



Investigating the Effects of the EU Mandatory Adoption of IFRS on Accounting Quality: Evidence from Italy

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Abstract

The European Community Regulation No. 1606/2002 required all EU listed companies to prepare their consolidated financial statements in accordance with IFRS as from 1 January 2005. This paper studies the impact of the IFRS mandatory adoption in a typical code-law European country such as Italy. It aims to investigate how and whether the accounting information quality changes following IFRS implementation. The focus is on value relevance which is considered as one of the basic attributes of accounting quality. An empirical analysis is performed on a sample of 960 firm-year observations concerning Italian listed companies observed from 2002 to 2007. Results confirm the expected overall increase in the value relevance under IFRS. The research also documents changes in Italy's country-specific factors in the period surrounding IFRS adoption that may contribute to an improvement in accounting quality. Such a concern is consistent with previous literature supporting the idea that accounting quality does not depend only on the high quality of accounting standards, but it is also a function of the country's complex institutional setting.

Keywords: IFRS, Value relevance, Accounting quality, Country-specific factors, Regulation

1. Introduction

In 2002, the Parliament and the Council of the European Union (EU) approved a Regulation (No. 1606/2002) requiring all listed companies in the EU to use the International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB) for the preparation of their consolidated financial statements from 1 January 2005 onwards. Member states have the option to extend this requirement to individual company accounts and to consolidated accounts of non-listed companies. (Note 1) One of IASB's main goals is to develop a single set of accounting standards that, if followed, requires companies to report "high quality, transparent and comparable information in financial statements". (Note 2) Evidence of higher accounting quality has been interpreted by Barth, Landsman and Lang (2008) for the IFRS-adopting firms who exhibit less earnings management, more timely loss recognition and more value relevance of earnings, based on a worldwide sample. Such concerns lead to the expectation that the IFRS mandatory adoption in Europe should determine important economic consequences for financial reporting.

The present study focuses on Italy, a typical European code-law country that has been experiencing the IFRS mandatory adoption. It aims to investigate the effect of the IFRS adoption on the accounting information quality. Since accounting quality is a broad concept with multiple dimensions (Burgstahler, Luzzi, & Leuz, 2006), this study focuses on the value relevance which is considered one of the basic attributes of accounting quality (Francis, LaFond, Olsson, & Schipper, 2004). Value relevance expresses the ability of financial statement information to capture or summarize information that affects share values and it is indicated by the statistical association between accounting information and market prices or returns (Francis & Schipper, 1999, pp. 326-327).

By using consolidated financial statement data from a sample of 960 firm-year observations concerning 160 Italian listed companies observed from 2002 to 2007, the value relevance in Italy is investigated to answer the first research question: *Does the value relevance of earnings and book value of equity systematically change in Italy with the mandatory adoption of IFRS?* For this purpose, the combined, relative and incremental value relevance of book value of equity and earnings with respect to share prices are examined. In addition, the value relevance of earnings levels and earnings changes is investigated for the period 2002-07 using the return regression model. To test for a systematic change in the statistical association between stock prices/returns and accounting numbers induced by adopting IFRS, pooled regressions comparing value relevance in the pre-adoption period (i.e, from 2002 to 2004) with the post-adoption one (i.e, in the three-year period 2005-2007) are estimated.

Data are also analyzed on a sectoral basis to answer the second research question: *How does the IFRS adoption impact*

the value relevance in the different sectors? To respond to this the same set of association studies are performed separately for firms operating in the Finance, Industry and Services macro-sectors to study cross-sectional differences in the value relevance.

Italy was chosen as the subject of this research because the country's institutional structure should enable the detection of early evidence of the impact of IFRS mandatory adoption at country level. Firstly, Italy has a "civil law-based" legal system in which the rules governing accounting are the product of the lawmakers and their political superiors (Di Pietra, McLeay, & Riccaboni, 2001). Accounting standards set by the national professional body have always only played an interpretative role of the legal rules and they have never been officially recognized as law. Their ambiguous status has influenced their scarce application and recognition by professionals and companies (Zambon, 2001). Secondly, the Italian accounting rules show significant differences from IFRS. They have been driven by emphasis on the financial statement conformity with tax regulations, conservatism, and broad-stakeholder orientation. Conversely, IFRS have a stronger economic and business orientation, with a particular focus on the information needs of capital markets.

