LTA 2/12 • p. 141–177

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Information Content of IFRS versus Domestic Accounting Standards: Evidence from Finland

ABSTRACT

This paper compares the information content of financial statements based on IFRS with those based on Finnish Accounting Standards (FAS) using a sample of mandatory IFRS adopters. Finland is particularly well suited for this comparison because it has a high-quality reporting environment, its domestic standards differ significantly from those of IFRS, and it allowed early adoption of IFRS. The results show that earnings under IFRS are no more timely in reflecting publicly available news than earnings under FAS. Furthermore, book values of assets and liabilities measured under IFRS are no more value relevant than they are under FAS. However, additional analyses reveal that IFRS earnings provide marginally greater information content than FAS earnings for predicting future cash flows. Several possible reasons for these results are discussed.

Key words: *International Financial Reporting Standards, Mandatory IFRS adoption, Value relevance*

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1 INTRODUCTION

In this study, we examine the impact of mandatory adoption of International Financial Reporting Standards (IFRS) on the accounting quality of listed Finnish companies.[1] Specifically, we investigate how the 2005 switchover to IFRS has quantitatively impacted on the timeliness properties of earnings, information content of book values of assets and liabilities, and earnings' ability to predict future cash flows. Our inferences are based on a sample of 94 Finnish firms that provided IFRS reconciliation adjustments for the fiscal year 2004. This allows us to collect a comprehensive data set and compare financial statements prepared under Finnish Accounting Standards (FAS) with financial statements prepared under IFRS. As a result, each firm is its own control and the fiscal year is the same for both sets of figures. In addition, in the wake of the mandatory IFRS adoption we survey 20 financial analysts and examine their use of IFRS-based information for financial statement analysis. The role of the institutional environment in the empirical results and hence for inferences is also considered. This study is potentially relevant to current policy and academic debates on the topic.

While several studies have examined the effects of IFRS adoption worldwide, the empirical evidence from Finland is sparse.[2] In addition, Finland is particularly suitable for examining the effects of mandatory adoption of IFRS on the quality of accounting amounts for at least three reasons. First, we can compare two sets of financials for the same firm and the same year, mitigating the omitted variables problem.[3] A desirable feature of this design is that it allows market values to incorporate information from both sources. Second, Finland is a country with a high-quality financial reporting environment, and its domestic standards differ significantly from those of IFRS. FAS are similar to the domestic accounting standards (DAS) of other continental European countries (e.g. FAS emphasizes historical cost accounting; see Lantto and Sahlström 2009, for

1 International Accounting Standards (IAS) refers to standards issued by the International Accounting Standards Committee (IASC) and revised by the International Accounting Standards Board (IASB). IFRSs are issued by the IASB, the successor body to the IASC. For ease of exposition, we use the term "IFRS" to refer to these standards. In references, we use the same terminology as that used by the authors.

2 Having said this, Schadewitz and Vieru (2007, 2010) also examine IFRS reconciliation adjustments of Finnish firms. Schadewitz and Vieru (2007) find some evidence of value relevance of earnings adjustments but fail to find evidence of value relevance for shareholders' equity adjustments. They also examine whether the releases of IFRS reconciliations cause abnormal returns and trading volume and fail to find any significant evidence. Unlike Schadewitz and Vieru (2007), we survey financial analysts, provide institutional environment comparison, examine the timeliness properties of accounting earnings, examine the relative value relevance of the book value of assets and liabilities, and examine whether IFRS adjustments explain future firm performance. Also, in a related study, Vieru and Schadewitz (2010) find that a high FAS-IFRS disparity is associated with more costly non-audit services, but not with audit fees, during the transition phase.

3 Hung and Subramanyam (2007), Goodwin et al. (2008), and Clarkson et al. (2011) also use a similar "same firm-year" research design. Hung and Subramanyam (2007) investigate a sample of 80 German firms adopting IAS for the first time during the period 1998 through 2002. Goodwin et al. (2008) analyze a sample of 1,065 Australian listed firms while Clarkson et al. (2011) examine a sample of 3,488 firms from 14 EU countries and Australia that initially adopted IFRS in 2005.

discussion). Moreover, both sets of financial statements are audited and enforced.[4] Therefore we are able to measure the quality of the standards, not the quality of the enforcement of the standards. Ball (2001) argue that simply mandating new accounting standards for public financial reporting is akin to "window dressing" unless accompanied by wholesale revision of the infrastructure that determines the financial reporting incentives of managers and auditors. Third, and probably the most important, Finland permitted firms a choice of accounting standards prior to mandatory IFRS adoption, which means that firms expecting net benefits from voluntary IFRS adoption are self-selected out of this study.[5]

The IASB's stated goal is to achieve "harmonization" and "convergence" of accounting rules. To examine whether mandatory IFRS adoption leads to higher accounting quality we first describe the major differences between IFRS and FAS at the standard level. Our review is consistent with FAS emphasizing historical cost values (in contrast to fair values) and being less rigorous than IFRS. We document that IFRS, on average, increases earnings, decreases equity, and increases liabilities (Goodwin et al. 2008 document a similar finding for Australian firms). Then we use financial analysts as a proxy for sophisticated users of financial information. The survey evidence suggests that analysts use a wide range of IFRS disclosures, such as cash flow statements and segment reporting, in their financial statement analysis. We then empirically investigate three basic sets of analyses to compare whether IFRS financial reporting is superior to FAS. First, we investigate the timeliness properties of accounting earnings measured under IFRS and FAS. Second, we examine the relative value relevance of the book value of assets and liabilities. Third, we test whether IFRS reconciliations provide relative and incremental information about future cash flows.

Our market-based tests indicate that accounting numbers measured under IFRS have no more information content than accounting numbers measured under FAS. Specifically, earnings under IFRS are no more timely with respect to news (either bad news or good news) than are earnings under FAS. It is widely accepted that timely recognition of information is a desirable property of accounting reports. Furthermore, book values of assets and liabilities have no greater ability to reflect the market value of equity under IFRS than under FAS. These results are surprising given the fair value orientation of IFRS and given that IFRS promotes "fair" presentation of assets and liabilities. However, these findings are consistent with previous results from other countries (e.g. for Australia see Goodwin et al. 2008, for Germany see Paananen and Lin 2009). In contrast to market-based tests, additional analyses reveal that earnings under IFRS provide marginally greater

4 Strictly speaking, the IFRS reconciliation adjustments are not necessarily audited at the time of their disclosure but in the fiscal year 2005 financial statements.

5 The other European countries that have allowed this choice are Belgium, the Czech Republic, Denmark, Germany, the Netherlands, and Switzerland.

information content than earnings under FAS for predicting future cash flows. In addition, IFRS earnings adjustments are informative about future cash flows. Specifically, IAS 2 (*Inventories*), IAS 17 (*Leases*), and IAS 19 (*Employment Benefits*) are positively associated with future cash flows. At first glance, this may seem contradictory. Although IFRS earnings adjustments have predictive ability for future cash flows, they do not enhance the timeliness of earnings. Our results are robust to alternative model specifications. Evidence from the pre-IFRS and post-IFRS periods also suggest that IFRS accounting amounts are not higher of quality than accounting amounts based on FAS.

Overall, we are unable to find systematic evidence that IFRS results in improved accounting quality for mandatory adopters. There are several possible reasons for this. The first is that the sample does not include voluntary IFRS adopters (e.g. Nokia and UPM-Kymmene), which more likely expect net benefits. The remaining sample, that is, mandatory IFRS adopters, could be firms that do not expect net benefits from IFRS. Secondly, it is also possible that a strong institutional framework substitutes for higher quality accounting standards. It is well known that financial reporting outcomes are determined by the interaction between accounting standards, preparers' incentives, regulation, enforcement, and other institutional features of the economy (e.g. Ball 2001, 2006, Holthausen 2009). In this case FAS amounts already reflect economic reality (substance), thus attenuating the effect of IFRS. Thirdly, it is possible that IFRS may not be superior to local accounting rules for all firms (especially smaller ones). Finally, it is possible that the limitations of the model specifications and low power tests account for the pattern of the results.

A primary contribution of this study is that we examine the accounting quality of firms compelled to switch to IFRS in a high-quality reporting environment. Earlier studies have mainly examined voluntary adopters or mandatory adopters in countries where voluntary adoption was prohibited (e.g. Australia). As noted above, Finland permitted firms a choice of accounting standards prior to mandatory IFRS adoption, which means that firms that expect net benefits from voluntary IFRS adoption are self-selected out of this study.[6] Voluntary IFRS adoption has been the costly signal that high-quality firms use to distinguish themselves from low-quality firms. Essentially, the mandatory requirement to adopt IFRS removes this possibility and the costs of this are borne by all (listed) firms. In addition, Kothari et al. (2010) argue that competition (rather than convergence) between the IASB and local accounting standard setters is likely to be the most practical means of achieving GAAP rules that facilitate efficient capital allocation. The main conclusion of this paper is that a certain caution is advisable in increasing financial reporting regulation.

6 We acknowledge that this creates a conservative bias against finding a positive impact of IFRS adoption. However, it is well known that the mere existence of net benefits of voluntary IFRS adoption is not sufficient to justify mandatory adoption of IFRS.

A few caveats are in order. First, our analysis is based on Finnish first-time IFRS adopters. Therefore, the results should be generalized to other countries and time periods with care.[7] For example, it is conceivable that the quality of IFRS accounting amounts improves as financial statement preparers' and users' familiarity with IFRS standards increases over time. Second, our paper compares the value relevance of accounting amounts based on IFRS with those based on FAS. The extent to which value relevance studies have implications for standard setting is debatable (see Holthausen and Watts 2001, Barth et al. 2001). In addition, we do not examine the contracting effects of IFRS reconciliation adjustments. Third, it is possible that our sample companies reduced the differences between FAS and IFRS financials in the pre-adoption year because any earnings management is likely to be detected.[8] This would explain a lack of significant differences between FAS and IFRS accounting measures.[9] Fourth, as allowed by IFRS 1, firms were not required to retrospectively apply the financial instruments standard (IAS 39). Although our sample does not include banks, our results may be affected by the omission of this standard.

The paper proceeds as follows. In Section 2, we present a review of the relevant literature. In Section 3, we discuss the institutional background and discuss the main differences between IFRS and FAS. In Section 4, we present our hypotheses. Section 5 describes our research design. Section 6 presents our sample selection and statistics. Section 7 presents our results in three subsections, and Section 8 concludes the paper.

2 BACKGROUND AND LITERATURE REVIEW

The IASC was founded in 1973 to set high-quality accounting standards to be applied internationally. Since the first IAS was published in 1975, there have been substantial changes in both IAS standards and the organizational structure of the IASC. The organizational restructuring in 2000 changed the IASC into the IASB. As Ball (2006) notes, there has been extraordinary success in developing and disseminating a comprehensive set of 'high-quality' IFRS standards. In March 2002, the European Parliament voted to require that all listed companies in the European Union apply IFRS beginning in the fiscal year 2005. Furthermore, the U.S. Securities and Exchange Commission (SEC) has taken major steps permitting the use of IFRS in the U.S. (see Barth 2008,

7 We provide information about the Finnish corporate governance environment compared to other countries so that the reader can assess the generalizability of the results.

8 However, it is likely that investors can unravel the effect of earnings management on reported earnings with a time lag. This is because many firms provide the IFRS reconciliation reports several weeks after the announcement of FAS annual reports. A well-known example where reported earnings differ significantly between the two standards is the case of Daimler-Benz AG in 1993. Daimler-Benz reported a German-rule income of DM 615 million, but subsequent U.S. GAAP income revealed that a loss of DM 1.839 billion had been hidden by various accounting adjustments (Ball et al. 2000).

9 Although it is possible that earnings management incentives (e.g. equity incentives) are reduced for managers, tax incentives for firms are still in effect because taxation is tied to FAS earnings.

Hail et al. 2010a, b). As of 2007, the SEC permits non-U.S. firms to file financial statements based on IFRS. At the present time, over one hundred countries have adopted or plan to adopt the International Financial Reporting Standards (IFRS) for listed companies. Not surprisingly, the adoption of IFRS has attracted considerable attention from regulators, investors, practitioners, and academics worldwide.

