

Impact of International Financial Reporting Standard adoption on key financial ratios

Anna-Maija Lantto, Petri Sahlström

Department of Accounting and Finance, University of Oulu, Oulu, 90014, Finland

Abstract

Although previous research has investigated the economic consequences of International Financial Reporting Standard (IFRS) adoption, there is little evidence on the impact of IFRS adoption on key financial ratios. To fill this gap, we examine this issue in a continental European country (Finland). Our results show that the adoption of IFRS changes the magnitude of the key accounting ratios. Moreover, we extend the literature by showing that the adoption of fair value accounting rules and stricter requirements on certain accounting issues are the reasons for the changes observed in accounting figures and financial ratios.

Key words: International financial reporting standards; IFRS; Financial ratios

JEL classification: M41

doi: 10.1111/j.1467-629X.2008.00283.x

1. Introduction

Earlier literature shows that the level of capital market orientation of a financial environment explains the differences in accounting systems internationally. The most obvious illustration of this is probably the difference between the UK and USA accounting systems compared with those of continental Europe (see e.g. Nobes, 1998). D'Arcy (2001) identifies the main differences in accounting practices between European and North American clusters, including the International Accounting Standards Committee (IASC) / International Accounting Standards Board (IASB), and reports that the North American cluster is clearly more capital market orientated than the European cluster.

We gratefully acknowledge the helpful comments from Ian Zimmer, an anonymous referee, Seppo Ikäheimo, Juha-Pekka Kallunki and participants at the Doctoral Tutorial in Accounting in Turku (2007) for their helpful comments. The financial support of OKO Bank Research Foundation is also greatly appreciated.

Received 10 September 2007; accepted 8 August 2008 by Ian Zimmer (Deputy Editor).

However, the financial environments of the continental European countries have recently developed from the so-called bank-based system towards a market-orientated one.¹ In response to this development, national accounting systems have developed, too. The biggest step in this development was taken in 2005, when all listed firms in member states of the European Union started to report their financial statements according to the International Financial Reporting Standards (IFRS). Ding *et al.* (2006) provide evidence on the significance of this step by reporting that domestic accounting practices differ significantly from those of IFRS/IAS, especially in continental European countries.

An important question arising from this development is whether these changes in accounting systems really have improved the quality of financial reporting. Earlier studies report that the adoption of capital market user-orientated standards, such as IFRS, lead to improved accounting quality in continental European countries (e.g. Bartov *et al.*, 2005; Daske and Gebhardt, 2006; Barth *et al.*, 2008). Although the literature finds that the differences in accounting standards affect financial reporting quality, it does not describe what kind of impact these differences have on the accounting numbers and key financial ratios used by financial analysts, investors and other financial institutions as key performance indicators.

The purpose of the present paper is to fill this gap by measuring the impact of IFRS adoption on key financial ratios in a continental European country (Finland). To investigate the issue we use a three-step approach. First, we create a comprehensive database of financial statement information prepared under domestic accounting standards (DAS) and IFRS from the published transition reports. Second, by using the database created, we investigate whether IFRS changes key financial ratios by considering the differences between financial ratios calculated on the basis of DAS and IFRS for the same reporting period. Third, we investigate the main reasons for the differences by analysing the differences in the DAS-based and IFRS-based financial statement items and accounting practices.

The data are from Finland for three main reasons. First, the transition reporting of Finnish entities is more extensive compared to that of other European countries providing the data needed. Second, Finnish Accounting Standards (FAS) are similar to the DAS of other continental European countries. Therefore, Finland is a good example of a continental European country in this respect. Third, Finland has a strong system of legal enforcement and high-quality DAS (see La Porta *et al.*, 1998).² Therefore, we assume that the Finnish authorities provide high-quality supervision and that the transition reporting is generally reliable.

¹ The World Federation of Exchanges and the World Bank databases provide statistics on the development of financial structures.

² A system of legal enforcement consists of the efficiency of the judicial system, rule of law, corruption and risk of expropriation.

The present paper contributes to the literature on the economic consequences of IFRS adoption (e.g. Bartov *et al.*, 2005; Hope *et al.*, 2005; Daske and Gebhardt, 2006; Ding *et al.*, 2006; Jones and Higgins, 2006; Barth *et al.*, 2008) by investigating the impact of IFRS adoption on key accounting ratios in a continental European country. Moreover, we extend the existing literature (e.g. Callao *et al.*, 2007) calling for evidence about the direct effect of each standard on the accounting figures by showing which financial statement items and individual IFRS/IAS standards explain the differences in the key accounting ratios.

The results of the study indicate that the adoption of IFRS changes the magnitude of the key accounting ratios of Finnish companies. Only the value of the current ratio among the ratios investigated does not change significantly after converting from FAS to IFRS. We find that after converting financial statements from FAS-based to IFRS-based, the profitability ratios increase by 9–19 per cent and the price-to-earnings (PE) ratio decreases by 11 per cent. Moreover, the results also imply a 2.9 per cent increase in gearing and a 0.7 per cent decline in equity ratio. In addition, quick ratio decreases by 0.2 per cent. Our results imply that the increases in the profitability ratios and decrease in the PE ratio can be explained by increases in income statement profits. Moreover, the increase in debt items and decrease in equity explain the changes in the financial leverage ratios. The decreases in liquidity ratios can mainly be explained by the increase in current liabilities. Our results indicate that the adoption of rules concerning fair value accounting, lease accounting and income tax accounting, as well as rules concerning the accounting of financial instruments, explain the changes in the key accounting ratios.

The remainder of the present paper is organized as follows. The next section reviews the literature. Section 3 describes the research methodology, design and data. Section 4 reports the results. Finally, concluding remarks are presented in Section 5.

2. The impact of IFRS adoption on accounting figures

Approximately 7000 publicly traded European firms were required to adopt IFRS in 2005. Most of the European adopting firms had previously applied DAS, which differ from IFRS. Therefore, the adoption process is costly, complex and burdensome for European firms (Jermakowicz and Gornik-Tomaszewski, 2006). However, IFRS adoption is perceived to improve the financial transparency and comparability of financial statements between European firms. This is supported by the finding of Hope *et al.* (2005) that countries are more likely to adopt IFRS to improve investor protection, to make their capital market more accessible to foreign investors, and to improve the comparativeness and comprehensiveness of their financial information. Prior studies also show that the adoption of IFRS improves the accounting quality of publicly traded European firms (e.g. Daske and Gebhardt, 2006; Barth *et al.*, 2008). Overall, the adoption of IFRS seems to benefit investors, especially in

countries like continental European countries where the information needs of investors have not been the primary interest of standard setters.