Another reason why Italy is an interesting case study is the choice of the national legislator to require the use of IFRS also in individual accounts of listed companies, thus taking a different orientation compared to most Continental European countries where this use has been left as an option. Such an extension should strengthen IFRS enforcement by making accounting numbers of consolidated financial statements more reliable for empirical analysis.

At any rate, it is worth noticing that positive effects of IFRS adoption on accounting quality are not necessarily straightforward since, as reported in literature, political and economic forces could affect financial reporting behaviour (see, among others, McLeay & Riccaboni, 2001; Ball, Robin, & Wu, 2003). In this respect, Ball (2006) points out that in Europe most political and economic influences on financial reporting practice remain local despite the IFRS adoption. Thus, an exogenously imposed set of accounting standards, such as IFRS with their common-law view of financial statements, does not necessarily influence per se financial reporting quality, particularly in countries with a code-law institutional setting. Along the same line, Soderstrom and Sun (2007) claim that cross-country differences in accounting quality are likely to remain after the IFRS implementation because accounting quality is affected by the country's legal and political system, as well as by the incentives to financial reporting. Taking these considerations into account, the present study also documents changes that Italy has been experiencing since the last decade in its country-specific factors. They could contribute to the improvement of IFRS implementation, therefore positively influencing accounting quality. In summary, Italy has been undergoing a significant changeover. Particularly, owing to the mandatory requirement to apply IFRS, it has been shifting its form of accounting regulation: from a bureaucratic type to forms of progressive delegation or self regulation which, as reported in Di Pietra et al. (2001), characterize countries like the U.S.A. and the U.K., respectively.

Prior research reports a positive impact of the voluntary IFRS adoption on accounting quality (Soderstrom & Sun, 2007, p. 695); whereas, little evidence is reported when the adoption is compulsory. This study tries to contribute to the international accounting research focusing on a country experiencing the mandatory adoption of IFRS. Research results may provide some insights about properties of IFRS versus national standards in the current EU setting. At the same time, they may also contribute to the literature examining the quality of IFRS-based accounting amounts.

The rest of the paper is organized as follows. Section 2 describes the prior research. Section 3 discusses the changes in Italy's country-specific factors. Section 4 deals with the research design, the sampling information and the hypothesis development. Section 5 illustrates the results of the empirical analysis. The final section presents some concluding remarks.

2. Related Literature

This paper originates from that stream of research which is aimed at comparing the value relevance of earnings and book value generated by different sets of accounting standards. Some of the research efforts in this field concern non-US firms listing on the New York Stock Exchange (e.g. Amir, Harris, & Venuti, 1993; Harris & Muller, 1999) and studies that compare the explanatory power of earnings and book value across countries (e.g. Joos & Lang, 1994; King & Langli, 1998; Ali & Hwang, 2000; Arce & Mora, 2002). Other studies aim to provide findings which have implications for policymakers on recent moves towards replacing local GAAP with IFRS for non-European countries (e.g. Sami & Zhou, 2004; El Shami & Al Qenae, 2005). Along the same line, the present study tries to contribute to the international debate about replacing local GAAP with IFRS in Continental Europe. Most of the related literature is concentrated on Germany. Bartov, Goldberg and Kim (2005) examine value relevance in Germany from 1998 to 2000 and find a higher value relevance for earnings prepared under either IFRS or US-GAAP in comparison to those prepared under German GAAP. These results hold for profit observations only. Different findings are reported in Hung and Subramanyam (2007), who compare the financial statement effects of using IFRS to those using German GAAP for a sample of German companies that elected to adopt IFRS. Results show that the adjustments for book value between the two reporting systems are value relevant, but not for earnings. In addition, no difference in value relevance of book value and earnings under IFRS and German GAAP emerges.