Several studies have compared accounting amounts based on IAS with those based on the DAS of voluntary adopters (for a review, see Soderstrom and Sun 2007; Leuz and Wysocki 2008). Barth et al. (2008) investigate the application of IAS in 21 countries over the period 1994–2003 and find some evidence that IAS firms have higher accounting quality than firms applying DAS. Gassen and Sellhorn (2006) find that German firms that voluntary adopted IFRS during the period between 1998 and 2004 have more persistent, less predictable and more conditionally conservative earnings. Hung and Subramanyam (2007) examine the financial statement effects of adopting IAS using a sample of 80 German firms during the period 1998 to 2002. They find that book value and income are no more value relevant under IAS than under German GAAP, but there is weak evidence that IAS income exhibits greater conditional conservatism than German GAAP income.

The findings of early IAS studies of voluntary adopters are difficult to interpret for at least three reasons. First, prior studies generally assume that IAS standards are of high quality during the time period examined. IAS standards have improved significantly over the years, so it is difficult to say when IAS standards attained "sufficiently" high quality (see Holthausen 2003). As described here, many important standards (or revised versions of these) currently included in IFRS did not take effect until 2004. Second, because firms voluntarily chose whether and when to adopt IFRS reporting, it is difficult to attribute the observed effects to IFRS reporting *per se* (Leuz and Wysocki 2008). Third, as Barth et al. (2008) point out, any improvement in accounting quality for firms applying IAS may be attributable to changes in incentives and not to changes in the financial reporting system.

There is a growing body of literature that provides evidence of investor perceptions of mandatory IFRS adoption and accounting amounts compared to those of DAS. Using UK data, Christensen et al. (2009) and Horton and Serafeim (2010) document significant market reactions to IFRS reconciliation announcements. Armstrong et al. (2010) provide evidence that investors reacted positively to 16 events associated with the adoption of IFRS in Europe.[10] Daske et al. (2009) find that market liquidity increased around the time of the mandatory IFRS adoption. Li (2010) finds that mandatory adoption of IAS in the European Union significantly reduced the cost of

10 In a similar study, Christensen et al. (2007) examine the economic consequences for UK firms of the EU's decision to impose mandatory IFRS. They hypothesize and find that the impact in both the short-run market reactions and the long-run changes in cost of equity vary across firms and are conditional on the perceived benefit.

equity capital for mandatory adopters. However, this reduction is seen only in countries with strong legal enforcement; furthermore, increased disclosure and enhanced information comparability are two mechanisms behind the cost of equity reduction. In summary, the evidence from the above studies suggests that investors consider IFRS to be informative and to represent a higher-quality set of standards than most DAS.

Turning to accounting quality studies, Jeanjean and Stolowy (2008) find that the pervasiveness of earnings management did not decline in Australia and the UK, and in fact increased in France, after the mandatory introduction of IFRS standards. Capkun et al. (2008) analyze mandatory change effects in nine European countries and find that IFRS earnings disclosures are value relevant.[11] Goodwin et al. (2008) find that IFRS earnings and equity are not more value relevant than Australian GAAP earnings and equity. Gjerde et al. (2008) find little evidence of increased value relevance after adopting IFRS in Norway. Paananen and Lin (2009) find a decline in accounting quality after mandatory adoption using a sample of German companies. Tsalavoutas et al. (2010) find no significant change in the value relevance of book value of equity and earnings in a weak corporate governance environment, namely Greece. Using a broad sample from 21 countries, Ahmed et al. (2010) find that mandatory adoption results in smoother earnings, more aggressive reporting of accruals, and a reduction in timeliness of loss recognition relative to gain relative to benchmark firms.[12] Finally, Clarkson et al. (2011) investigate the impact of IFRS adoption in Europe and Australia on the relevance of book value and earnings for equity valuation. They conclude that there is no observed change in price relevance for firms in either Code Law or Common Law countries.[13] Taken together, the empirical evidence is mixed and suggests that findings of higher accounting quality for voluntary adopters may not hold for mandatory adopters in every jurisdiction.

11 The countries analyzed are the United Kingdom, France, Italy, Sweden, Norway, Spain, the Netherlands, Poland, and Ireland. Note that Norway is a member of the European Economic Area (EEA) but not a member of the EU.

12 Their sample includes 21 countries that adopted IFRS in 2005 and 12 countries that did not adopt IFRS. The former countries are namely Australia, Austria, Belgium, Denmark, Finland, France, Greece, Germany, Hong Kong, Ireland, Italy, Luxembourg, Netherlands, Norway, Philippines, Portugal, South Africa, Spain, Sweden, Switzerland, and the United Kingdom. The latter countries are namely Argentina, Chile, China, India, Indonesia, Israel, Korea Rep., Malaysia, Mexico, Taiwan, Thailand, and the United States.

13 Common Law countries are Australia, Ireland, and the United Kingdom while Code Law countries are Belgium, Denmark, Finland, France, Germany, Greece, Italy, the Netherlands, Norway, Portugal, Spain, and Sweden.

3 INSTITUTIONAL ENVIRONMENT AND ACCOUNTING DIFFERENCES BETWEEN IFRS AND FAS

3.1 Institutional environment

Historically, Finland has been characterized as having debt-dominated capital markets with concentrated ownership and taxation tied to reported earnings (Kasanen et al. 1994). Thus the Finnish accounting legislation has similarities with the German system, which is geared towards protecting creditors as well as preserving capital and is closely linked to taxation principles. The Finnish accounting legislation, historically based on an idiosyncratic cost-income theory, underwent a series of reforms that brought it closer to international standards in the 1990s.[14] Finland joined the European Union (EU) in 1995. As a result, the Fourth and Seventh Company Law Directives of the EU were taken into account in the Finnish accounting legislation in the 1990s. At the same time, the Finnish financial system shifted from relationship-based debt finance towards increasing dominance by the stock market. Also during the 1990s, shareholder protection was strengthened, while creditor protection weakened.[15] Moreover, the ownership shares of financial institutions declined substantially, while the foreign ownership share of Finnish listed companies grew substantially (Hyytinen et al. 2003).

It is well known that high-quality accounting standards *per se* are not sufficient to ensure high-quality financial reporting (see Leuz and Wysocki 2008, Holthausen 2009, and references therein). For example, Leuz et al. (2003) show that both investor protection laws and the enforcement of those laws are important determinants of reporting quality, while Ball et al. (2003) highlight the importance of preparers' financial reporting incentives. Ball (2006, 6) argues that "The notion that uniform standards alone will produce uniform financial reporting seems naïve, if only it ignores deep-rooted political and economic factors that influence the incentives of financial statement preparers and that inevitably shape actual financial reporting practice". Next, we show that Finland stands out well in an institutional environment comparison. The point of the following discussion is to demonstrate that Finland has a high-quality reporting environment.

The governance indicators of Kaufmann et al. (2009) measure six dimensions of governance: Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. These indicators are based on hundreds of specific and disaggregated individual variables measuring various dimensions of governance, taken from 35 data sources provided by 33 different organizations. We use

14 Two main reforms were the changes in accounting legislation in 1992 and 1997. See Section 3.2 for a more detailed analysis of the differences between IFRS and FAS. Also, see Pirinen (2005) for a detailed analysis of the effect of IASs on Finnish accounting practices and Hyytinen et al. (2003) for a description of the changes in Finnish corporate governance and financial systems that occurred in the 1980s and 1990s.

15 La Porta et al. (1998) classify Finland as a country with strong enforcement and intermediate investor protection. The evidence in Hyytinen et al. (2003) is based on more recent data.

the governance indicators developed by Kaufmann et al. (2009) to compare governance levels in Finland to those of other countries. Kaufmann et al. (2009) highlight that cross-country comparisons of governance should take into account of the margins of error associated with the governance estimates. The numbers in boldface in Table 1 indicate that the 90% confidence intervals of a particular country do not overlap with Finland. In other words, in this case the difference between the scores of Finland and a given country is likely to be statistically significant.

As is evident in Table 1, the country-specific governance indicators in Finland are among the highest in the world. Probably the most important indicators with respect to accounting outcomes are Regulatory Quality, Rule of Law, and Control of Corruption indicators. Table 1 shows that the measures of governance are very similar in the Nordic countries. In addition, comparable governance scores are found in Austria, the United Kingdom, Ireland, Luxembourg, the Netherlands, Australia, Canada, Switzerland, and the United States.

Several other information sources also support the view that the quality of the institutional environment in Finland is very high. According to the Corruption Perceptions Index produced by Transparency International, Finland is rated one of the least corrupt countries in the world.[16] Finally, Finland was considered one of the most competitive countries in the world by the IMD (2006). Taken together, this evidence demonstrates that Finland is an interesting jurisdictional environment within which to conduct our study.

3.2 Accounting differences between IFRS and FAS

FAS, like other non-U.S. domestic standards, differ from IFRS in two main respects. First, rules regarding certain accounting issues are missing in FAS but are covered in IFRS. Second, rules regarding the same accounting issue differ between FAS and IFRS. Ding et al. (2007) label the former disparity *absence* and the latter *divergence*. With regard to *absence*, FAS allows some IFRS rules to be applied optionally. The effect of IAS on FAS has been notable but not as important as the effect of the implementation of the European Union Directives in 1990s (Pirinen 2005, see also Pajunen 2009). In accordance with the EU Directives, consolidated accounts must give a true and fair view of the company's assets, liabilities, financial position, and profit or loss. However, because accounting is not separate from tax accounts in many European countries (like Finland), this requirement has been met by providing extra disclosures rather than changing the reported numbers (Nobes and Parker 2002). Moreover, the ideas of IAS included in FAS did not drastically change national accounting practice because in most cases they provided an alterna-

16 http://www.transparency.org/policy_research/surveys_indices/cpi. Corruption Perception Index ranks for Finland from 2001 to 2008: 1st, 1st, 1st, 1st, 2nd, 1st, 1st, and 5th. Note that this index is one of the sources for the study by Kaufmann et al. (2009).

TABLE 1. Governance indicators for 2005 by Kaufmann et al. (2009).

	Voice and Accountability	Political Stability and Absence of Violence/ Terrorism	Government Effectiveness	Regulatory Quality	Rule of Law	Control of Corruption
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
Finland	1.719	1.558	2.183	1. 763	1.941	2.382
Other Nordic countries	1.653	1.283	2.092	1.592	1.953	2.187
Denmark[EU]	1.780	0.998	2.162	1.707	1.967	2.188
Iceland	1.607	1.623	2.203	1.657	2.117	2.530
Norway	1.646	1.289	1.993	1.469	1.923	1.961
Sweden[EU]	1.580	1.220	2.010	1.535	1.806	2.070
European Union	1.187	0.750	1.195	1.200	1.029	1.047
Austria	1.389	1.059	1.704	1.560	1.807	1.911
Belgium	1.417	**0.790**	1.780	1.290	**1.386**	**1.420**
Bulgaria	**0.500**	**0.167**	**0.201**	**0.637**	**–0.183**	**0.082**
Cyprus	**0.971**	**0.377**	**1.086**	1.285	**0.838**	**0.773**
Czech Republic	**0.921**	**0.781**	**1.111**	**1.066**	**0.757**	**0.482**
Germany	1.505	**0.837**	**1.602**	1.418	1.680	**1.846**
Spain	1.109	**0.455**	**1.405**	1.233	**1.071**	**1.313**
Estonia	**1.009**	**0.640**	**1.064**	1.406	**0.814**	**0.980**
France	1.470	**0.470**	**1.571**	**1.103**	**1.367**	**1.386**
United Kingdom	1.471	**0.378**	1.718	1.575	1.562	1.882
Greece	**1.088**	**0.483**	**0.676**	**0.879**	**0.704**	**0.321**
Hungary	1.162	0.880	**0.820**	**1.123**	**0.751**	**0.673**
Ireland	1.625	1.174	1.688	1.587	1.562	**1.570**
Italy	**0.999**	**0.342**	**0.660**	**0.890**	**0.499**	**0.246**
Lithuania	**0.911**	**0.793**	**0.832**	**1.115**	**0.475**	**0.316**

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TABLE 1. (continued)