Prior literature shows that in code-law countries, such as continental European countries, capital provided by the state, banks or families tends to be more important than in common-law countries, such as those of North America, where firms are mainly financed by a large number of private investors (e.g. La Porta *et al.*, 1997). Therefore, whereas information asymmetry between capital providers and a firm is likely to be resolved in the continental European countries by providing accounting information privately to the capital providers, in the North American countries it is likely to be resolved by providing high-quality public financial reporting (e.g. Nobes, 1998).

The accounting classification literature reports that the differences mentioned above between financial systems across countries and the difference between ways of resolving information asymmetry explain the differences between accounting practices internationally. By investigating the financial reporting rules of 15 national systems, d’Arcy (2001) identifies two clusters: European and a North American (including the IASC/IASB). D’Arcy (2001) finds that the North American cluster is more orientated to capital market users (i.e. accounting methods are marked-orientated and require adequate presentation) than the European cluster. Therefore, the level of differences between DAS and IFRS is especially great in continental European countries (see Ding *et al.*, 2006).

2.1. Differences between IFRS and continental European accounting practices

By analysing Generally Accepted Accounting Principles (GAAP) 2001: ‘A Survey of National Accounting Rules Benchmarked against International Accounting Standards’ (Nobes, 2001), two reasons for the reported inconsistencies between the DAS of continental European countries and IFRS can be found: comprehensiveness and capital market orientation. First, in many cases rules that are covered in IFRS are missing from DAS, or under DAS it might be optional to follow the rules that are congruent with IFRS. Second, the domestic rules might follow the tax regulations, whereas the accounting methods included in IFRS are capital market orientated. For instance, taxation is tied to accounting in Finland, meaning that most of the tax incentives can be claimed only if the same treatment is applied to the items in question in the commercial financial statements (see e.g. Näsi and Virtanen, 2003). Although IFRS emphasizes balance sheet valuation (i.e. asset/liability recognition and measurement), DAS in continental European countries are dependent on tax reporting considerations and emphasize a prudent approach to asset valuation and liability recognition. Therefore, the domestic standards of continental European countries require different accounting and reporting treatments 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 the DAS of

continental European countries, 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).

IAS 19 requires employee benefit obligations to be measured at the present value. However, rules concerning accounting for employee benefit obligations are missing from DAS (e.g. Belgium, Denmark, Finland, France, Greece, Italy and Luxembourg) or the calculations follow tax regulations in accordance with DAS (e.g. Austria and Germany). Although IAS 12 requires a deferred tax liability to be recognized for all taxable temporary differences (some exceptions), rules concerning the treatment of deferred tax are missing from DAS (e.g. Greece, Luxembourg and Portugal) or the deferred tax is/can be calculated on the basis of timing differences rather than temporary differences (e.g. Austria, Belgium, Finland, France, Germany and Spain). In addition, deferred tax assets are not required/need not be recognized in accordance with many DAS (e.g. Austria, Belgium, Finland, Germany, Italy and Switzerland), while IAS 12 requires a deferred tax asset to be recognized for all deductible temporary differences to the extent that is probable that the deductible temporary difference can be utilized (some exceptions).

IAS 38 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. Therefore, items such as research expenditures cannot be capitalized. However, in many cases, DAS (e.g. Austria, Belgium, Finland, France, Germany, Greece, Italy, Portugal and Spain) allow research costs and/or certain other internally generated intangible assets, including set-up/start-up/pre-operating costs or formation expenses, to be capitalized. Moreover, DAS (e.g. Finland) emphasizes prudent capitalization of development expenditures. As a consequence, the capitalization of development expenditures under DAS might differ from those capitalized under IFRS.

Furthermore, while IAS 11 requires the costs and revenues of construction contracts to be recognized on a stage of completion basis, in accordance with many DAS (e.g. Belgium, Finland, France, Greece, Italy and Portugal), recognition by the stage of completion is optional. While IAS 2 requires inventory to be measured at the lower of cost and net realizable value, DAS (e.g. Austria, Finland, Germany, Greece, Italy, Luxembourg, Portugal and Spain) allows/ requires inventories to be measured at the replacement cost instead of net realizable value/costs. Moreover, according to DAS (e.g. Austria, Finland, Germany and Luxembourg), inventories can be valued without the inclusion of production overheads, while IAS 2 requires inventory to be valued at full cost.

IFRS requires the transactions and events to be accounted for and presented in accordance with their substance and economic reality and not merely their legal form (a concept named *substance over form*). However, DAS in continental European countries (EU) do not include the requirement and, therefore, the

transactions and events might be accounted for and presented in accordance with merely their legal form. Therefore, while IFRS (IAS 17) requires leases to be accounted for and presented in accordance with their substance and economic reality, DAS do not include specific rules concerning accounting for leases (e.g. Italy and Portugal), DAS do not require the rules to be followed (e.g. Finland and France) or leases are accounted for according to tax rules (e.g. Austria and Germany).

In 2003, the IASB issued the standard share-based payments (IFRS 2) to secure a consistent way of reporting share-based payments. The standard changed accounting practices, because few countries have standards on the topic. It is typical that transactions in which share options are granted to employees are not recognized in financial statements (e.g. in continental European countries). By contrast, the issued IFRS 2 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.

Capital market-orientated IFRS emphasize fair value accounting, because it incorporates more information into the financial statements and, hence, makes them more useful to investors. Therefore, the IASB considers fair value to be the most relevant measurement basis. In addition to the above-mentioned pension liabilities (IAS 19), a substantial portion of other liabilities and assets are required or allowed by IFRS to be measured at fair value. IFRS requires assets/intangible assets impairments to fair value (IAS 36/IAS 38) and requires fair value for most financial instruments (IAS 39) and for biological assets (IAS 41). Moreover, IFRS requires tangible and intangible fixed assets that have been acquired in a business combination (IFRS 3), pension assets (IAS 19) and share-based payment liabilities (IFRS 2) to be measured at fair value. After initial recognition IFRS allows investment property (IAS 40) and property, plant and equipment (IAS 16) to be measured at fair value. By contrast, accounting practices in continental European countries have traditionally been based on historical costs but required downward valuations for permanent impairments of long-term assets. In very rare cases there is a fair value measurement option. For instance, if the fair value of a land or water area or security is permanently and significantly higher than its historical cost, the Finnish legislation allows the measurement at market value. However, in 2001 the Internal Market Council (EU) adopted Directive 2001/65/EC, which gives member states the option to permit or require the use of fair value valuation methods to account for certain classes of financial instruments. The Directive was due to be transposed into the national law of member states by January 2004.

