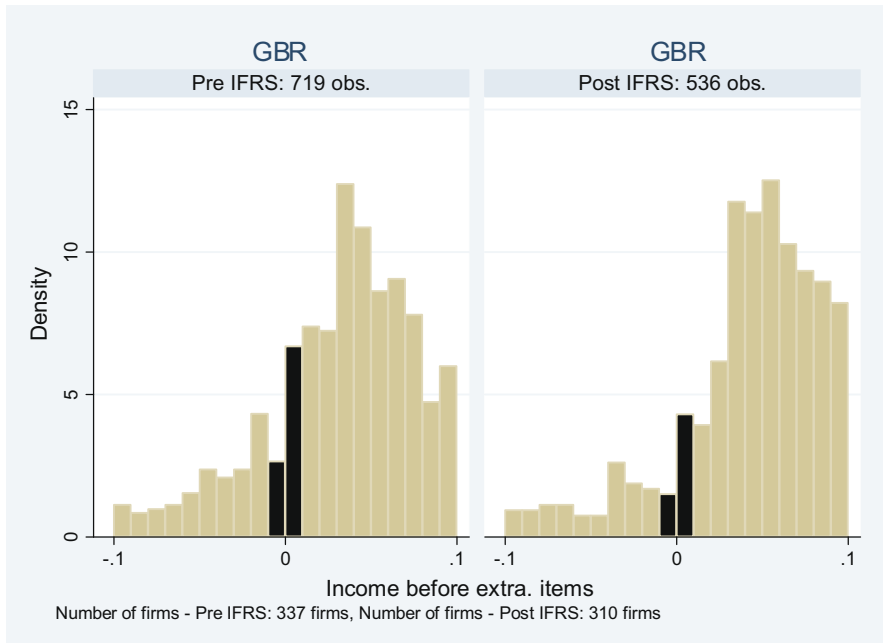


Fig. 2 (continued)

#### 4.3. Measures of asymmetry

The graphs in Fig. 2 have the advantage of presenting a straightforward visual representation of discontinuities, but these discontinuities must be measured to be certain of the phenomenon apparently observed, i.e. earnings management around the zero threshold. As stated earlier, there are several measures of asymmetry, and we use the ratio of small reported profits to small reported losses (Brown and Higgins, 2001; Leuz et al., 2003). A small profit corresponds to income before extraordinary items (scaled by lagged total assets) is in the range  $[0, 0.01]$  and a net loss corresponds to the range  $[-0.01, 0]$  for the same variable.

Table 3 presents the results of the small profits/small losses ratio using the Stata software's "tabodds" command, originally designed for epidemiologists. This command is used with case-control and cross-sectional data, and tabulates the odds of failure against a categorical explanatory variable (Post IFRS).<sup>10</sup> "Tabodds" performs a test for the linear trend of the log odds against the numerical code used for the categories of "Post IFRS". This test is based on the score statistic and its variance, and indicates whether the change in the odds (decrease or increase) is significant with increasing application of IFRS.

Examination of the table shows that the odds ratio increases in each country. In Australia, for example, it rises from 1.538 before IFRS to 2.000 after IFRS. This is contrary to the generally advanced hypothesis that application of IFRS should reduce earnings management, and therefore, in our example, reduce the odds. Changes in the odds are not significant in Australia or in the UK, and are significant (at the 0.05 level) in France. All the results, even when non-significant, run counter to the hypothesis that earnings management declined after the application of IFRS.

As robustness checks, we draw up the same table of odds by defining small profits and small losses with IBEX scaled by lagged sales. Results are qualitatively unchanged.

<sup>10</sup> Binary variable code 1 if the year is +1 or +2 and 0 if the year is -1 or -2 (see explanations above).