	Voice and Accountability	Political Stability and Absence of Violence/ Terrorism	Government Effectiveness	Regulatory Quality	Rule of Law	Control of Corruption
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
Luxembourg	1.548	1.457	1.934	1.788	1.898	**1.817**
Latvia	**0.770**	**0.762**	**0.621**	**1.009**	**0.479**	**0.379**
Malta	1.214	1.370	**0.990**	1.152	1.385	**1.030**
Netherlands	1.686	0.886	1.961	1.703	1.704	1.982
Poland	**0.955**	**0.344**	**0.560**	**0.792**	**0.362**	**0.212**
Portugal	1.428	0.959	**1.060**	1.200	**1.087**	**1.117**
Romania	**0.364**	**0.202**	**–0.051**	**0.177**	**–0.233**	**–0.207**
Slovakia	**0.920**	**0.721**	**0.904**	**1.150**	**0.436**	**0.492**
Slovenia	**1.065**	0.955	**1.001**	**0.809**	**0.782**	**0.933**
Selected countries	0.625	0.244	0.936	0.739	0.695	0.697
Australia	1.520	0.900	1.926	1.617	1.739	1.908
Canada	1.499	0.965	2.037	1.542	1.744	**1.845**
Switzerland	1.605	1.329	2.113	1.466	1.934	2.095
China	**–1.516**	**–0.245**	**–0.118**	**–0.261**	**–0.412**	**–0.665**
India	**0.425**	**–0.738**	**–0.123**	**–0.214**	**0.181**	**–0.340**
Japan	**0.995**	1.031	**1.314**	1.166	**1.287**	**1.228**
South Korea	**0.746**	**0.560**	**1.028**	**0.793**	**0.852**	**0.625**
Mexico	**0.174**	**–0.231**	**–0.010**	**0.325**	**–0.483**	**–0.381**
Russia	**–0.652**	**–0.944**	**–0.363**	**–0.325**	**–0.870**	**–0.743**
United States	1.326	**0.083**	1.665	1.536	1.514	**1.543**
South Africa	**0.751**	**–0.026**	**0.830**	**0.484**	**0.157**	**0.552**

This table reports six dimensions of governance, taken from Kaufmann et al. (2009). A higher score indicates better outcome. Estimates in boldface are significantly different from Finland's estimates at the 10% level (see Kaufmann et al. 2009 for details).

tive treatment for a particular accounting issue in 1990s (Pirinen 2005). Furthermore, in some cases the ideas/treatments of IAS were allowed only in consolidated accounts (Pirinen 2005). Hence FAS still differed from IAS in the late 1990s and the difference was increasing when IFRS were developed substantially during the early 21st century but not implemented in the FAS. Thus due to the differences between FAS and IFRS the adoption of IFRS changed the magnitudes of the key accounting items and ratios of Finnish companies (see Lantto & Sahlström, 2009).

In contrast to FAS, IFRS more often requires that transactions and events be accounted for and presented in accordance with their substance and economic reality. Moreover, while IFRS requires a fair value-based approach to measurement, FAS is based on historical costs but requires downward valuations for permanent impairments of long-term assets.[17] The key differences[18] between FAS and IFRS are summarized in Table 2.

TABLE 2. Summary of differences in accounting standards between FAS and IFRS

Accounting treatment (IFRS standard)	*FAS*	*IFRS*
Employee benefits (IAS 19)	**All post-employment benefit plans are treated as defined contribution plans.**	**Requires post-employment benefit plans to be classified (and treated) as either defined contribution plans or defined benefit plans.**
		Requires employee benefit, such as pension, obligations to be measured at the present value. Requires pension assets to be measured at fair value.
Income taxes (IAS 12)	**The deferred tax can be calculated on the basis of timing differences rather than temporary differences. The deferred tax assets are not required to be recognized.**	**Requires a deferred tax liability to be recognized for all taxable temporary differences (some exceptions). Requires a deferred tax asset to be recognized for all deductible temporary differences to the extent that it is probable that the deductible temporary difference can be utilized (some exceptions).**

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17 However, FAS allows the measurement at market value if the fair value of a land or water area or security is permanently and significantly higher than its historical cost. Moreover, due to the transposition of Directive 2001/65/EC, FAS permits the use of fair-value valuation methods to account for certain classes of financial instruments.

18 FAS differ from IFRS in the following areas: employee benefits obligations (IAS 19), deferred tax (IAS 12), intangible assets (IAS 38), construction contracts (IAS 11), inventories (IAS 2), leases (IAS 17) and share-based payments (IFRS 2). Moreover, diverging from FAS, IFRS requires/allows fair value accounting in the following areas: property, plant and equipment (IAS 16), impairment of assets (IAS 36), financial instruments (IAS 39), investment property (IAS 40), share-based payments (IFRS 2), biological assets (IAS 41), and pension assets and liabilities (IAS 19).

TABLE 2. ***(continued)***

Accounting treatment (IFRS standard)	*FAS*	*IFRS*
Intangible assets (IAS 38)	Emphasizes prudent capitalization of development expenditures.	Stipulates that an asset can be recognized when it will probably entail future benefits and when the cost of the asset can be reliably measured.
Construction contracts (IAS 11)	The recognition by the stage of completion is optional.	Requires the costs and revenues of construction contracts to be recognized on a stage of completion basis.
Inventories (IAS 2)	Inventories can be valued without the inclusion of production overheads.	Requires inventory to be valued at full cost.
Leases (IAS 17)	Does not require the rules to be followed, and all leases can be treated as operating leases.	Requires leases to be classified (and treated) as operating leases and finance leases.
Share-based payments (IFRS 2)	Information about the transactions in which share options are granted to employees are disclosed in the notes but not recognized.	Requires an entity to reflect in its profit or loss and financial position the effects of share-based payment transactions. This includes expenses associated with transactions in which share options are granted to employees.
		Requires share-based payment liabilities to be measured at fair value.
Impairment of assets (IAS 36)	In rare cases, allows downward valuations for permanent impairments of long-term assets.	Requires assets with indefinite useful life to be assessed for impairment. Requires assets/intangible assets impairment to fair value.
Financial instruments (IAS 39)	Measurement at historical cost, but measurement at fair value allowed.	Requires fair value for most financial instruments.
Agriculture (IAS 41)	Measurement at historical cost.	Requires fair value for biological assets.
Investment property (IAS 40)	Measurement at historical cost.	Allows investment property to be measured at fair value.
Property, plant and equipment (IAS 16)	Allows the measurement at market value if the fair value of a land or water area is permanently and significantly higher than its historical cost.	Allows property, plant and equipment to be measured at fair value.
Business combinations (IFRS 3)	Allows the pooling of interests method to be used.	Requires the purchase method to be used. Assets and liabilities are measured at their acquisition-date fair value.
	Requires goodwill to be amortized systematically.	Requires goodwill to be assessed for impairment annually.

Table 2 shows that in contrast to FAS, IFRS requires or allows pension assets and liabilities (IAS 19), most financial instruments (IAS 39), biological assets (IAS 41), tangible and intangible fixed assets acquired in a business combination (IFRS 3), and share-based payment liabilities (IFRS 2) to be measured at fair value. In addition, IFRS allows investment property (IAS 40) and property, plant and equipment (IAS 16) to be measured at fair value after initial recognition and requires goodwill to be annually assessed for impairment (IFRS 3). Table 2 also shows that while IAS 17 requires leases to be accounted for and presented in accordance with their substance and economic reality, FAS does not require the rules to be followed, and all leases can be treated as operating leases. Nor does FAS require the classification of post-employment benefits, accounting for the business combinations by applying the purchase method or the recognition of the costs and revenues of construction contracts on a stage of completion basis. Moreover, while IAS 12 requires a deferred tax liability to be recognized for all taxable temporary differences or inventory to be valued at full cost, FAS permits these treatments but does not require them. Finally, while IFRS requires that an asset be recognized when it will probably entail future benefits and when the cost of the asset can be reliably measured, FAS emphasizes a prudent approach to asset valuation and liability recognition. Finally, Figure 1 depicts a timeline of key developments relevant to this study.

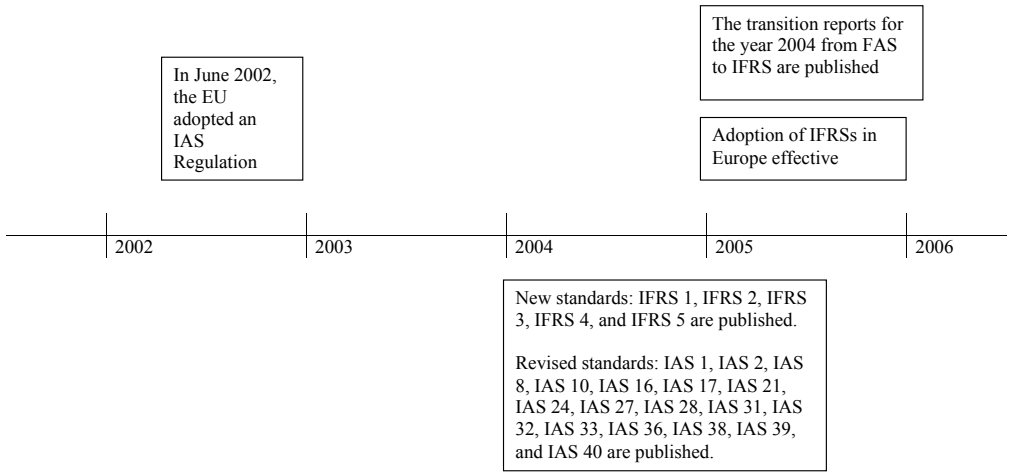

FIGURE 1. ***Timeline of major IFRS events in the EU and Finland.***

As described above, IFRS is more rigorous and complete than FAS. However, the stricter requirements "on the books" are not sufficient evidence to conclude that IFRS will improve financial reporting quality. Next, we develop testable hypotheses for the effect of IFRS adoption on accounting quality.

4 HYPOTHESES

Given our discussion above, we expect IFRS numbers to be of higher quality than their FAS counterparts. Such expectations are also supported by prior research (see Section 2). Moreover, the IASB conceptual framework states that the objective of financial statements is to provide information about the financial position, performance and changes in financial position of an entity that is useful to a wide range of users in making economic decisions. Given the quality and completeness and the fair-value orientation of the IFRS, we expect earnings calculated under IFRS to be of higher quality than earnings calculated under FAS.

Before stating formal hypotheses we survey 20 Finnish financial analysts to assess how they use IFRS for financial statement analysis purposes.[19] We use financial analysts as a proxy for sophisticated users of financial information. The purpose of this survey is to assess whether financial analysts perceive IFRS disclosures to be important. Table 3 presents summary information about survey respondents' characteristics and their use of IFRS disclosures.

Table 3, Panel A shows that a typical respondent is a 40-year-old male, has substantial career-related work experience but limited experience in IFRS, holds a Master's degree in economics and business administration, and has no assets under management. Table 3, Panel B presents financial analysts' answers on a 5-point Likert scale (1=totally disagree, 5=totally agree). We report t-tests whether the averages are significantly different from the null hypothesis of a value of 3, the midpoint of the scale. The results of Panel B of Table 3 indicate that financial analysts use a wide range of IFRS disclosures in their financial statement analysis. Cash flow statements, segment reporting, business combinations, impairment of assets, intangible assets, and property, plant, and equipment disclosures are very important for analysts. Overall, investor perceptions are also consistent with the notion that IFRS is of higher quality than FAS.

We first operationalize the quality of reported earnings based on their timeliness, as is commonly done in the literature (e.g. Basu 1997, Ball et al. 2000). Obviously both equity and debt markets demand timely accounting information (Ball et al. 2008). Accounting standards are used in preparing financial statements supplied by firms and their auditors. Ball et al. (2008, Table 1) document that even before the mandatory adoption of IFRS financial reporting in Finland was relatively timely and conservative.[20] Therefore, it is an open empirical question whether IFRS earnings exhibit even more timely recognition of news relative to FAS earnings. Our first hypothesis is as follows:

19 The questionnaire was sent to all members of the Finnish Society of Financial Analysts and to a group of individuals working as financial analysts in the member companies of the Finnish Association of Security Dealers. The response rate was slightly less than 10%. A pilot test was conducted with a group of analysts and academics. The questionnaires was sent in November 2005 and a reminder in December 2005.
20 Their sample comprises firm-year observations during the period 1992–2003.