In addition to fair value accounting, depreciation of assets in accordance with DAS might differ from that required by IFRS. Because IFRS emphasizes the importance of presenting balance sheets at fair value, it requires assets with definite useful life to be depreciated/amortized systematically and assets with indefinite useful life to be assessed for impairment. However, the DAS of continental

European countries also requires assets with indefinite useful life to be amortized. Therefore, while IFRS requires goodwill to be assessed annually for impairment, DAS requires goodwill to be amortized systematically (e.g. Finland, France and Italy) or allows goodwill to be deducted immediately against equity (e.g. Austria, Germany, Greece and Luxembourg).

2.2. Impact of IFRS adoption on accounting figures in continental European countries

As earlier reported here, the domestic accounting standards of continental European countries differ considerably from the IFRS. Therefore, the adoption of IFRS in continental European countries probably has an impact on the accounting figures. As reported earlier, in many cases companies have an option to report under IFRS, because DAS allows companies to use the same accounting treatment as IFRS or, because the rules that are covered in IFRS are missing from DAS. However, in these cases, it is impossible to predict the remaining impact of accounting reporting practice on accounting figures, because companies have an opportunity to choose whether they report under IFRS or not. Therefore, the impact of these reported differences on accounting figures is an empirical question.

Because the DAS of continental European countries have mainly permitted valuation of assets using historical cost methods, the adoption of fair value accounting probably has an impact on accounting figures. While DAS mainly requires downward valuations for permanent impairments of long-term assets, the adoption of fair value accounting will probably increase the balance sheet items of adopting companies. However, the impairment accounting rules of DAS (e.g. Austria, Finland and Germany) differ from those of IFRS (IAS 36) and, therefore, these differences could lead to different accounting figures. As a consequence, the impact of fair value accounting adoption on accounting figures is also an empirical question since it is impossible to predict the exact impact of the adoption on accounting figures.

3. Research methods, design and data

3.1. Research methods and design

The purpose of the present paper is to investigate whether there are changes in accounting numbers and key accounting ratios after conversion from DAS to IFRS. Therefore, we first analyse the differences between financial ratios calculated before and after conversion from FAS to IFRS and test the statistical significances of the differences. Furthermore, if there are differences between the financial ratios calculated before and after the conversion, we investigate the main reasons for the differences using a two-step approach.

First, we investigate which of the financial statement items (i.e. the balance sheet items and income statement items) changed after the conversion from

FAS to IFRS. Therefore, we calculate the differences between financial statement items before and after the conversion and test the statistical significance of the differences. Moreover, we analyse these differences to explain which of them explain the differences in the financial ratios.

Second, we further investigate which of the IFRS/IAS standards cause the differences in the financial ratios. This is done by identifying the standards causing the differences in the financial statement items and investigating which of the identified IFRS/IAS cause statistically significant changes in FAS-based financial ratios. To analyse the impact of the adopted standards in detail, we examine which standards caused changes in the components of the ratio (i.e. the numerator and denominator), separately and together. Therefore, we calculate the restated ratios by adding a specific standard, first, to the numerator of the ratio, then to the denominator of the ratio and finally to both. This allows us to explore whether the differences between the ratios are mainly caused by restatements in numerator, denominator or in both elements. Restated ratios can be expressed as:

$$R_{\text{IFRS/IAS}} = \frac{\text{Numerator}_{\text{FAS}} + \text{standard}_{\text{IFRS/IAS}}}{\text{Denominator}_{\text{FAS}} + \text{standard}_{\text{IFRS/IAS}}}. \quad (1)$$

Furthermore, we calculate the difference between the FAS-based ratios and the ratios restated by a specific IFRS/IAS standard. The difference between the ratios can be expressed as:

$$= R_{\text{IFRS/IAS}} - R_{\text{FAS}}. \quad (2)$$

We chose three different key economic dimensions of a firm (i.e. profitability, financial leverage and liquidity) to investigate the impact of IFRS adoption on accounting numbers. Moreover, we investigate one financial market ratio due to its current importance in financial statement analysis. The profitability ratios analysed are operating profit margin (OPM), return on equity (ROE) and return on invested capital (ROIC). Leverage is measured by equity ratio (ER) and gearing ratio (GR). In addition, liquidity ratios used in the study are current ratio (CR) and quick ratio (QR), and the market-based ratio analysed is price to earnings ratio (PE).

3.2. Data

IFRS 1 (First-time Adoption of International Financial Reporting Standards) requires entities to explain how the transition from previous GAAP to IFRS affects its reported financial position, financial performance and cash flows. The standard requires, for instance, that an entity's first IFRS financial statements include reconciliations of its equity and profit or loss reported under previous GAAP to its equity and profit or loss under IFRS. IFRS 1 states the minimum

requirements. In addition, the Committee of European Securities Regulators (CESR) has issued its recommendations for additional guidance regarding the transition to IFRS. However, each national regulator could decide to go beyond and require full or partial compliance with the CESR guidelines. Therefore, the transition reporting varies across countries.

We use the transition reports of Finnish entities in our study for three reasons. First, the Finnish Financial Supervision Authority (FIN-FSA) reports that the transition reporting of Finnish entities was extensive compared to that of other European countries. We verified this issue by comparing the transition reports of various European countries. The transition reports (reconciliation statements) of Finnish entities include the FAS-based and IFRS-based financial statement items and the differences between them. Moreover, they present the IFRS/IAS that cause those differences; that is, the effect (in euros) of each standard on a financial statement item. While the transition reports of Finnish entities present the effect of the IFRS/IAS on all important financial statement items (see Panels B and C of Table 2), Italian listed companies, for example, only report the effect of IFRS/IAS on shareholders' equity and net income (see Cordazzo, 2008). Therefore, the transition reports of Finnish entities provide the data needed to investigate not only the effect of the changes in financial statement items, but also each IFRS/IAS, on financial ratios. Second, as reported in the earlier section, the accounting requirements of FAS are similar to the GAAP of other continental European countries. Therefore, the transition from FAS to IFRS is a good example of the transition from DAS (of a continental European country) to IFRS. Third, Finland has a strong system of legal enforcement and high-quality DAS (see e.g. La Porta *et al.*, 1998). Therefore, we expect that the Finnish authority will provide high-quality supervision and that the transition reporting is generally reliable in Finland compared to the other countries.

The FIN-FSA required firms listed on the Helsinki Stock Exchange to report the effects of transition from FAS to IFRS. The data of the study were collected from firms' press releases (transition reports) where they present the major changes in accounting principles, convert from FAS to IFRS, and present the effects of the transition from FAS to IFRS on consolidated financial statements (as described above). Overall, 125 firms were required to issue transition reports in 2005. Moreover, six firms converted before 2004 and, therefore, issued their transition reports before 2005. Only the firms reporting all the information needed to calculate the seven financial ratios and one market-based financial ratio were included in the sample, which gives a final sample of 91 firms. Most (i.e. 85 out of the 91 firms) converted in 2004. Five of the firms converted in 2003 and one of the firms converted in 2002. The firms represent almost all industries and all sizes (i.e. large, medium and small listed firms).