It is not easy to draw reliable conclusions about the effects of IFRS adoption in Germany by comparing the results of the last two studies, since they reach somewhat conflicting findings. The main reasons are probably attributable to the bias deriving from the analysis of self-selected firms due to the IFRS voluntary adoption phase as well as to possible differences between the two samples.

Some distinguishing elements of the present study should enforce its results with respect to other similar research. Firstly, a representative sample of companies is observed longitudinally in time, so that the survivorship bias problem is minimized. Secondly, results do not suffer from possible a self-selection bias as the study concerns a mandatory adoption of IFRS instead of a voluntary one. Thirdly, Eccher and Healy (2000) provide evidence that prices may reflect investor clienteles and can differ across firms. Controlling for macro-sectors allows the investigation of value relevance for firms with similar characteristics and should reduce such a bias. Last but not least, cross-country studies rely on the rather unrealistic assumption that countries share the same capital market microstructure and the same macro-economic environment. It is evident that this bias is removed by limiting the analysis to a single country because it correctly presumes that the pricing process is the same for all the observed firms.

3. Italy's Country-Specific Factors

Consistent with the view that the adoption of an exogenously-developed set of accounting standards, such as IFRS in Europe, may not necessarily increase accounting quality unless improvements in the institutional factors are also brought about (e.g. Ball, 2006; Soderstrom & Sun, 2007), this study supports the idea that changes in some of Italy's country-specific factors could contribute to improving IFRS implementation, therefore positively influencing the quality of accounting information. Cross-country studies investigating the association between stock prices and accounting numbers quantify the influence of country-specific factors (e.g. Ali & Hwang, 2000; Hung, 2001), while other studies, which focus on individual countries, describe these factors in a qualitative manner; that is, by indicating whether they increase or decrease the value relevance and under which conditions (Hellström, 2006). This is the case of the present study which focuses on six country-specific factors suggested by prior research on international differences in financial reporting practice, namely: legal system, financial system, equity market, ownership concentration, auditing and tax system.

La Porta, Lopez-De-Silanes, Shleifer and Vishny (1997) report that French-civil-law countries have both the weakest investor protections and the least developed capital markets in comparison to common law countries. These are the characteristics of Italy which is classified by La Porta, Lopez-De-Silanes and Shleifer (1998) as a French-civil-law country with some German influence. Previous studies show that accounting quality is higher in countries with a common law origin and high protection of shareholders rights (e.g. Ball, Kothari, & Robin 2000; Ali & Hwang, 2000). In this respect, the legal system in Italy is expected to negatively affect value relevance.

As to the main sources for corporate funding, Italy has been classified as a bank-oriented country (Demirguc-Kunt & Levine, 2001). Berglöf (1990) defines the bank-oriented financial system as characterized by close links between firms and banks, which supply most of their capital needs. Banks are the principal financing agent and also play an important role as shareholders. Actually, Italian banks do not have a large share in companies ownership but, being the companies main capital suppliers they have easy access to firms' financial information. (Note 3) Thus, the demand for published financial information reduces. This feature of the Italian financial system can negatively affect value relevance. Ali and Hwang (2000) find that value relevance is lower for countries with bank-oriented financial systems as opposed to market-oriented ones.

Despite probable limitations on value relevance related to the legal and financial systems, benefits could derive from some events which are starting to change the Italian economic scenario. The recent and ongoing development of the Italian equity market is expected to have positive effects on value relevance. The demand for accounting information from market participants provides incentives for firm managers to increase the quality of financial reporting so to facilitate current and potential shareholders' investment decisions. This effect is supported by Nobes's (1998) suggestion that, unless a country is culturally dominated by another, its financial system is the main driver of its financial reporting practices. Table 1 documents the growth of the Italian Stock Exchange from 2001 to 2007 in terms of number of traded shares, market capitalization, and so on. This sizable enlargement is also attributable to the broad privatization process. The country experienced public offerings for about 125 million Euro, that was the second one among OCSE countries and the first one in Europe. Aganin and Volpin (2003) reported that the stock market capitalization grew to 70% of the Gross National Product in 2000 (in the 1980s it was lower than 8%) and that this increase was largely due to the listing of large corporations. Strikingly, this development of the stock market is not supported by Foreign Direct Investment (FDI). Tyrral, Woodward and Rakhimbekova (2007, p. 92) argue that IFRS are supposed to provide greater transparency in financial statements, which should attract increased FDI. This presumption is not supported by evidence in Italy; Table 1 reports no consistent increase in inward FDI during the recent years whereas outward FDI increases. (Note 4)