TABLE 3. ***Summary of results of survey of financial analysts' opinions on IFRS adoption***

Panel A: demographic characteristics of the participants			
Age	**Percent**	**Gender**	**Percent**
≤35	30.0	Male	80.0
36–45	50.0	Female	20.0
≥46	20.0		
		Education	
Career-related work experience		MSc in Econ.	75.0
<5 yrs	15.0	Other	25.0
5–9 yrs	30.0		
>9 yrs	55.0	**Assets under management**	
		None	65.0
Prior IFRS experience		<€10 million	5.0
<1 yr	50.0	€10–50 million	20.0
≥1 yr	50.0	>€50 million	10.0

Panel B: Financial analysts' use of financial statement information		
Question: I use information in my financial statement analysis	**N**	**Mean**
Cash flow statements (IAS 17)	20	4.45***
A statement of changes in equity (IAS 1)	18	2.33**
Segment reporting (IAS 14)	20	4.70***
Business combinations (IFRS 3)	17	3.94***
Property, plant, and equipment (IAS 16)	19	4.26***
Investment property (IAS 40)	18	3.61*
Impairment of assets (IAS 36)	19	4.21***
Intangible assets (IAS 38)	19	4.16***
Research costs (IAS 38)	19	4.05***
Development costs (IAS 38)	19	4.00***
Leases (IAS 17)	20	3.05
Post-employment benefits (pensions) (IAS 19)	19	3.58*
Financial instruments (IAS 32 & IAS 39)	18	3.61*

This table reports financial analysts' responses to survey questions concerning their use of IFRS for financial statement analysis purposes. The survey uses a Likert scale of 1 to 5 to assess relevance (1= totally disagree, 5=totally agree). The asterisks indicate that the mean value is different from 3 (neutral opinion). *,**, and * indicate statistical significance at the 1%, 5%, and 10% level.**

H1: Earnings calculated under IFRS are more timely in reporting publicly available news than earnings calculated under FAS.

In a review of the earnings quality literature, Dechow et al. (2010) conclude that timely loss recognition represents high quality earnings, although Guay and Verrecchia (2006) point out that asymmetric conventions are inefficient from an information perspective. Moreover, Barth (2008, p. 1167) points out that conservatism is not a qualitative characteristic of accounting information in the IASB's conceptual framework. However, a result supporting the above hypothesis can in-

dicate an incremental association between earnings and good news and/or bad news. In order to examine this issue, we also allow the coefficients to change between good and bad news subsamples.

This study also compares the ability of IFRS book values relative to FAS book values to reflect the market value of equity. As noted above, IFRS requires that financial statements reflect economic substance more than legal form (e.g. accounting for leases). Therefore, IFRS book values are predicted, on average, to be a more useful measure of the market value of equity than FAS book values. This leads to the following hypotheses:

H2a: There is a stronger contemporaneous association between the market value of equity and the IFRS book value of assets and liabilities than between the market value of equity and the FAS book value of assets and liabilities.

H2b: IFRS asset and liability adjustments provide incremental information beyond FAS assets and liabilities about market value of equity.

Note that we consider both the relative and incremental information content of IFRS and FAS figures. Biddle et al. (1995) emphasize the distinction between relative and incremental information content: incremental comparisons ask whether one accounting measure provides information content beyond that provided by another while relative comparisons ask which measure has greater information content. Incremental predictive ability is necessary but not sufficient for IFRS to provide greater information content beyond FAS.[21] Hung and Subramanyam (2007) point out that incremental value relevance tests provide additional evidence that cannot be inferred from the relative value relevance analysis. Taken together, it is important to examine both relative and incremental information content when comparing different definitions of accounting numbers.

Because IFRS is designed to reflect economic gains and losses in a more timely fashion than FAS, we expect that IFRS earnings adjustments will have predictive ability for future cash flow from operations. Moreover, the IASB's conceptual framework suggests that financial reporting should provide information to help users of financial statements assess the ability of an entity to generate cash and cash equivalents and to assess the timing and certainty of those future cash flows. The above analysis leads to final hypotheses:

H3a: IFRS earnings have larger relative information content than FAS earnings for predicting future cash flows.

H3b: IFRS earnings adjustments have incremental predictive ability for future cash flows.

21 It is a common misconception that incremental information content means greater relative information content. For example, Capkun et al. (2008, p. 5) argue that "Value relevance of reconciliations would indicate IFRS reports are of a higher quality, adding value to investors, offering support of the EU's decision to harmonize standards by introducing IFRS for public firms."

5 RESEARCH DESIGN

5.1 Properties of IFRS and FAS definitions of earnings

Our first research objective is to investigate two alternative definitions of accounting earnings computed under IFRS and FAS. We can compare financial statements prepared under FAS with financial statements prepared under IFRS *for the same firm and the same year*, mitigating the omitted variables problem. Timeliness is measured using the Basu (1997) framework by regressing earnings on returns. Ball et al. (2009) point out that in the Basu regression, the research objective is to estimate the extent to which all of the available information about economic gains and losses is incorporated into accounting income in a timely fashion, regardless of the extent to which the source of new information is accounting itself. For our tests, it is irrelevant whether the source of new information to the market is FAS or IFRS. Although value relevance studies do not presume a causal connection between accounting amounts and stock returns, we argue that FAS/IFRS earnings are a more natural dependent variable than stock returns.[22] Accordingly, we estimate the following models (throughout the paper, *i* denotes firm and *t* denotes year):

$$\frac{NI_{it}^{FAS/IFRS}}{MVE_{it-1}} = \alpha_0 + \alpha_1 RET_{it} + \varepsilon_{it} \quad (1)$$

where NI_{it}^{FAS} is earnings calculated under FAS, NI_{it}^{IFRS} is earnings calculated under IFRS, MVE_{it-1} is the market value of equity at fiscal year end, and RET_{it} is the fiscal year stock returns (January 1, 2004 to December 31, 2004).[23] To save space we present only one regression model although the model is estimated separately for each definition of earnings.

We estimate FAS and IFRS earnings-returns models as a system using Seemingly Unrelated Regressions (SUR), permitting regression errors to be correlated across models. SUR also permits us to perform a convenient hypothesis test for relative information content. In particular, we are interested in which accounting income measure incorporates more economic income as proxied by stock returns. Consistent with H1, we expect that IFRS will be more value relevant or concurrently sensitive in reporting publicly available news than FAS because IFRS is considered to be more fair-value oriented. That is, we expect the estimated coefficient α_1 to be greater using the IFRS definition of earnings in comparison to the FAS definition of earnings.

22 Ball et al. (2009) argue that "when the research objective is to estimate some property of accounting income, as it is actually reported by firms, then the appropriate dependent variable is accounting income – not stock return."
23 In sensitivity tests we also use different return periods.

5.2 The value relevance of book values

A second approach to evaluating the information content of financial statements is the so-called balance sheet approach, in which one examines the relation between the book and market values of assets and liabilities. This approach starts from the premise that the market value of equity equals the sum of the market values of assets less the sum of the market values of liabilities, while the book value of common equity equals the book value of assets less the book value of liabilities (Beaver 1998). The difference between the market value and book value of equity (called the cumulative unrecognized gain and loss) is equal to the sum of the unrecognized gains (losses) on each of the assets and liabilities (Beaver 1998). In our setting, we are interested in examining whether the association of book value of assets and liabilities, as calculated under IFRS, is more highly associated with market value of equity than book value of assets and liabilities calculated under FAS.

To investigate the claim that the IFRS book value of assets and liabilities is a better measure of market value of equity than the FAS book value of assets and liabilities, we test whether the IFRS book value of assets and liabilities better explains market value of equity. Our models for testing relative value relevance are:

$$MVE_{it} = \alpha_0 + \alpha_1 BVA_{it}^{FAS/IFRS} + \alpha_2 BVL_{it}^{FAS/IFRS} + \varepsilon_{it} \quad (2)$$

where MVE_{it} is market value of equity at fiscal year end, BVA_{it}^{FAS} is book value of total assets calculated under FAS, BVA_{it}^{IFRS} is book value of total assets calculated under IFRS, BVL_{it}^{FAS} is book value of total liabilities calculated under FAS, and BVL_{it}^{IFRS} is book value of total liabilities calculated under IFRS. Note that we estimate two separate regressions, one using FAS book values and one using IFRS book values. Consistent with H2a, we expect that book values of assets and liabilities under IFRS will be more highly associated with market value of equity than corresponding book values under FAS. As in prior studies, we use a Vuong (1987) test to determine which book value measure has relatively more explanatory power.

We next examine incremental value relevance as follows:

$$MVE_{it} = \alpha_0 + \alpha_1 BVA_{it}^{FAS} + \alpha_2 BVL_{it}^{FAS} + \alpha_3 \Delta BVA_{it} + \alpha_4 \Delta BVL_{it} + \varepsilon_{it} \quad (3)$$

where the variables are as previously defined except that: ΔBVA_{it} equals book value of assets under IFRS minus book value of assets under FAS ($\Delta BVA_{it}^{IFRS} - \Delta BVA_{it}^{FAS}$), and ΔBVL_{it} equals book value of liabilities under IFRS minus book value of liabilities under FAS ($\Delta BVL_{it}^{IFRS} - \Delta BVL_{it}^{FAS}$). Consistent with H2b, we expect the α_3 (α_4) coefficient to be significantly positive (negative).

Easton and Sommers (2003) show that the results of the regression of market capitalization on financial statement data are driven by a relatively small subset of the very largest firms in the sample. This 'scale effect' results in coefficient bias and heteroskedasticity in undeflated regressions. Easton and Sommers (2003) propose a solution that uses deflation by market capitalization via a weighted least squares (WLS) regression. Accordingly, we use a WLS approach where each observation is weighted by the inverse of market capitalization for models (2) and (3).[24]

5.3 IFRS adjustments and future firm performance

Our final test focuses on whether IFRS adjustments explain future firm performance as measured by cash flow from operations, which is a common approach in the literature (e.g. Jarva 2009). We estimate the following cross-sectional models:

$$\frac{CFO_{it+1}}{MVE_{it-1}} = \alpha_0 + \alpha_1 \frac{NI_{it}^{FAS/IFRS}}{MVE_{it-1}} + \varepsilon_{it+1} \tag{4}$$

$$\frac{CFO_{it+1}}{MVE_{it-1}} = \alpha_0 + \alpha_1 \frac{NI_{it}^{FAS}}{MVE_{it-1}} + \alpha_2 \frac{\Delta NI_{it}}{MVE_{it-1}} + \varepsilon_{it+1} \tag{5}$$

where CFO_{it+1} is cash flow from operations, MVE_{it-1} is market value of equity at fiscal year end, NI_{it}^{FAS} is earnings under FAS, NI_{it}^{IFRS} is earnings under IFRS, and ΔNI_{it} is earnings under IFRS minus earnings under FAS ($NI_{it}^{IFRS} - NI_{it}^{FAS}$). In other words, ΔNI_{it} denotes IFRS reconciliation adjustments. As above, the model (4) is estimated separately for FAS and IFRS definitions of earnings.

In model (5), the interpretation of the coefficients is as follows: α_1 measures the predictive ability of the FAS component of earnings on future operating cash flows, and α_2 measures the incremental predictive ability of IFRS adjustments on future operating cash flows. The advantage of estimating this model is that α_2 provides direct estimates of the incremental information content of IFRS earnings over FAS earnings on predicting future cash flows and earnings. Our prediction is that α_2 is significantly positive (H3b).

24 In sensitivity analyses, we test alternative deflators, model specification (Ohlson 1995 model variant) and time points of MVE measurement.

5.4 Influential observations

Throughout the paper, we delete observations with absolute studentized residual values above 3 for timeliness and future firm performance regression models (Belsley et al. 1980).[25] As in Hung and Subramanyam (2007), each pair of regressions (that is, alternatively with IFRS and FAS measures) have identical observations to maintain comparable samples. Because our purpose is to test whether IFRS is superior to domestic GAAP, we want to ensure that results are not driven by a small number of influential (extreme) observations.