In assessing the changes in accounting figures and the importance of each standard in explaining the observed changes in accounting figures, it should

Table 1
Descriptive statistics of financial ratios

Ratio	Mean	Median	SD	Skewness	Kurtosis	Minimum	Maximum
<i>Panel A: Financial ratios calculated under FAS</i>							
OPM	0.0657	0.0616	0.2467	-3.0874	23.2539	-1.5885	0.6855
ROE	0.0391	0.1063	0.3229	-2.9526	11.6495	-1.7345	0.6478
ROIC	0.0859	0.0995	0.1717	-1.5100	4.4034	-0.6092	0.4462
GR	0.5147	0.3753	0.7458	0.9435	1.3620	-1.3088	2.9103
ER	0.4967	0.4783	0.1768	0.5744	0.1422	0.1568	0.9981
QR	3.5811	0.9638	19.7304	9.3620	88.6083	0.0360	188.5316
CR	7.8776	1.4403	55.7204	9.4988	90.4629	0.0360	532.8228
PE	15.8245	13.3415	38.8936	3.8773	23.0716	-78.0000	262.5000
<i>Panel B: Financial ratios calculated under IFRS/IAS</i>							
OPM	0.0592	0.0668	0.4708	-7.0301	62.3634	-3.9919	0.8544
ROE	-0.1938	0.1282	2.8210	-9.4473	89.8042	-26.7234	0.7239
ROIC	0.0948	0.1061	0.1639	-1.8759	8.0004	-0.7518	0.4552
GR	0.5497	0.4355	0.9257	0.9867	6.5416	-2.8149	4.9792
ER	0.4522	0.4474	0.3005	-4.4354	33.3932	-1.7757	0.9951
QR	1.9730	0.9584	4.9150	7.3195	58.4182	0.0359	43.2987
CR	2.4450	1.4160	5.2601	6.6813	47.1235	0.0359	43.2987
PE	10.6541	11.1048	37.8835	-0.2439	19.8519	-206.0000	180.0000
<i>Panel C: Differences between ratios calculated under FAS and IFRS/IAS</i>							
OPM	-0.0065	0.0076	0.2821	-6.8034	59.5074	-2.4034	0.6396
ROE	-0.2328	0.0203	2.7141	-9.3723	88.9698	-25.6987	2.4584
ROIC	0.0089	0.0087	0.0730	-2.1212	20.4911	-0.4571	0.2596
GR	0.0350	0.0110	0.5882	-4.0091	35.4150	-4.3121	2.1436
ER	-0.0445	-0.0035	0.2095	-8.6301	79.1074	-1.9553	0.0734
QR	-1.6081	-0.0021	15.2281	-9.5300	90.8794	-145.2329	2.5773
CR	-5.4326	-0.0017	51.3112	-9.5389	90.9942	-489.5241	0.6564
PE	-5.1704	-1.4239	54.1387	-0.7595	14.4997	-283.5000	245.4545

CR, current ratio; ER, equity ratio; FAS, Finnish Accounting Standards; GR, gearing ratio; IAS, International Accounting Standards; IFRS, International Financial Reporting Standards; OPM, operating profit margin; PE, price to earnings ratio; QR, quick ratio; ROE, return on equity; ROIC, return on invested capital; SD, standard deviation.

noted that there is a limitation in our data due to the exemptions from other IFRS granted by IFRS 1. On the basis of IFRS 1, entities were not required to apply the standard Financial Instruments: Recognition and Measurement (IAS 39) until 1 January 2005. Therefore, our data include 24 entities that did not apply IAS 39 until 1 January 2005. Therefore, our results might not tell the whole truth about the consequences of IAS 39 adoption.

Table 1 presents summary statistics for seven financial ratios and one market-based financial ratio. Ratios are calculated for the fiscal year when firms converted from FAS to IFRS, because firms reported consolidated financial statements in accordance with FAS and IFRS for that year. The descriptive statistics presented in Table 1 show that the ratios are not normally distributed

and there is a considerable variation in ratios. Significant skewness and kurtosis clearly indicate that the data are non-normal. Prior research also reports that financial ratios are non-normal (e.g. Ezzamel and Mar-Molinero, 1990). Because the descriptive statistics reveal that the distributions of ratios are extremely non-normal, non-parametric tests are used in the latter investigations. Therefore, we use the median values of the financial ratios and the financial statement items in investigations and test the statistical significances of the differences using the sign test and the Wilcoxon signed-rank test. These tests do not require assumptions about the form of the distribution of the measurements. For the sign test, under the null hypothesis positive and negative changes in differences are equally likely. The Wilcoxon test is used for testing the null hypothesis that the sum of the positive ranks the sum of the negative ranks equally.

4. Results

4.1. Differences between the FAS-based and IFRS-based financial ratios

Panel A of Table 2 presents the median values of seven financial ratios and one market-based financial ratio calculated under FAS and IFRS. In addition, Table 2 reports the difference between the ratios and the statistical significances of the differences. The results in Panel A indicate that only the difference between current ratios calculated under FAS and IFRS does not significantly differ from zero. However, all other differences are significantly (at the 5 per cent level) different from zero. Moreover, the results indicate that after financial statements have been converted from FAS-based to IFRS-based the profitability ratios (i.e. OPM, ROE and ROIC) increase by 9–19 per cent. The results also imply a 2.9 per cent increase in GR and a 0.7 per cent decline in ER. In addition, liquidity ratios (i.e. QR and CR) decrease by 0.1–0.2 per cent and the market-based ratio (i.e. PE) decreases by 11 per cent. In general, the results indicate that IFRS changes the magnitudes of the financial ratios and one market-based financial ratio considerably. The changes in the profitability ratios and in the PE ratio are quite large from the practical point of view.