The limited size of the Italian equity market is historically associated with a lowly diffused ownership structure (La

Porta, Lopez-De-Silanes, & Shleifer, 1999) which has probably generated a weak demand for financial reporting. The ownership and control structure of Italian listed companies presents a high level of concentration and a limited number of shareholders, linked by either family ties or agreements of a contractual nature (i.e. shareholders' agreements), who are willing and able to wield power over the corporation (Melis, 2005, p. 479). Nevertheless, recent figures about ownership concentration among Italian listed companies (Table 1) highlight that the concentration of shares owned by the largest shareholder decreases from 2001 (42.2%) to 2007 (25.4%) and, consequently, the percentages concerning the other majority shareholders and the market increase from 9.2% to 14.4% and from 48.6% to 60.2% respectively. This change is supposed to influence positively value relevance since it implies that a growing number of investors are likely to increase the demand for high quality accounting information, forcing companies in this way to appropriately apply IFRS. Such an increase in the percentage of shares owned by the market has probably also been favoured by the Italian government's efforts towards the improvement of the minority shareholders' protection. It led to the introduction in 1998 of the "Draghi reform" (Legislative Decree No. 58/1998) and the reform of the governing saving in 2005 (Law No. 262/2005). Along the same line, the Italian Stock Exchange introduced in 1999 the "Preda code", a code of ethics aimed at promoting better corporate governance practices among listed firms.

The auditing service is an important enforcement mechanism affecting the quality of accounting information. Francis and Wang (2006) document that earnings quality increases for firms with Big 4 auditors, based on an international broad sample. They also report the market share of the Big 4 auditors in Italy is 93%. This is among the highest percentages in Europe and would positively affect the statistical association between stock prices and accounting numbers. Nevertheless, Italy is the only European country to have made auditor rotation compulsory. The "Draghi reform" requires that the auditing firm in Italy is appointed for three years and, after three appointments (i.e. nine years), the company is required to rotate its lead audit firm. It is not clear how this mandatory rotation could affect the value relevance of accounting information: a Bocconi University report (SDA Bocconi, 2002) highlights that audit firm rotation is detrimental to audit quality but has a positive effect on improving public confidence in the corporate sector. It concludes that auditor rotation produces a negative net effect on the shareholder's value.

Finally, the divergence between financial and tax accounting in Italy is supposed to influence positively value relevance. The literature supports this conjecture with empirical evidence (e.g. Joos & Lang, 1994; Ali & Hwang, 2000). The strong relationships between accounting and taxation in Italy were reduced by introducing the Legislative Decree No. 6/2003. It eliminated the commercial rule allowing fiscal items in the accounts with related disclosure in the notes. Also, the Legislative Decree No. 344/2003 eliminated the compulsory inclusion of some expenses in the income statement in order to obtain their deduction from tax accounts. These expenses can now be directly deducted from the annual tax return.

Summarizing, Italy has been experiencing several structural changes affecting its country-specific factors that can influence the IFRS implementation with respect to the value relevance of accounting information. In particular, the recent growth of the equity market generated by internal factors (privatizations, IPOs, etc.), the recent decrease in the ownership concentration, the Big 4 auditing concentration and the divergence between financial and tax accounting are all factors that should increase the degree to which firms comply with IFRS therefore positively influencing the quality of accounting information.

4. Research Design

4.1 Sample Selection and Descriptive Statistics

The empirical analysis is carried out on a sample of 960 firm-year observations concerning a cohort of 160 Italian companies trading their common shares on the Milan Stock Exchange (MSE) from 2002 to 2007.

Accounting data and market share prices were collected from the Italian Stock Exchange website. (Note 5) All the accounting data were submitted in accordance with I-GAAP from 2002 to 2004 (Note 6) and in accordance with IFRS from 2005 to 2007. In view of that, 480 firm-year observations derive from I-GAAP financial statements and 480 from IFRS ones, so that sampling observations are paired with respect to the pre-adoption period (2002-2004) and the post-adoption one (2005-2007).