6 SAMPLE AND STATISTICS

6.1 Sample description

All listed companies in the EU have been required to prepare their financial statements in accordance with IFRS for fiscal years since 1 January 2005. IFRS 1 requires first-time adopters to present one year of comparative financial statements fully adjusted for compliance with IFRS.[26] In addition, the Committee of European Securities Regulators (CESR) has issued additional guidance regarding the transition to IFRS. Each national regulator can opt to require full or partial compliance with the CESR guidelines. In Finland, the Finnish Financial Supervision Authority (FIN-FSA) required firms to report the effects of the transition from FAS to IFRS. According to the FIN-FSA, 125 listed firms on the Helsinki Stock Exchange (HSE) were required to report the effects of the transition from FAS to IFRS.[27] Thus the initial sample comprises these 125 firms.[28]

Table 4 shows the effect of our sample selection criteria. To obtain data for our test, we hand-collected the transition reports that are publicly available from firms' press releases. We merge this data with the Datastream database to obtain equity market value and return data. We exclude financial institutions because these firms were not required to apply the Financial Instruments: Recognition and Measurement (IAS 39) until 1 January 2005. Our final sample consists of 94 firms.

25 For regression of market capitalization on balance sheet data influential observations are controlled through WLS estimation. Specifically, Easton and Sommers (2003) show that WLS is efficient in removing the scale effects (and thus observations with large studentized residuals).

26 The IASB adopted IFRS 1 in June 2003 to address the procedures that an entity must follow when it adopts IFRS for the first time.

27 According to the FIN-FSA, Finnish firms reported more actively about the IFRS transition than other EU countries. See also http://www.finanssivalvonta.fi/en/Publications/Archives/FIN_FSA_press_releases/Pages/9_2006.aspx.

28 Eleven Finnish firms have voluntarily adopted IFRS. Consistent with prior research, these firms are larger, more international, and are more often cross-listed on foreign stock exchanges. In fact, voluntary adopters account for about two thirds of the total market value of HSE stocks.

TABLE 4. ***Sample selection***

	Excluded	Number of firms
Initial sample: FIN-FSA firms[a]		**125**
Less		
Financial institutions	**7**	
Non-calendar fiscal year	**5**	
Unavailable data	**19**	
Final sample		**94**

[a] According to the Finnish Financial Supervision Authority (FIN-FSA), 125 listed firms on the Helsinki Stock Exchange (HSE) were required to report the effects of transition from FAS to IFRS.

Table 5 presents a breakdown of the sample firms into industries based on Barth et al. (1998). The three largest industry groups are Computers, Durable manufacturers, and Textiles, printing and publishing, and they account for nearly 60% of all sample firms. However, given the diversity of industries, there is no *a priori* expectation of any particular industry driving the results.

TABLE 5. ***Distribution of firms across industry sectors***

Industry	Number of firms
Computers	**17**
Durable manufacturers	**27**
Financial institutions	**1**
Food	**5**
Insurance and real estate	**8**
Mining and construction	**3**
Pharmaceuticals	**1**
Retail	**5**
Services	**9**
Textiles, printing and publishing	**12**
Transportation	**4**
Utilities	**2**
	94

[a] All sample firms were classified into industries based on Barth et al. (1998).

6.2 Sample statistics

Table 6 reports descriptive statistics on the reconciliation adjustments for the sample of 94 firms. In Panel A, we classify earnings adjustments into six categories while all other adjustments are classified under "other". Following Hung and Subramanyam (2007), we assign a value of zero for

TABLE 6. *Descriptive statistics on the reconciliation adjustments, IFRS versus FAS (N=94)*

Panel A: Earnings reconciliation adjustments between IFRS and FAS[a]	Mean	Std	Min	Median	Max	Non–zero	Negative	Positive
NI_{it}^{FAS}	35.414	136.143	–33.841	6.347	1258.000	100%	18%	82%
IFRS2	–0.094	1.422	–9.000	0.000	7.900	29%	24%	4%
IFRS3 & IAS36	4.703	12.922	–0.012	0.629	82.100	76%	1%	74%
IAS2	–0.013	0.674	–3.900	0.000	5.000	26%	16%	10%
IAS17	0.049	1.502	–10.000	0.000	6.000	36%	22%	14%
IAS19	2.837	10.845	–6.900	0.000	80.000	47%	5%	41%
IAS38	0.000	1.036	–9.100	0.000	2.000	23%	9%	15%
OTHER	–4.389	25.249	–223.200	–0.199	24.561	98%	63%	33%
NI_{it}^{IFRS}	38.507	140.489	–19.100	6.935	1292.000	100%	17%	83%
$NI_{it}^{IFRS} - NI_{it}^{FAS}$	3.093	27.682	–216.300	0.802	74.000	99%	21%	78%
Panel B: Book value reconciliation adjustments between IFRS and FAS[a]	**Mean**	**Std**	**Min**	**Median**	**Max**	**Non–zero**	**Negative**	**Positive**
BVE_{it}^{FAS}	267.907	855.767	0.884	44.896	7655.000	100%	0%	100%
BVE_{it}^{IFRS}	265.099	849.802	–17.896	46.633	7650.000	100%	3%	97%
$BVE_{it}^{IFRS} - BVE_{it}^{FAS}$	–2.808	36.333	–221.000	0.336	114.800	98%	43%	55%
BVL_{it}^{FAS}	345.343	1064.590	0.079	39.143	9049.000	100%	0%	100%
BVL_{it}^{IFRS}	372.387	1160.290	0.231	48.178	9917.000	100%	0%	100%
$BVL_{it}^{IFRS} - BVL_{it}^{FAS}$	27.044	101.533	–62.200	1.897	868.000	98%	12%	86%
BVA_{it}^{FAS}	613.250	1913.600	2.959	83.471	16704.000	100%	0%	100%
BVA_{it}^{IFRS}	637.486	2003.040	3.491	88.116	17567.000	100%	0%	100%
$BVA_{it}^{IFRS} - BVA_{it}^{FAS}$	24.236	99.526	–82.700	2.095	863.000	98%	16%	82%
Panel C: Statistics for market values and stock returns	**Mean**	**Std**	**Min**	**Median**	**Max**			
MVE_{it-1}	295.897	778.858	2.740	72.210	6917.540			
MVE_{it}	394.418	1263.590	3.810	87.780	11809.680			
RET_{it}	0.182	0.352	–0.685	0.142	1.091			

[a] All numbers are in millions of Euros (except for RET_{it}). IFRS standard names: IFRS 2 Share-based Payment; IFRS 3 Business Combinations; IAS 2 Inventories; IAS 17 Leases; IAS 19 Employee Benefits; IAS 36 Impairment of Assets; IAS 38 Intangible Assets. See Table 2 for further information on IFRS standards.

the corresponding category if a firm does not specifically report an adjustment for a given category.[29] With respect to income statements, we find that earnings are higher under IFRS than under FAS, although the difference is not significant.[30] Specifically, the mean (median) difference in earnings is €3.1 (0.8) million.[31] The largest income-increasing adjustments are IFRS 3 (that is, goodwill amortization is no longer allowed) and IAS 19 (accounting for employee benefits).

Panel B of Table 6 reports reconciliation adjustments separately for book value of equity, total liabilities, and total assets. We document that book value of equity (liabilities) under IFRS is lower (larger) on average than under FAS. Book value of equity (liabilities) increased for 55% (86%) of firms and decreased for 43% (12%) of firms. Additionally, book value of assets increased for 82% of firms and decreased for only 16% of firms.

Panel C of Table 6 reports the market values and stock returns of the firms in the sample. The average (median) beginning-of-period market value of equity is €296 (72) million. There is considerable variation in the sizes of the firms, and there are several firms with a very small market capitalization. We find that the average annual return is 18.2% (median = 14.2%).

7 RESULTS

7.1 Comparison of IFRS and FAS properties of earnings

Table 7 reports the results from estimating earnings-returns models in an SUR framework. As noted earlier, we control for the effect of influential observations. Specifically, we delete observations with absolute studentized residual values above 3 for both models (Belsley et al. 1980). We lose only two observations due to this screen.[32] Panel A reveals that the coefficient on fiscal year stock return is larger for FAS income (0.300) than for IFRS income (0.202), and the difference is statistically significant at $p < 5\%$ (two-tailed). Moreover, the explanatory power is 26.5% under FAS versus 25.2% under IFRS. Thus it appears that FAS income is marginally more associated with returns than is IFRS income.

Table 7, Panels B and C, presents findings for good news firms and bad news firms respectively. The results indicate that the differences in the coefficients between IFRS and FAS are statistically insignificant. One concern is that the small sample size could render the reported coefficients insignificant. We therefore set statistical insignificance aside and look at the values of the coefficients. Consistent with previous findings, inspection of the estimated coefficients reveals

29 Our results remain unchanged if we do not make this adjustment.
30 In an analysis not presented here, we tested the differences in the mean and median values of variables of interest.
31 This result is consistent with Lantto and Sahlström (2009). They show that the adoption of IFRS changed the magnitude of the key accounting ratios of Finnish companies by increasing the profitability and gearing ratios.
32 These firms are Benefon and Stromsdal. Both firms were in financial distress in 2004.

TABLE 7. ***Properties of IFRS and FAS definitions of earnings***

Panel A: Good and bad news (N=92)					
	α_0	α_1			**Adj. R^2%**
FAS	**0.017**	**0.300*****			**26.5%**
	(0.84)	**(5.81)**			
IFRS	**0.040*****	**0.202*****			**25.2%**
	(2.87)	**(5.62)**			
IFRS–FAS	**0.023**	**–0.098****			
	(1.27)	**(–2.09)**			
Panel B: Good news (N=66)					
	α_0	α_1			**Adj. R^2%**
FAS	**0.030**	**0.272*****			**13.7%**
	(0.84)	**(3.36)**			
IFRS	**0.054****	**0.174*****			**11.5%**
	(2.16)	**(3.07)**			
IFRS–FAS	**0.024**	**–0.098**			
	(0.69)	**(–1.24)**			
Panel C: Bad news (N=26)					
	α_0	α_1			**Adj. R^2%**
FAS	**0.024**	**0.375***			**8.4%**
	(0.49)	**(1.82)**			
IFRS	**0.035**	**0.221**			**6.0%**
	(1.09)	**(1.61)**			
IFRS–FAS	**0.011**	**–0.154**			
	(0.38)	**(–1.21)**			
Panel D: Asymmetric timeliness of bad news (N=92)					
	α_0	α_1	α_2	α_3	**Adj. R^2%**
FAS	**0.030**	**0.272*****	**–0.006**	**0.103**	**25.0%**
	(0.87)	**(3.50)**	**(–0.09)**	**(0.42)**	
IFRS	**0.054****	**0.174*****	**–0.019**	**0.047**	**23.9%**
	(2.27)	**(3.23)**	**(–0.42)**	**(0.27)**	
IFRS–FAS	**0.024**	**–0.098**	**–0.013**	**–0.056**	
	(0.77)	**(–1.38)**	**(–0.22)**	**(–0.25)**	

Reported statistics are for the following models:

$$\frac{NI_{it}^{FAS/IFRS}}{MVE_{it-1}} = \alpha_0 + \alpha_1 RET_{it} + \varepsilon_{it}$$

The initial sample contains 94 firms. The impact of influential observations is taken into account using the criteria outlined in Belsley et al. (1980). We eliminate observations that have absolute studentized residuals greater than 3 under both the FAS and IFRS regression models. After that, the models are re-estimated using the Seemingly Unrelated Regression. Throughout, *i* denotes firm and *t* denotes year. *NI*^{FAS} is earnings calculated under FAS. *NI*^{IFRS} is earnings calculated under IFRS. *MVE* is the market value of equity at the beginning of the fiscal year. *RET* is the fiscal year stock return (January 1, 2004 to December 31, 2004). *DR* is a dummy variable equal to 1 when *RET*<0 and equal to 0 otherwise. *t*-statistics are in parentheses.