4.2. Explaining the differences in financial ratios by financial statement items

To investigate the main reasons for the differences between the FAS-based and IFRS-based ratios, we first examine the differences between FAS-based and IFRS-based financial statement items. Panels B and C of Table 2 report the median values of income statement and balance sheet items prepared in accordance with FAS and IFRS, and the median values of the differences between them. Moreover, Table 2 also reports the statistical significances of the differences. It must be noted here that the change might be statistically significant even though the median value of the difference between FAS-based and IFRS-based

Table 2
Medians of financial ratios and financial statement items (thousand euros)

	FAS	IFRS/IAS	Difference	P1	P2
<i>Panel A: Financial ratios</i>					
OPM	0.0616	0.0668	0.0076	***	***
ROE	0.1063	0.1282	0.0203	***	***
ROIC	0.0995	0.1061	0.0087	***	***
GR	0.3753	0.4355	0.0110	**	***
ER	0.4783	0.4474	-0.0035	**	***
QR	0.9638	0.9584	-0.0021	**	**
CR	1.4403	1.4160	-0.0017		
PE	13.3415	11.1048	-1.4239	***	***
<i>Panel B: Income statement</i>					
Sales	97 140	96 469	0	**	***
Operating profit	8896	9298	1064	***	***
Financial income and expenses	-730	-779	-4	***	**
Income taxes	-2271	-2084	-20	**	**
Net profit (loss)	7966	7586	800	***	***
<i>Panel C: Balance sheet</i>					
Assets					
Inventories	12 290	9956	0		
Cash and cash equivalents	6601	6601	0		
Current assets	46 444	45 610	7		
Shareholder's equity and liabilities					
Equity (1 January)	52 799	48 104	-627	***	***
Equity (31 December)	46 163	48 238	301		
Equity (average)	49 928	49 834	-8		
Long-term debt (1 January)	12 200	16 015	161	***	***
Long-term debt (31 December)	11 300	15 300	188	***	***
Long-term debt (average)	11 750	15 405	229	***	***
Current debt (1 January)	8161	8164	0	***	***
Current debt (31 December)	9900	10 281	61	***	***
Current debt (average)	9221	9549	48	***	***
Total equity and debt (average)	69 249	73 079	389	***	**
Advances	11 600	11 600	0		
Total current liabilities	29 656	30 097	100	***	***
Total equity and liabilities (1 January)	79 573	83 310	1218	***	***
Total equity and liabilities (31 December)	84 848	95 247	2500	***	***
Total equity and liabilities (average)	85 442	93 844	2303	***	***

** and *** indicate significance at 5 and 1 per cent levels, respectively. P1, probability of sign statistics; P2, probability of Wilcoxon signed-rank statistics. CR, current ratio; ER, equity ratio; FAS, Finnish Accounting Standards; GR, gearing ratio; IAS, International Accounting Standards; IFRS, International Financial Reporting Standards; OPM, operating profit margin; PE, price to earnings ratio; QR, quick ratio; ROE, return on equity; ROIC, return on invested capital.

item is zero due to the large number of firms in which the effect of transition is zero (e.g. sales and current debt (1 January)).

In general, the results reveal that most of the FAS-based and IFRS-based income statement and balance sheet items differ significantly at the 5 per cent level. Only

the components of current assets (i.e. inventories, cash and cash equivalents and current assets), equity (31 December), equity (average) and advances are unchanged. The results reveal a positive change in income statement numbers (i.e. higher profitability and lower expenses) and a negative change in balance sheet numbers (i.e. increase in debt items and decrease in equity). In addition, the results reveal that the total equity and liabilities increase after the change of reporting standards.

After identifying the differences between the FAS-based and IFRS-based financial statement items, we examine which of them explain the differences in the financial ratios. Therefore, we compare the results presented in Panels A–C. We find that the increase (12 per cent) in OPM is caused by a relatively greater increase in the numerator (i.e. operating profit) than in the denominator (i.e. sales). The considerable (19 per cent) increase in ROE is explained by an increase in the numerator (i.e. net profit), meanwhile the denominator (i.e. equity (average)) of the ratio decreases, but not significantly. Moreover, ROIC increases (9 per cent) because the numerator of the ratio (i.e. operating profit) increases relatively more than the denominator (i.e. total equity and debt (average)). The considerable (11 per cent) decrease in PE ratio is caused by an increase in net profit. In general, the increases in the profitability ratios (OPM, ROE and ROIC) and the decrease in the market-based financial ratio (PE) can mainly be explained by the increases in the income statement profits.

The negative change in balance sheet numbers (i.e. increase in debt items and decrease in equity) explains changes in financial leverage ratios as follows. A 2.9 per cent increase in GR is caused by a relatively greater increase in the numerator (i.e. debt items (long-term debt and current debt)), than in the denominator (i.e. equity (31 December)). In addition, ER decreases (0.7 per cent), because the numerator (i.e. equity (31 December)) increases, even though not significantly, relatively less than the denominator (i.e. total equity and liabilities (31 December)). The liquidity ratio (i.e. QR) decreases 0.2 per cent, because the denominator (i.e. total current liabilities) increases relatively more than the numerator (i.e. current assets minus inventories).

4.3. Explaining the differences in financial ratios by the standards

After ascertaining which of the changes in the financial statement items explain the differences in the financial ratios, we further investigate which of the IFRS cause the differences in the financial ratios. The results are reported in Tables 3–5. We report all standards that changed the magnitude of the ratios significantly. Moreover, the effect of a standard on a numerator or a denominator of the ratio is reported in different panels (i.e. Panels A and B). Panel C reports the effect of a standard on both elements of the ratio if the standard has an effect on both of them and, finally, the effect of all standards that changed the magnitudes of the ratios significantly, together.

Table 3

Impact of International Financial Reporting Standards/International Accounting Standards adoption on operating profit margin ratios, equity ratios and invested capital ratios

Standard	OPM						ROE						ROIC					
	Md1	Md2	+	-	P1	P2	Md1	Md2	+	-	P1	P2	Md1	Md2	+	-	P1	P2
<i>Panel A</i>																		
IAS 2													0.000	0.000	7	16		
IAS 17													0.000	0.000	12	20		
IAS 19	0.000	0.004	40	5	***	***	0.000	0.009	40	5	***	***	0.000	0.006	40	5	***	***
IFRS 2	0.000	-0.002	2	20	***	***	0.000	-0.005	2	20	***	***	0.000	-0.002	2	20	***	***
IFRS 3	0.004	0.009	65	1	***	***	0.013	0.022	64	1	***	***	0.008	0.014	65	1	***	***
<i>Panel B</i>																		
IAS 2													0.000	-0.001	3	22	***	***
IAS 17													0.000	-0.001	15	38	***	***
IAS 19							0.000	0.001	43	12	***	***	0.000	0.001	42	13	***	***
IFRS 2							0.000	0.000	4	5			0.000	0.000	4	5		
IFRS 3							0.000	-0.001	14	43	***	***	0.000	0.000	13	44	***	***
IAS 16							0.000	0.002	19	2	***	***	0.000	0.001	19	2	***	***
IAS 32							0.000	0.001	24	9	**	**	0.000	0.001	21	9	**	**
IAS 40													0.000	-0.003	1	7		**
<i>Panel C</i>																		
IAS 2													0.000	-0.001	8	20	**	**
IAS 17													0.000	-0.001	16	39	**	***
IAS 19							0.001	0.009	52	5	***	***	0.000	0.005	51	6	***	***
IFRS 2							0.000	-0.004	2	22		***	0.000	-0.002	2	22	***	***
IFRS 3							0.011	0.020	65	5	***	***	0.008	0.012	66	5	***	***
All	0.009	0.010	70	7	***	***	0.024	0.027	71	15	***	***	0.010	0.011	67	20	***	***

** and *** indicate significance at the 5 and 1 per cent levels, respectively. Medians of the differences between the Finnish Accounting Standards-based and the restated ratios are calculated for all firms (Md1) and by excluding those firms not affected by the adoption of the standard in question (Md2). P1, probability of sign statistics; P2, probability of Wilcoxon signed-rank statistics; IAS, International Accounting Standards; IFRS, International Financial Reporting Standards; OPM, operating profit margin; ROE, return on equity; ROIC, return on invested capital.