**Table 3**  
Asymmetry measure: small profits/small losses

	Cases (Small profit)	Controls (Small loss)	Odds
<i>Australia</i>			
Pre IFRS	20	13	1.538
Post IFRS	22	11	2.000
	Chi2	Pr > chi2	
Score test for trend of odds	0.258	0.612	
<i>France</i>			
Pre IFRS	51	28	1.821
Post IFRS	44	10	4.400
	Chi2	Pr > chi2	
Score test for trend of odds	4.468	0.035	
<i>UK</i>			
Pre IFRS	48	19	2.526
Post IFRS	23	8	2.875
	Chi2	Pr > chi2	
Score test for trend of odds	0.068	0.794	

Data is obtained from the Datastream database. Table 3 reports the results of the small profits/small losses ratio using the Stata software's "tabodds" command. This command is used with case-control and cross-sectional data. It tabulates the odds of failure against a categorical explanatory variable (Post IFRS). "Tabodds" performs a test for the linear trend of the log odds against the numerical code used for the categories of "Post IFRS". This test is based on the score statistic and its variance, and indicates whether the change in the odds (decrease or increase) is significant with increasing application of IFRS.

On the subject of robustness checks, it should be remembered that as Degeorge et al. (1999) point out, "to construct empirical histograms requires a choice of bin width that balances the need for a precise density estimate with the need for fine resolution". The authors used a bin width of  $2(IQR)n^{-1/3}$ , where IQR is the sample interquartile range of the variable and  $n$  is the number of available observations.

**Table 4**  
Asymmetry measure: small profits/small losses (interval width defined as in Degeorge et al. (1999))

	Cases (Small profit)	Controls (Small loss)	Odds
<i>Australia</i>			
Pre IFRS	57	37	1.541
Post IFRS	60	27	2.222
	Chi2	Pr > chi2	
Score test for trend of odds	1.363	0.243	
<i>France</i>			
Pre IFRS	24	13	1.846
Post IFRS	25	4	6.250
	Chi2	Pr > chi2	
Score test for trend of odds	3.814	0.051	
<i>UK</i>			
Pre IFRS	46	19	2.421
Post IFRS	21	8	2.625
	Chi2	Pr > chi2	
Score test for trend of odds	0.026	0.871	

Data is obtained from the Datastream database. Table 4 reports the results of the small profits/small losses ratio using the Stata software's "tabodds" command. This command is used with case-control and cross-sectional data. It tabulates the odds of failure against a categorical explanatory variable (Post IFRS). "Tabodds" performs a test for the linear trend of the log odds against the numerical code used for the categories of "Post IFRS". This test is based on the score statistic and its variance, and indicates whether the change in the odds (decrease or increase) is significant with increasing application of IFRS. The interval width equals  $2(IQR)n^{-1/3}$ , where IQR is the sample interquartile range of the variable and  $n$  is the number of available observations.

We applied this formula to define the interval width and computed the odds in the same way as mentioned above. Table 4 presents the results, which are qualitatively similar to the odds computed with an interval width of IBEX/Lagged total assets equal to 0.01.<sup>11</sup>

## 5. Conclusion and discussion: sharing incentives and institutions versus sharing rules

In this article, we analyze whether the mandatory introduction of IFRS standards had an impact on earnings quality, and more precisely on earnings management. We concentrate on three countries, namely Australia, France, and the UK. We select these three countries because they are IFRS first-time adopters: early adoption of IFRS (prior to 2005) was not possible in any of them. However, these three countries belong to different legal traditions: whereas France is a code-law country, Australia and the UK are common-law countries. The importance of equity markets is high in Australia and the UK but less pronounced in France (Leuz et al., 2003). We find that the pervasiveness of earnings management did not decline after the introduction of IFRS, and in fact increased in France.

Our findings confirm that sharing rules is not sufficient in itself to create a common business language. This is consistent with the idea that management incentives and national institutional factors play an important role in framing financial reporting characteristics, probably more important than accounting standards alone. We therefore suggest that the IASB, the SEC and the European Commission should now devote their efforts to creating common goals rather than harmonizing accounting standards. In particular, harmonization of legal enforcement systems, competition rules, market access conditions, and effectiveness of the legal system are factors that appear better able to guarantee comparable accounting practices across countries.

Like Clémenceau, France's pre-WW1 Prime Minister, who said that war is far too serious a matter to be entrusted to the military, we can assert that earnings quality is far too important a matter to depend on accounting standards alone.

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<sup>11</sup> Glaum et al. (2004) use different interval widths. Due to the small size of our sample, we cannot use the same methodology because we have too few observations for each interval studied.

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