***,**, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed).**

that both positive and negative returns are more highly associated with FAS income than with IFRS income. Also, the R^2 value for FAS income is greater than that for IFRS income in both comparisons. Prior research generally assumes that firms with higher earnings quality exhibit more timely loss recognition (e.g. Barth et al. 2008). The earnings-return regression findings suggest that FAS amounts are of at least equal in quality to IFRS amounts. Finally, Panel D reports the conventional Basu (1997) model. The insignificant coefficient on $DR_{it} \times RET_{it}$ suggests that firms are on average not conservative. Thus, taken together, these findings do not support H1.

7.2 Testing value relevance of book values

The results of the relative information content of book values (assets and liabilities) are presented in Panel A of Table 8. We estimate two sets of WLS regressions and use the Vuong (1989) test statistic for non-nested models to determine whether book values prepared under IFRS have higher value relevance than book values based on FAS. We also examine whether the coefficients on assets and liabilities components are 1 and –1 respectively.

TABLE 8. ***Relative and incremental information content of FAS and IFRS book values***

Panel A: Relative information content of book values (N=94)

	α_0	α_1	α_2	Adj. R^2%
FAS	**8.156****	**1.064*****	**–1.022****	**75.5%**
	(2.06)	**(4.06)**	**(–2.47)**	
IFRS	**7.872****	**0.994*****	**–0.890****	**76.2%**
	(2.10)	**(4.06)**	**(–2.18)**	
Vuong Z-stat	**0.000**			
(*p*-value)	**(1.000)**			

Panel B: Incremental information content (N=94)

α_0	α_1	α_2	α_3	α_4	Adj. R^2%
7.582**	**0.944*****	**–0.862****	**1.262**	**–0.301**	**76.0%**
(2.00)	**(3.85)**	**(–2.25)**	**(1.22)**	**(–0.30)**	

Reported statistics are for the following models:

$$MVE_{it} = \alpha_0 + \alpha_1 BVA_{it}^{FAS/IFRS} + \alpha_2 BVL_{it}^{FAS/IFRS} + \varepsilon_{it}$$

$$MVE_{it} = \alpha_0 + \alpha_1 BVA_{it}^{FAS} + \alpha_2 BVL_{it}^{FAS} + \alpha_3 \Delta BVA_{it} + \alpha_4 \Delta BVL_{it} + \varepsilon_{it}$$

The sample contains 94 firms. In Panel A, we test the models against one another using Vuong's non-nested likelihood ratio test. Throughout, *i* denotes firm and *t* denotes year. *MVE* is the market value of equity at the beginning of the fiscal year. *BVA* is the book value of assets calculated under IFRS/FAS. *BVL* is the book value of liabilities calculated under IFRS/FAS. Δ*BVA* equals book value of assets under IFRS minus book value of assets under FAS. Δ*BVL* equals book value of liabilities under IFRS minus book value of liabilities under FAS. The models are estimated with weighted least squares, where each observation is weighted by the inverse of market capitalization. White (1980) corrected t-statistics are in parentheses. *,**, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed).**

The results in Panel A show that the explanatory power of book values is 76.2% under IFRS versus 75.5% under FAS. The Vuong test indicates that the information content of book values of assets and liabilities under IFRS is not significantly higher than that based on FAS. The coefficient estimates show that, as expected, assets have a significant positive coefficient, whereas liabilities have a significant negative coefficient. The coefficient estimates of assets and liabilities are not significantly different from 1 and -1 respectively (untabulated). The intercepts are positive and nonzero, suggesting that both IFRS and FAS book values are measured with error.[33]

Panel B of Table 8 reports the incremental information content results. The results show that coefficients on ΔBVA_{it} and ΔBVL_{it} are insignificant. These findings indicate that asset and liability differences between FAS and IFRS are value irrelevant. Overall, we fail to find support for hypotheses 2a and 2b, and consequently evidence that IFRS is superior to FAS.

The inferences are the same across our timeliness and value relevance tests. In summary, we are unable to find evidence that IFRS is of higher quality than FAS. These findings are somewhat surprising in light of voluntary IFRS adoption studies and in view of the fair-value orientation of IFRS. However, our results are consistent with those of recent studies by Goodwin et al. (2008), Clarkson et al. (2011), and Tsalavoutas et al. (2010), each of which demonstrated that mandatory IFRS adoption does not necessarily improve accounting quality. Hung and Subramanyam (2007) point out that these tests assume that stock prices aggregate value relevant information independent of the nature and form of information disclosed in financial statements. Moreover, Barth et al. (2001) point out that value relevance tests are joint tests of relevance and reliability. Next we adopt a more direct approach that does not rely on share prices as proxies for expected future cash flows.

7.3 Findings relating to future firm performance

Table 9 presents the results of the estimation when future cash flows are the dependent variable. We delete three observations with absolute studentized residual values above 3 in Models (4) and (5).[34] Panel A of Table 9 reports the results of our relative information content analyses. As previously, we run two sets of regressions, one with FAS earnings, and the other with IFRS earnings. The coefficient on FAS earnings, α_1, is relatively low 0.305 at $p < 10\%$, whereas the coefficient on IFRS is 0.647 at ≤ 1% (two-tailed). Earnings under IFRS are significant in predicting one-year-ahead cash flow, explaining 40.6% of its variation. The difference in adjusted R^2s across the FAS and IFRS models is significant at $p < 10\%$ (two-tailed). This result implies that the predictive abil-

33 Beaver (1998, p. 114) note that in the presence of measurement error, the intercept term can be nonzero and the slopes can be different from one. One example of measurement error is an omitted asset or liability (e.g. past R&D expenditures).

34 These firms are Benefon, Ramirent, and Rautaruukki.

TABLE 9. ***The prediction of future cash flows***

Panel A: Relative information content (N=91)			
	α_0	α_1	**Adj.** R^2**%**
FAS	**0.118*** **	**0.305***	**17.5%**
	(7.65)	**(1.87)**	
IFRS	**0.093*** **	**0.647*** **	**40.6%**
	(5.15)	**(3.98)**	
Vuong Z-stat	**1.679**		
(***p*****-value**)	**(0.093)**		

Panel B: Incremental information content (N=91)				
	α_0	α_1	α_2	**Adj.** R^2**%**
	0.093* **	**0.647*** **	**0.647*** **	**39.9%**
	(5.16)	**(3.95)**	**(4.49)**	

Reported statistics are for the following models:

$$\frac{CFO_{it+1}}{MVE_{it-1}} = \alpha_0 + \alpha_1 \frac{NI_{it}^{FAS/IFRS}}{MVE_{it-1}} + \varepsilon_{it+1}$$

$$\frac{CFO_{it+1}}{MVE_{it-1}} = \alpha_0 + \alpha_1 \frac{NI_{it}^{FAS}}{MVE_{it-1}} + \alpha_2 \frac{\Delta NI_{it}}{MVE_{it-1}} + \varepsilon_{it-1}$$

The initial sample contains 94 firms. The impact of influential observations is taken into account using the criteria outlined in Belsley et al. (1980). In panel A, we eliminate observations that have absolute studentized residuals greater than 3 under both the FAS and IFRS regression models and then re-estimate the models. In panel B, we eliminate observations that have absolute studentized residuals greater than 3 in the first estimation and then re-estimate the model. Throughout, ***i*** **denotes firm and** ***t*** **denotes year.** ***CFO*** **is operating cash flow.** ***MVE*** **is the market value of equity at the beginning of the fiscal year.** NI^{FAS} **is earnings under FAS. ΔNI is earnings under IFRS minus earnings under FAS. White (1980) corrected** ***t*****-statistics are in parentheses.**
***,**, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed).**

ity of IFRS earnings for future cash flows is marginally greater than that of FAS. This finding supports H3a.

The results in Panel B of Table 9 reveal that current FAS earnings are significant in predicting one-year-ahead cash flows (α_1 = 0.647). The coefficient on $\Delta NI_{it}/MVE_{it}$ is 0.647 ≤ 1% (two-tailed), which suggests that IFRS earnings adjustments have incremental information beyond FAS earnings. The significant and positive coefficient of the IFRS earnings adjustments is also consistent with H3b. The adjusted R^2 is about 40%. Overall, the results in this section are consistent with the hypothesis that earnings under IFRS are more useful in predicting future cash flows than earnings under FAS.

7.3 Additional analyses and sensitivity checks

7.3.1 The properties of earnings tests

Using calendar year 2003 returns

It is well known that stock returns lead accounting earnings; that is, accounting recognition lags economic events. It is possible that earnings under IFRS are less timely in reporting contemporaneous returns (news) but more timely in reporting past returns than earnings under FAS. We test for this possibility by changing the length of the return window. Specifically, we include the previous year's stock return as an additional explanatory variable or use a two-year return window. The results (not presented) remain unchanged.

Using calendar year 2005 returns

It is common that reconciliation amounts are disclosed with a significant time lag (e.g. 2004 accounting numbers under IFRS are disclosed with 2005 results). It is possible that our timeliness tests suffer from this timing issue. Hung and Subramanyam (2007) point out that the inability of prices to incorporate the effects of IAS adoption potentially biases value relevance tests. We also consider using returns for the calendar year 2005 (and cumulated returns for the years 2004 and 2005). This procedure ensures that the accounting information in IFRS reconciliation adjustments has been publicly available. Again, our inferences remain unaffected by this test.

7.3.2 The value relevance of book values

Using opening balances

In our value relevance tests, we used book values measured under IFRS and FAS for the fiscal year ending December 31, 2004. Note that these accounting amounts include the effects of (i) the opening IFRS balance sheet (as of 1 January 2004) and (ii) the difference between the ending and beginning balance sheets. The opening balances of IFRS/FAS assets and liabilities are available for 80 observations. We conduct sensitivity tests by replacing the ending book values of Model (2) with the beginning book values. The results of this sensitivity analysis (not presented) are qualitatively similar to those for ending book values. Specifically, the information content of IFRS book values of assets and liabilities is not significantly higher than that of FAS book values.

Using an alternative deflator

Barth and Clinch (2009) argue that share-deflated and undeflated specifications generally perform best in mitigating scale effects. Accordingly, we re-estimate our models using number of shares outstanding as a deflator. The general tenor of our results is not affected by this procedure.

The Product model

We also consider alternative model specification. Most of the value relevance literature works with the book value and earnings model derived from the Ohlson (1995) model (e.g. Hung and Subramanyam 2007, Barth et al. 2008). Clarkson et al. (2011) propose extending the traditional linear pricing model to include an additional explanatory term, the product of book value and earnings. The rationale behind this is that both earnings and book values measure permanent earnings and net assets with considerable measurement error. Clarkson et al. (2011) argue that if accounting information exhibits measurement error that increases with the value of the firm, the product term is predicted to have a significant negative coefficient. Their results are consistent with this prediction and also indicate that it is important to control for the non-linearity of the pricing function. Accordingly, we estimate the following models:

$$MVE_{it} = \alpha_0 + \alpha_1 BVE_{it}^{FAS/IFRS} + \alpha_2 NI_{it}^{FAS/IFRS} + \alpha_3 BVE_{it}^{FAS/IFRS} \times NI_{it}^{FAS/IFRS} + \varepsilon_{it}$$

where all variables are as previously defined. As previously, book value of equity and net income are alternatively measured under the IFRS and FAS methods. Furthermore, the models are estimated with WLS, where each observation is weighted by the inverse of market capitalization in order to remove the scale effect (see Easton and Sommers 2003).

Inconsistent with Clarkson et al. (2011), Table 10 shows that the product term is zero although it is statistically significant both using IFRS and FAS accounting numbers. This is probably because we estimate the Product Model using WLS while Clarkson et al. (2011) uses OLS and

TABLE 10. ***The Product model***

	α_0	α_1	α_2	α_3	Adj. R^2%
FAS	**12.107*** (3.58)**	**0.831*** (4.83)**	**1.313 (1.21)**	**0.000*** (3.23)**	**80.8%**
IFRS	**12.310*** (4.37)**	**0.623*** (5.86)**	**3.540*** (3.27)**	**0.000** (2.11)**	**84.9%**
Vuong Z-stat (*p*-value)	**0.002 (0.999)**				

Reported statistics are for the following models:

$$MVE_{it} = \alpha_0 + \alpha_1 BVE_{it}^{FAS/IFRS} + \alpha_2 NI_{it}^{FAS/IFRS} + \alpha_3 BVE_{it}^{FAS/IFRS} \times NI_{it}^{FAS/IFRS} + \varepsilon_{it}$$

The sample contains 94 firms. Throughout, *i* denotes firm and *t* denotes year. *MVE* is the market value of equity at the beginning of the fiscal year. *BVE* is the book value of equity calculated under IFRS/FAS. *NI* is earnings under IFRS/FAS. The models are estimated with weighted least squares, where each observation is weighted by the inverse of market capitalization. White (1980) corrected t-statistics are in parentheses.