4.3.1. Increases in profitability ratios and the decrease in price-to-earnings ratio

In this section we further investigate which of the IFRS explain the increases in the profitability ratios and the decrease in the price-to-earnings ratio. Tables 3 and 4 report median values of the differences between FAS-based and IFRS-based ratios: OPM, ROE, ROIC and PE, respectively. The tables report the differences calculated before and after the restatement of the FAS-based ratio for a specific IFRS/IAS standard alone and all together. Moreover, the tables report the number of positive and negative values of the differences and the statistical significances of the differences. It must be noted here that the change might be statistically significant even though the median value of the

Table 4
Impact of International Financial Reporting Standards/International Accounting Standards adoption on return on price to earnings ratios, quick ratios and current ratios

Standard	PE						QR						CR					
	Md1	Md2	+	-	P1	P2	Md1	Md2	+	-	P1	P2	Md1	Md2	+	-	P1	P2
<i>Panel A</i>																		
IAS 2													0.000	0.019	24	5	***	***
IAS 17							0.000	0.013	1	1			0.000	0.013	2	2		
IAS 19																		
IFRS 2																		
IFRS 3																		
<i>Panel B</i>																		
IAS 12													0.000	-0.030	0	4	**	**
IAS 2																		
IAS 17	0.000	0.009	20	12	**		0.000	-0.011	0	32	***	***	0.000	-0.016	0	32	***	***
IAS 19	0.000	-0.999	5	39	***	***												
IFRS 2	0.000	0.328	20	2	**	***												
IFRS 3	-0.900	-1.506	1	64	***	***												
IAS 16																		
IAS 32																		
IAS 39							0.000	-0.023	0	6	**	**	0.000	-0.032	0	6	***	***
IAS 40																		
<i>Panel C</i>																		
IAS 2																		
IAS 17							0.000	-0.424	1	31		***	0.000	-0.016	1	31	***	***
IAS 19																		
IFRS 2																		
IFRS 3																		
All	-1.407	-1.605	11	69	***	***	0.000	-0.012	1	34	**	***	0.000	-0.019	0	35	***	***

** and *** indicate significance at the 5 and 1 per cent levels, respectively. Medians of the differences between the Finnish Accounting Standards-based and the restated ratios are calculated for all firms (Md1) and by excluding those firms not affected by the adoption of the standard in question (Md2). P1, probability of sign statistics; P2, probability of Wilcoxon signed-rank statistics. CR, current ratio; IAS, International Accounting Standards; IFRS, International Financial Reporting Standards; PE, price to earnings ratio; QR, quick ratio.

difference between FAS-based and IFRS-based ratio is zero due to the large number of firms where the effect of transition is zero (e.g. IAS 19 and IFRS 2 in Table 3). Therefore, the differences (medians) between FAS-based and IFRS-based ratios are also calculated by excluding those companies not affected by the standard examined. Hence, these medians expressed as Md2 in the tables present the extent of the change more clearly.

In general, the results in Tables 3 and 4 show that restating the profitability ratios and price-to-earnings ratio for employee benefits (IAS 19), share-based payment (IFRS 2) or business combinations (IFRS 3) changes the value of the ratios. In other words, all these three standards have an effect on profitability

ratios (i.e. OPM, ROE and ROIC) and PE ratio. The results in Table 3 show that IAS 19 and IFRS 3 have positive and IFRS 2 negative impacts on three profitability ratios. By contrast, the results in Table 4 show that IAS 19 and IFRS 3 have negative and IFRS 2 positive impacts on PE ratio. The results in Tables 3 and 4 show that the impact of IFRS 3 on the values of the ratios is the strongest. In other words, after restating OPM, ROE, ROIC or PE ratio for IFRS 3, the median value of the ratio increases or decreases the most.

The results in Table 3 show that the considerable (12 per cent) increase in OPM can be mainly explained by the increasing impact of IAS 19 and IFRS 3 and the decreasing impact of IFRS 2 in the numerator. The effects of IFRS on the denominator of OPM are not statistically significant. The results in Table 3 show that, in addition to these three standards, property, plant and equipment (IAS 16) and financial instruments: disclosure and presentation (IAS 32) have a significant impact on ROE. By restating the denominator for IAS 16 or IAS 32, the value of ROE increases. Moreover, the results in Table 3 indicate that IFRS 3 has an increasing impact on the numerator and a decreasing impact on the denominator. However, the impact of IFRS 3 is stronger on the numerator than on the denominator. As a consequence, by restating ROE for IFRS 3 the value of the ratio increases. Overall, the considerable (19 per cent) increase in ROE can be explained by the increasing impacts of IAS 19, IFRS 3, IAS 16 and IAS 32.

The results in Table 3 show that the same standards that have an increasing/decreasing impact on ROE have an increasing/decreasing impact on ROIC. However, the results also show that, in addition to these five standards, inventories (IAS 2), leases (IAS 17) and investment property (IAS 40) change the value of ROIC significantly. The results in Panel C show that by restating the numerator and the denominator for IAS 2 or IAS 17, the value of ROIC decreases. Moreover, there is some indication that IAS 40 also has a decreasing impact on the denominator. By restating the denominator for IAS 40, the value of ROIC decreases, even though the sign statistics do not give significant results at the 5 per cent level. The results in Panels A and B show that all restatements on the numerator or the denominator caused by IAS 2 or IAS 17 have a decreasing impact on ROIC. Overall, due to the decreasing impact of IAS 2, IAS 17 and IAS 40, ROIC increases less than ROE after financial statements have been converted from FAS-based to IFRS-based.

The results in Table 4 show that the considerable (11 per cent) decrease in PE ratio is mainly caused by IAS 19 and IFRS 3. In addition, the results show that IAS 17 and IFRS 2 have an increasing impact on PE. However, the results indicate that the decreasing impact of IAS 19 and IFRS 3 is stronger than the increasing impact of IAS 17 and IFRS 2. Moreover, the results show that the Wilcoxon signed-rank statistics for IAS 17 do not give significant results at the 5 per cent level.

In summary, there are four standards that explain the increases in the profitability ratios and the decrease in the PE ratio. The adoption of the rules concerning the

measurement of employee benefit obligations at the present value (IAS 19) increases income statement profits and decreases equity and invested capital. In addition, the adoption of fair value accounting rules concerning business combinations (IFRS 3) increases income statement profits considerably and equity and invested capital slightly due to the requirement to assess goodwill for impairment annually instead of amortizing it systematically. As a consequence, the adoption of IAS 19 and IFRS 3 increases the profitability ratios and decreases the PE ratio. In addition, the adoption of the fair value measurement rules for property, plant and equipment (IAS 16) and the classification rules for financial instruments (IAS 32) decrease equity and invested capital and, therefore, increase ROIC and ROE.

By contrast, there are also four standards that diminish the increasing impact of the above-mentioned four standards. The requirement to recognize share-based payments (share options) in the financial statement and to measure them at fair value (IFRS 2) decreases income statement profits and decreases (increases) the profitability ratios (PE ratio). In addition, the adoption of the measurement rules for inventories (IAS 2), accounting rules of leases (IAS 17) and fair value measurement rules of investment property (IAS 40) increase invested capital and, hence, decrease ROIC.

4.3.2. The decreases in liquidity ratios

In this section we examine which of the IFRS explain the decreases in liquidity ratios. Table 4 reports the results of restating FAS-based QR and CR for three standards. The results in Table 4 show that the 0.2 per cent decrease in QR can be explained by the decreasing impact of IAS 17 and IAS 39 on the denominator of QR. The results in Table 4 indicate that in addition to IAS 17 and IAS 39, IAS 12 also has a decreasing impact on CR. Moreover, the results in Panel A show that IAS 2 has an increasing impact on CR in the numerator. In summary, the decreases in liquidity ratios can mainly be explained by the decreasing impact of leases (IAS 17).

4.3.3. The increase in gearing ratio and the decrease in equity ratio

In this section we examine which standards change the financial leverage ratios after conversion from FAS to IFRS. Table 5 reports the results of restating the FAS-based financial leverage ratios (GR and ER) for nine standards. The results in Panel C of Table 5 show that construction contracts and revenue (IAS 11 and 18), leases (IAS 17), employee benefits (IAS 19) and financial instruments (IAS 32 and 39) increase the value of GR. By comparing the results in Panels A and B we find that a 2.9 per cent increase in GR is mainly explained by the restatement of the numerator for IAS 17 and the denominator for IAS 19 and IAS 32 and 39. Moreover, the results show that IAS 11 and 18 do not have a significant effect on the numerator or the denominator individually, but there

Table 5

Impact of International Financial Reporting Standards/International Accounting Standards adoption on gearing ratios and equity ratios

Standard	GR						ER					
	Md1	Md2	+	-	P1	P2	Md1	Md2	+	-	P1	P2
<i>Panel A</i>												
IAS 11, 18	0.000	0.178	2	0								
IAS 2							0.000	0.005	20	3	***	***
IAS 17	0.000	0.025	37	0	***	***	0.000	-0.001	8	22	**	***
IAS 19	0.000	-0.033	0	4			0.000	-0.004	7	35	***	***
IAS 36							0.000	-0.021	0	15	***	***
IAS 38							0.000	0.008	12	2	**	***
IFRS 3							0.002	0.009	49	1	***	***
IAS 16							0.000	-0.006	3	15	***	***
IAS 12							0.000	0.000	33	31		
IAS 32, 39	0.000	0.034	14	5		***	0.000	-0.010	1	26	***	***
<i>Panel B</i>												
IAS 11, 18	0.000	0.002	11	4								
IAS 2	0.000	-0.004	5	18	**	***	0.000	-0.002	3	20	***	***
IAS 17	0.000	0.001	18	12			0.000	-0.004	5	42	***	***
IAS 19	0.000	0.001	29	13	**	***	0.000	-0.001	15	27	**	**
IAS 36							0.000	0.008	15	0	***	***
IAS 38							0.000	-0.002	2	12	**	***
IFRS 3	0.000	-0.006	15	35	***	***	-0.001	-0.003	1	49	***	***
IAS 16							0.000	0.002	15	4	**	***
IAS 12							-0.001	-0.002	13	63	***	***
IAS 32, 39	0.000	0.001	34	15	***	**	0.000	0.003	22	6	***	***
IAS 40	0.000	-0.128	0	6	**	**						
<i>Panel C</i>												
IAS 11, 18	0.000	0.003	12	4		***						
IAS 2							0.000	0.003	20	3	***	***
IAS 17	0.000	0.019	42	4	***	***	0.000	-0.005	4	43	***	***
IAS 19	0.000	0.001	28	15	***	***	0.000	-0.003	7	43	***	***
IAS 36							0.000	-0.009	0	15	***	***
IAS 38							0.000	0.003	12	2	**	***
IFRS 3							0.001	0.005	49	1	***	***
IAS 16							0.000	-0.003	3	16	***	***
IAS 12							-0.001	-0.002	26	53	***	***
IAS 32, 39	0.000	0.003	38	17	**	**	0.000	-0.005	2	27	***	***
All	0.006	0.009	54	29	***	***	-0.005	-0.005	23	66	***	***

** and *** indicate significance at the 5 and 1 per cent levels, respectively. Medians of the differences between the Finnish Accounting Standards-based and the restated ratios are calculated for all firms (Md1) and by excluding those firms not affected by the adoption of the standard in question (Md2). P1, probability of sign statistics; P2, probability of Wilcoxon signed-rank statistics. IAS, International Accounting Standards; IFRS, International Financial Reporting Standards; ER, equity ratio; GR, gearing ratio.

is some indication that their combined effect increases the value of GR. The results in Panel B also show that restatement of the denominator for IAS 2, IAS 40 and IFRS 3 has a decreasing impact on GR.

By comparing the results in Table 5, we find that while IAS 17, IAS 19 and IAS 32 (IAS 2 and IFRS 3) have an increasing (decreasing) impact on GR, they have the opposite impact on ER. In addition to these five standards, property, plant and equipment (IAS 16), impairment of assets (IAS 36) and income taxes (IAS 12) have a decreasing and intangible assets (IAS 38) an increasing impact on ER. The results in Panels A and B of Table 5 show that while IAS 17 and IAS 19 have a decreasing impact on both elements of ER, the remaining seven standards have an opposite impact on the numerator than on the denominator. However, the impact of these seven standards is greater in the numerator than in the denominator except for income taxes (IAS 12). The results in Panel C reveal that IAS 12 has the strongest decreasing impact on ER. In summary, the decrease in ER can mainly be explained by the decreasing impact of these six standards.