*****,**, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed).**

maybe subject to the scale effects. The adjusted-R^2 for the model with IFRS explanatory variables is 84.92% vs. 80.8% for the model with FAS explanatory variables. Our inferences remain unchanged after controlling for potential non-linear effects.

7.3.3 Testing reconciliation components for predicting future cash flows

The results in Table 9 indicate that IFRS earnings adjustments have incremental information beyond FAS earnings in predicting one-year-ahead cash flows. We examine which reconciliation components contain information about future cash flows by estimating the following regression:

$$\frac{CFO_{it+1}}{MVE_{it-1}} = \alpha_0 + \alpha_1 \frac{NI_{it}^{FAS}}{MVE_{it-1}} + \sum \alpha_n \frac{EADJ_{it}}{MVE_{it-1}} + \varepsilon_{it+1}$$

where the variables are as previously defined except $EADJ_{it}$, which represents earnings adjustments. The earnings adjustments examined include six categories that are the same as in Panel A of Table 6. Specifically, the adjustments are IFRS 2 Share-based Payments, IFRS 3 Business Combinations including IAS 36 Impairment of Assets, IAS 2 Inventories, IAS 17 Leases, IAS 19 Employee Benefits, IAS 38 Intangible Assets, and Other (catch-all) components. An untabulated analysis reveals that of these components, IAS 2, IAS 17, IAS 19, and Other, are significantly positively associated with future cash flows. The benefit of using this model is that it is independent of whether market participants obtain the information from the reconciliation reports.

7.3.4 Pre- and post-adoption years

Our analysis has so far focused only on the 2004 accounting numbers. Although this setting controls for correlated omitted variables that vary across firms and years, our evidence is based on only one year's data. In order to validate our findings we also examine the same firms before and after IFRS adoption. Specifically, we repeat our analyses using data from the pre-IFRS adoption period (1999–2003) and from the post-IFRS adoption period (2005–2009). The required financial statement and stock price data is obtained from Thomson Reuters' Worldscope and Datastream databases. For the sake of simplicity, we present only the adjusted R-squares of the models.[35] Note that for the year 2004 R-squares are from both FAS and IFRS regressions taken from Tables 7–9.

Figure 2 presents the evidence for the earnings timeliness tests, while Figures 3 and 4 depict value relevance and prediction of future cash flows results respectively. Figure 2 suggest that earnings timeliness is a rather unstable measure of reporting quality. Thus, we are unable to draw any definite conclusions from the timeliness measure. It is evident from Figure 3 that the value

35 These additional results are available upon request. We also perform t-tests for the mean differences between the periods.

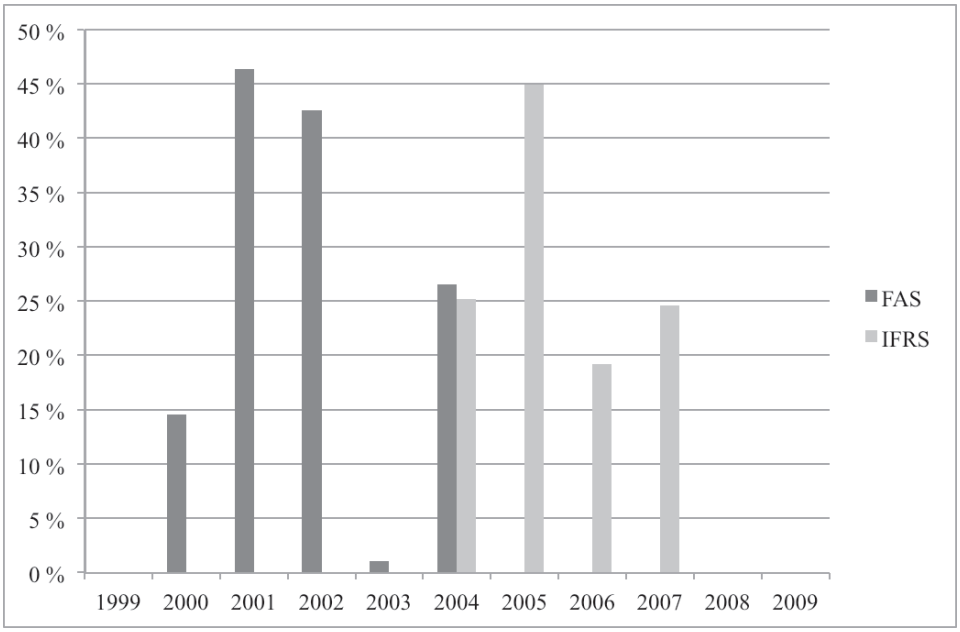

FIGURE 2. ***Adjusted R-squares from the earnings timeliness regressions (earnings on annual returns).***

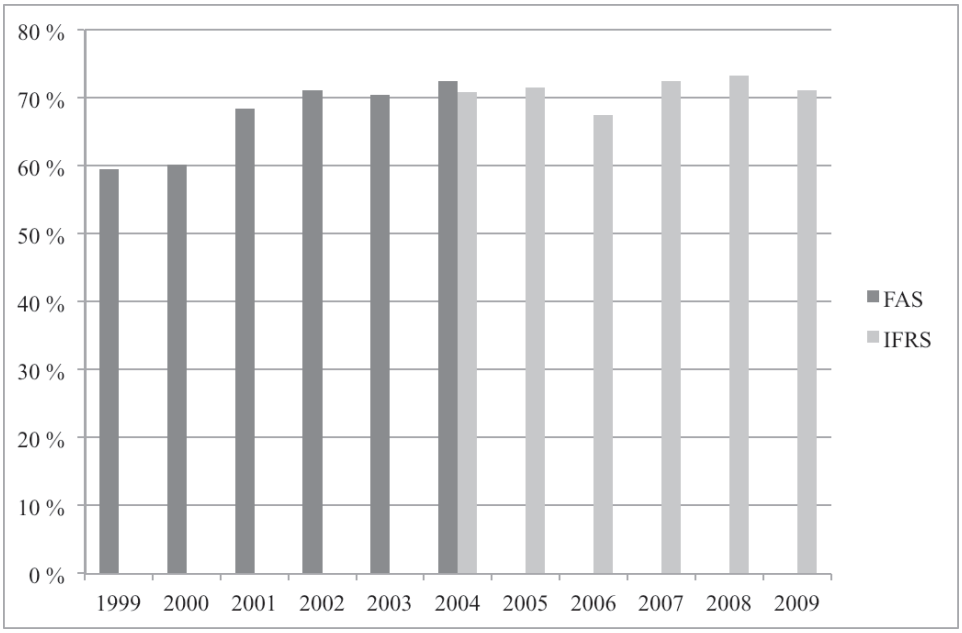

FIGURE 3. ***Adjusted R-squares from the value relevance regressions (market value on book values of assets and liabilities).***

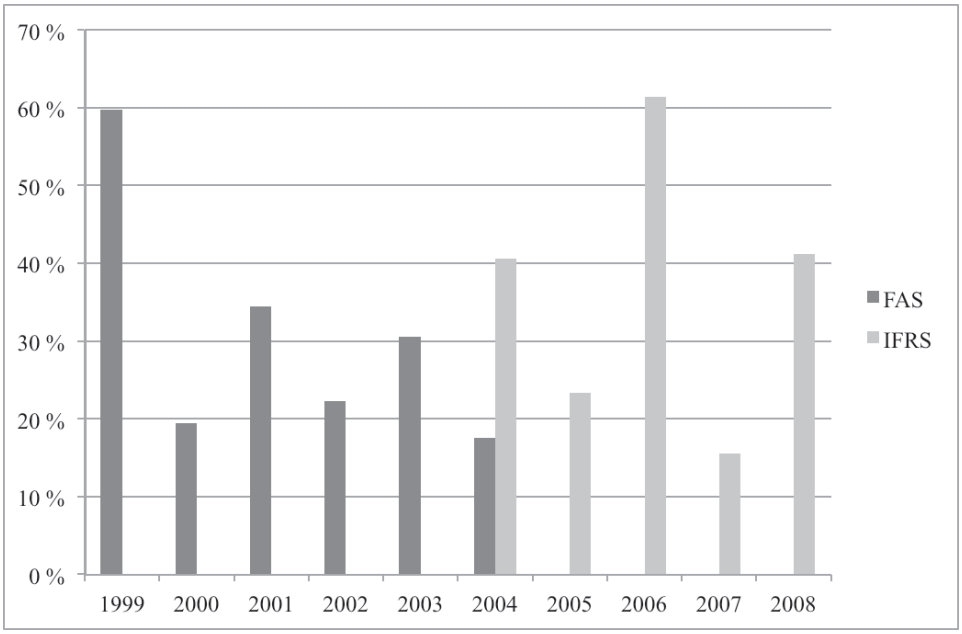

FIGURE 4. ***Adjusted R-squares from the prediction of future cash flows regression (future cash flows on earnings).***

relevance of book values of assets and liabilities are comparable between the pre- and post-IFRS adoption periods. Moreover, this measure seems to be more stable over time than the timeliness measure. Finally, Figure 4 shows that there is no clear pattern with respect to the prediction of future cash flows. In sum, Figures 2–4 are consistent with the results reported earlier and support our overall conclusions.

8 CONCLUSIONS

This study is motivated by the mandatory adoption of IFRS in the European Union in 2005. Using a sample of 94 Finnish firms that released transition statements for the first time in 2004, we attempted to determine whether IFRS financial reporting is superior to FAS. Finland is particularly suitable for examining the effects of mandatory adoption of IFRS on the quality of accounting amounts for at least three reasons. First, our research design allows us to compare two sets of financials for the same firm in the same year, thus mitigating the omitted variables problem. Second, Finland has a high-quality reporting environment, and its domestic standards differ significantly from IFRS. Therefore, we are able to measure the quality of the standards, not the quality

of the enforcement of the standard (see Ball 2001, 2006). Third, Finland permitted firms a choice of accounting standards prior to mandatory IFRS adoption. As a result, firms that expected net benefits from voluntary IFRS adoption are self-selected out of this study. This is an important feature of this study because it is well known that the adoption of IFRS does not benefit all firms in a uniform way.

This study provides empirical evidence of the consequences of mandatory IFRS adoption. We document that IFRS, on average, increases earnings, decreases equity, and increases liabilities. We also show that financial analysts consider IFRS disclosures useful for financial statement analysis. However, according to our measures of information content, IFRS accounting amounts are not of higher quality than accounting amounts based on FAS. Specifically, we find that earnings under IFRS are no more timely in reflecting publicly available news than earnings under FAS. This result is surprising, given the fair-value orientation of IFRS. Furthermore, book values of assets and liabilities have no greater ability to reflect the market value of equity under IFRS than under FAS. This result is also surprising, given that IFRS (FAS) promotes "fair" ("prudent") presentation of assets and liabilities. Finally, earnings under IFRS have relative and incremental information content beyond FAS earnings in predicting one-year-ahead cash flows. Consistent with this, we show that several IFRS reconciliation components have the ability to predict future cash flows. For robustness, we repeat our analyses using data from the pre-IFRS adoption period (1999–2003) and from the post-IFRS adoption period (2005–2009). These results also suggest that IFRS accounting amounts are not of higher quality than accounting amounts based on FAS.