In summary, the increase in GR can mainly be explained by the accounting requirements of leases (IAS 17), the requirement to measure employee benefit obligations at the present value (IAS 19) and the requirement to follow the classification rules of financial instruments (IAS 32 and 39). Moreover, there is some indication that the requirement to recognize contract revenues and expenses in accordance with IAS 11 and revenues arising in the course of ordinary activities in accordance with IAS 18 has an increasing impact on GR. In addition to IAS 17, IAS 19 and IAS 32 that have decreasing (increasing) impact on ER (GR), the requirement to test assets for impairment (IAS 36), the adoption of measurement rules of property, plant and equipment (IAS 16) and the requirement to recognize deferred tax liabilities or assets for all taxable temporary differences (some exceptions) (IAS 12) have a decreasing impact on ER.

However, the impact of the above-mentioned standards on the financial leverage ratios is mitigated by the requirement/permission to measure inventories in accordance with IAS 2, to measure investment property at fair value (IAS 40), to measure acquired assets and liabilities at fair value and to assess goodwill for impairment annually (IFRS 3) and to recognize intangible assets in accordance with IAS 38.

5. Summary and conclusions

Our study provides evidence of the impact of IFRS adoption on accounting numbers and on the key financial ratios used by financial analysts, investors and other financial institutions as key performance indicators. The present paper contributes to the literature investigating the economic consequences of IFRS adoption (e.g. Bartov *et al.*, 2005; Hope *et al.*, 2005; Daske and Gebhardt, 2006; Ding *et al.*, 2006; Barth *et al.*, 2008) in two respects. First, we extend the literature by showing how key financial ratios change after the conversion from

DAS to IFRS in Finland, in the continental European context. Second, by examining the changes in financial statement items and identifying the IFRS/IAS standards that change the ratios, we explain the reasons for the changes in the ratios. Whereas Ding *et al.* (2006) provides evidence on the significance of IFRS adoption by reporting the main differences between DAS and IFRS, we further illustrate the differences in more detail in continental European countries and demonstrate the impact of the adoption on accounting figures in Finland.

To find empirical evidence on the issue we create a comprehensive database of financial statement information prepared under DAS and IFRS from the published transition reports. We measure the impact of IFRS adoption on key financial ratios in Finland, because the transition reporting of Finnish entities is extensive enough for our purposes and overall, more extensive compared to that of other European countries. Moreover, the accounting requirements of the FAS are similar to that of the DAS of other continental European countries, meaning that Finland is a good example of a continental European country in this respect. Furthermore, based on prior studies (e.g. La Porta *et al.*, 1998), we assume that the Finnish Authority provides high-quality supervision and that the transition reporting is generally reliable.

The results of the present study indicate that the adoption of IFRS changes the magnitudes of the key accounting ratios of Finnish companies by considerably increasing the profitability ratios and gearing ratio moderately, and considerably decreasing the PE ratio and equity and quick ratios slightly. Our results indicate that the increases in the profitability ratios and the decrease in the PE ratio can be explained by increases in the income statement profits. Moreover, our results are consistent with those of Jones and Higgins (2006) suggesting that the removal of the amortization of purchased goodwill under IFRS 3 is the most important reason for a considerable increase in profitability ratios. Our results also indicate that the increase in debt items and decrease in equity explain the changes in the financial leverage ratios. Moreover, the decreases in liquidity ratios can mainly be explained by the increase in current liabilities. Overall, our results indicate that the adoption of rules concerning fair value accounting, lease accounting and income tax accounting, as well as rules concerning the accounting of financial instruments, explain the changes in the key accounting ratios. In summary, the adoption of fair value accounting rules and stricter requirements concerning certain accounting issues are the reasons for the changes observed in accounting figures and financial ratios.

References

- Barth, M. E., W. Landsman, and M. Lang, 2008, International Accounting Standards and accounting quality, *Journal of Accounting Research* 46, 467–498.
- Bartov, E., S. Goldberg, and M. Kim, 2005, Comparative value relevance among German, U.S. and International Accounting Standards: a German stock market perspective, *Journal of Accounting, Auditing and Finance* 20, 95–119.

- Callao, S., J. I. Jarne, and J. A. Laínez, 2007, Adoption of IFRS in Spain: effect on the comparability and relevance of financial reporting, *Journal of International Accounting, Auditing and Taxation* 16, 148–178.
- Cordazzo, M., 2008, The impact of IAS/IFRS on accounting practices: evidence from Italian listed companies, working paper (Free University of Bozen-Bolzano, Bolzano, Italy).
- d’Arcy, A., 2001, Accounting classification and international harmonization debate – an empirical investigation, *Accounting Organization and Society* 26, 327–349.
- Daske, H., and G. Gebhardt, 2006, International financial reporting standards and experts’ perceptions of disclosure quality, *Abacus* 42, 461–498.
- Ding, Y., O.-K. Hope, T. Jeanjean, and H. Stolowy, 2006, Differences between domestic Accounting Standards and IAS: measurement, determinants and implications, *Journal of Accounting and Public Policy* 26, 1–38.
- Ezzamel, M., and C. Mar-Molinero, 1990, The distributional properties of financial ratios in UK manufacturing companies, *Journal of Business Finance and Accounting* 17, 1–29.
- Hope, O.-K., J. Jin, and T. Kang, 2005, Empirical evidence on jurisdictions that adopt IFRS, *Journal of International Accounting Research* 5, 1–20.
- Jermakowicz, E. K., and S. Gornik-Tomaszewski, 2006, Implementing IFRS from the perspective of EU publicly traded companies, *Journal of International Accounting, Auditing and Taxation* 15, 170–196.
- Jones, S., and A. D. Higgins, 2006, Australia’s switch to international financial reporting standards: a perspective from account preparers, *Accounting and Finance* 46, 629–652.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. W. Vishny, 1997, Legal determinants of external finance, *Journal of Finance* 3, 1131–1150.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. W. Vishny, 1998, Law and finance, *Journal of Political Economy* 106, 1113–1155.
- Näsi, S., and A. Virtanen, 2003, Chapter 5: Finland, in: D. Alexander and S. Archer, eds, *The European Accounting Guide*, 5th edn (Aspen Publishers Inc., Gathersburg), 250–288.
- Nobes, C., 1998, Towards a general model of the reasons for the international differences in financial reporting, *Abacus* 34, 162–187.
- Nobes, C. W. (Ed.), 2001, *GAAP 2001 – A Survey of National Accounting Rules Benchmarked Against International Accounting Standards*, available at <http://www.iasplus.com/resource/gaap2001.pdf>.