Taken together, we are unable to find systematic evidence that IFRS results in improved accounting quality for mandatory adopters. There are at least four possible explanations for this. First, the sample includes only firms that do not expect net benefits from IFRS. Second, it may be that a strong institutional framework compensates for higher quality accounting standards. Third, it is possible that IFRS may not be superior to local accounting rules. Finally, we acknowledge that low power could be an explanation. Our findings, consistent with those of other studies in mandatory adoption reinforce the notion that it is difficult to draw general conclusions from voluntary IFRS studies (e.g. Ahmed et al. 2010, Goodwin et al. 2008). Overall, our findings imply that mandating IFRS may not be optimal because it removes high-quality firms' signaling mechanism that is costly for low-quality firms to use. In order for the signal to be credible, it must be costly (Spence 1973). Of course, one of the expected benefits of the harmonization of accounting standards is increased consistency and standardization that must be traded off against this signaling benefit.

One of the strengths of this study is that we can focus on data from one country in a single year. It is difficult to observe underlying accounting quality effects by studying firms in different countries because there is substantial variation in their market and regulatory environments. On

the other hand, we acknowledge that our results may not be generalizable to other countries or time periods. However, we believe that our results may be generalized most naturally to other countries with similar economic, institutional, and accounting environments, namely to other Scandinavian countries. We examined firms compelled to adopt IFRS. These firms did not voluntarily adopt IFRS because their perceived expected costs outweighed the expected benefits. Thus, our results reveal nothing about the net effect of IFRS adoption on accounting quality of Finnish listed firms. However, the overall quality of IFRS accounting amounts is likely to improve in future years because of learning effects among managers, regulators, auditors, and others. ■

REFERENCES

AHMED, A. S., M. NEEL, AND D. WANG. 2010. Does mandatory adoption of IFRS improve accounting quality? Preliminary evidence. Working paper, Texas A & M University.

ARMSTRONG, C. S., M. E. BARTH, A. D. JAGOLINZER, AND E J. RIEDL. 2010. Market reaction to the adoption of IFRS in Europe. *The Accounting Review* 85 (1): 31–61.

BALL, R., S. P. KOTHARI, AND A. ROBIN. 2000. The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics* 29 (1): 1–51.

BALL, R. 2001. Infrastructure requirements for an economically efficient system of public financial reporting and disclosure. Brookings-Wharton Papers in Financial Services: 127–169.

BALL, R., A. ROBIN, AND J. S. WU. 2003. Incentives versus standards: properties of accounting income in four East Asian countries. *Journal of Accounting and Economics* 36: 235–270.

BALL, R. 2006. International Financial Reporting Standards (IFRS): Pros and Cons for Investors. *Accounting and Business Research*, International Accounting Policy Forum: 5–27.

BALL, R., A. ROBIN, AND G. SADKA. 2008. Is financial reporting shaped by equity markets or by debt markets? An international study of timeliness and conservatism. *Review of Accounting Studies* 13 (2–3): 168–205.

BALL, R., S. P. KOTHARI, AND V. NIKOLAEV. 2009. Econometrics of the Basu Asymmetric Timeliness Coefficient and the Accounting Conservatism. Working paper, University of Chicago.

BARTH, M. E., W. H. BEAVER, AND W. R. LANDSMAN. 1998. Relative valuation roles of equity book value and net income as a function of financial health. *Journal of Accounting and Economics* 25 (1): 1–34.

BARTH, M E., W. H. BEAVER, AND W. R. LANDSMAN. 2001. The relevance of the value relevance literature for financial accounting standard setting: another view. *Journal of Accounting and Economics* 31 (1–3): 77–104.

BARTH, M E. 2008. Global financial reporting: implications for U.S. academics. *The Accounting Review* 83 (5): 1159–1179.

BARTH, M E., AND G. CLINCH. 2009. Scale effects in capital markets-based accounting research. *Journal of Business Finance and Accounting* 36 (3–4): 253–288.

BARTH, M E., W. R. LANDSMAN, AND M. H. LANG. 2008. International Accounting Standards and accounting quality. *Journal of Accounting Research* 46 (3): 467–498.

BASU, S. 1997. The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics* 24 (1): 3–37.

BEAVER, W. 1998. Financial reporting: an accounting revolution. Prentice-Hall, Upper Saddle River, NJ.

BELSLEY, D. A., E. KUH AND R. E. WELSCH. 1980. Regression Diagnostics: Identifying Influential Data and Sources of Collinearity (New York: Wiley).

BIDDLE, G. C., G. S. SEOW AND A. F. SIEGEL. Relative versus incremental information content. *Contemporary Accounting Research* 12 (1): 1–23.

CAPKUN, V., A. CAZAVAN-JENY, T. JEANJEAN, AND L. A. WEISS. 2008. Earnings management and value relevance during the mandatory transition from local GAAP to IFRS in Europe. Working paper, HEC Paris, ESSEC Business School, and Georgetown University.

CHRISTENSEN, H. B., E. LEE, AND M. WALKER. 2009. Do IFRS reconciliations convey information? The effect of debt contracting. *Journal of Accounting Research* 47 (5): 1167–1199.

CLARKSON, P., J. D. HANNA, G. D. RICHARDSON, AND R. THOMPSON. 2011. The impact of IFRS adoption on the value relevance of book value and earnings. *Journal of Contemporary Accounting and Economics* 7 (1): 1–17.

DASKE, H., L. HAIL, C. LEUZ, AND R. VERDI. 2009. Mandatory IFRS reporting around the world: early evidence on the economic consequences. *Journal of Accounting Research* 46 (5): 1085–1142.

DECHOW, P. M., W. GE, AND C. SCHRAND. 2010. Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics* 50 (2–3): 344–401.

DING, Y., O-K HOPE, T. JEANJEAN, AND H. STOLOWY. 2007. Differences between domestic accounting standards and IAS: measurement, determinants and implications. *Journal of Accounting and Public Policy* 26 (1): 1–38.

EASTON, P. D., AND G. A. SOMMERS. 2003. Scale and the Scale Effect in Market Based Accounting Research. *Journal of Business Finance and Accounting* 30 (1–2): 25–55.

GASSEN, J. AND T. SELLHORN. 2006. Applying IFRS in Germany – determinants and consequences. *Betriebswirtschaftliche Forschung und Praxis* 58 (4): 365–386.

GJERDE, Ø., K. KNIVSFLÅ, AND F. SÆTTEM. 2008. The value-relevance of adopting IFRS: Evidence from 145 NGAAP restatements. *Journal of International Accounting, Auditing and Taxation* 17 (2): 92–112.

GOODWIN, J., K. AHMED, AND R. HEANEY. 2008. The effects of International Financial Reporting Standards on the accounts and accounting quality of Australian firms: A retrospective study. *Journal of Contemporary Accounting and Economics* 4 (2): 89–119.

GUAY, W. AND R. VERRECCHIA. 2006. Discussion of an economic framework for conservative accounting and Bushman and Piotriski (2006). *Journal of Accounting and Economics* 42(1–2): 149–165.

HAIL, L., C. LEUZ, AND P. WYSOCKI. 2010a. Global accounting convergence and the potential adoption of IFRS by the U.S. (Part I): Conceptual underpinnings and economic analysis. *Accounting Horizons* 24 (3): 355–394.

HAIL, L., C. LEUZ, AND P. WYSOCKI. 2010b. Global accounting convergence and the potential adoption of IFRS by the U.S. (Part II): Political factors and future scenarios for U.S. accounting standards. *Accounting Horizons* 24 (4): 567–588.

HOLTHAUSEN, R. W. AND R. L. WATTS. 2001. The relevance of the value-relevance literature for financial accounting standard setting. *Journal of Accounting and Economics* 31 (1–3): 3–75.

HOLTHAUSEN, R. W. 2003. Testing the relative power of accounting standards versus incentives and other institutional features to influence the outcome of financial reporting in an international setting. *Journal of Accounting and Economics* 36: 271–283.

HOLTHAUSEN, R. W. 2009. Accounting Standards, Financial Reporting Outcomes, and Enforcement. *Journal of Accounting Research* 47 (2): 447–458.

HORTON, J. AND G. SERAFEIM. 2010. Market reaction to and valuation of IFRS reconciliation adjusments: first evidence from the UK. *Review of Accounting Studies* 15 (4): 725–751.

HUNG, M., AND K. R. SUBRAMANYAM. 2007. Financial statement effects of adopting international accounting standards: the case of Germany. *Review of Accounting Studies* 12: 623–657.

HYYTINEN, A., I. KUOSA, AND T. TAKALO. 2003. Law or finance: evidence from Finland. *European Journal of Law and Economics* 16 (1): 59–89.

IMD. World Competitiveness Yearbook 2006, Lausanne.

JARVA, H. 2009. Do firms manage fair value estimates? An examination of SFAS 142 goodwill impairments. *Journal of Business Finance and Accounting* 36 (9–10): 1059–1086.

JEANJEAN, T. AND H. STOLOWY. 2008. Do accounting standards matter? An exploratory analysis of earnings management before and after IFRS adoption. *Journal of Accounting and Public Policy* 27 (6): 480–494.

KASANEN, E., J. KINNUNEN, AND J. NISKANEN. 1994. Dividend-based earnings management: Empirical evidence from Finland. *Journal of Accounting and Economics* 22 (1–3): 283–312.

KAUFMANN, D., A. KRAAY, AND M. MASTRUZZI. 2009. Governance matters VIII: Aggregate and individual indicators 1996–2008. Working paper, The World Bank.

KOTHARI, S. P., K. RAMANNA, AND D. J. SKINNER. 2010. Implications for GAAP from an analysis of positive research in accounting. *Journal of Accounting and Economics* 50 (2–3): 246–286.

LANTTO, A-M., AND P. SAHLSTRÖM. 2009. Impact of International Financial Reporting Standard adoption on key financial ratios. *Accounting and Finance* 49 (2): 341–361.

LA PORTA, R., F. LOPEZ-DE-SILANES, A. SHLEIFER, AND R. W. VISHNY. 1998. Law and finance. *Journal of Political Economy* 106 (6): 1113–1155.

LEUZ, C., D. NANDA, AND P. D. WYSOCKI. 2003. Earnings management and investor protection: an international comparison. *Journal of Financial Economics* 69: 505–527.

LEUZ, C. AND P. WYSOCKI. 2008. Economic Consequences of Financial Reporting and Disclosure Regulation: A Review and Suggestions for Future Research. Working paper, University of Chicago.

LI, S. 2010. Does Mandatory Adoption of International Financial Reporting Standards in the European Union Reduce the Cost of Equity Capital? *The Accounting Review* 85(2): 607–636.

NOBES, C. AND R. PARKER. 2002. Comparative International Accounting 7th Edition. Prentice-Hall, Englewood Cliffs, NJ.

OHLSON, J. A. 1995. Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research* 11 (2), 661–687.

PAANANEN, M. AND H. LIN. 2009. The development of accounting quality of IAS and IFRS over time: The case of Germany. *Journal of International Accounting Research* 8 (1): 31–55.

PAJUNEN, K. 2009. The internationalisation of Finnish financial reporting between 1973 and 2005 – a historical analysis. *The Finnish Journal of Business Economics* (1), 11–33.

PIRINEN, P. 2005. Economic and normative pressures as drivers for the adoption of International Accounting Standards in Finland since 1976. *European Accounting Review* 14 (1), 213–235.

SCHADEWITZ, H. AND M. VIERU. 2007. How markets valuate and response to IFRS reconciliations adjustments in Finland. Working paper, Turku School of Economics.

SODERSTROM, N. S. AND K. J. SUN. 2007. IFRS adoption and accounting quality: A review. *European Accounting Review* 16 (4), 675–702.

SPENCE, M. 1973. Job market signaling. *The Quarterly Journal of Economics* 87 (3), 355–374.

TSALAVOUTAS, I., P. ANDRÉ, AND L. EVANS. 2010. Transition to IFRS and value relevance in a small but developed market: A look at Greek evidence. Working paper, University of Stirling.

VIERU, M. AND H. SCHADEWITZ. 2010. Impact of IFRS transition on audit and non-audit fees: evidence from small and medium-sized listed companies in Finland. *The Finnish Journal of Business Economics* (1), 11–41 .

VUONG, Q. H. 1989. Likelihood Ratio Tests for Model Selection and Non-nested Hypotheses. *Econometrica* 57 (2): 307–333.