The sampling scheme was designed with the aim of observing the same set of 160 companies longitudinally in time in order to preserve homogeneity of results. This means that, once a company is selected, all its data concerning the period 2002-2007 are analyzed. Only 19 replacements (over 960 firm-year observations) were made in the sample since accounting data for some companies were no longer available because of mergers and acquisitions. Companies of the same magnitude (in terms of net equity) and operating in the same macro-sector of the replaced ones were selected.

Sample units selection was based on a stratified sampling scheme to accomplish statistical representation with respect to the macro sectors of activity, as reported on the MSE website (Finance, Industry and Services), and the market capitalization. A company is selected if, following its inclusion in the sample: a) the sampling weight of its macro-sector does not exceed that of the corresponding macro-sector of the population for more than $\pm 5.00\%$; b) the null hypothesis

of the Kolmogorov-Smirnov (KS) test comparing the empirical distribution of the macro-sector market capitalization within the sample with that characterizing the population is not rejected.

A year-by-year comparison between the population weights and the sampling weights is shown in Table 2, which summarizes the distribution of the Italian listed companies among the three main sectors in the years 2002 to 2007. The proportion of sampling firms for each year is always between 69% and 75% and the weight differences between sample and population never exceed $\pm 5\%$. This means that the sample can be considered as representative either with respect to the proportion of selected firms or with respect to its internal composition.

Finally, Table 3 presents descriptive statistics and correlations for the sampling observations. Results reveal that earnings and book value are positively correlated with price and with each other over the entire period and that the correlation among the three variables increases after the adoption of IFRS. It is worth noticing that this increase is particularly large for the correlations between earnings and the other two variables.

4.2 Hypothesis Development

This study investigates the value relevance of I-GAAP and IFRS book value and earnings assuming that IFRS produce higher quality accounting information for investors in comparison to I-GAAP. This assumption derives from the different approach to the financial statement used by these two accounting regimes. Particularly, IFRS interpret the financial statement in a perspective way: the use of fair value measurements should reveal better the present company economic state and its future performances. As Barth et al. (2008, p. 5) argue, accounting amounts that reflect better a firm's underlying economics provide investors with information to aid them in making decisions. In this respect, IFRS can be considered more investor-oriented. On the contrary, I-GAAP are primarily oriented towards stakeholders, with special attention to creditors. Thus, they tend to prefer conservative accounting practices in order to preserve capital maintenance during the time.

These considerations introduce the first research question: *Does the value relevance of earnings and book value systematically change in Italy with the mandatory adoption of IFRS?* To answer this question the combined, relative and incremental value relevance analysis are carried out using price and return regression models.

The first expected result is that *the combined value relevance of book value and earnings is higher under IFRS*. To assess this result, the Ohlson (1995) model assuming a linear relationship between price, book value and earnings is used. The price-levels regression includes price per share as the dependent variable, and book value and earnings (both measured on a per share basis) as the explanatory variables:

$$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 E_{it} + \varepsilon_{it} \quad (1)$$

where:

P_{it} is the price of a share of firm i six months after the fiscal year-end t ;

α_0 is the intercept term;

BV_{it} is the book value per share of firm i at the end of the year t ;

E_{it} is the earnings per share of firm i for time period $t-1$ to t ;

ε_{it} is the error term.

Fair value accounting is the major characteristic of IFRS. By incorporating economic events in a more timely fashion, it promises to make financial statements more informative for investors (Ball, 2006, p.12). Such a goal leads to the investigation of the individual ability of BV_{it} and E_{it} to reflect economic information incorporated in stock prices following IFRS; that is, to document on their relative value relevance. For this purpose, it is worthwhile remembering that IFRS are based on a conceptual framework similar to that of common-law countries. Prior empirical research (e.g. King & Langli, 1998; Arce & Mora, 2002) suggests that in these countries the relative value relevance of earnings seems to be higher than that of book value. Taking all these issues into account, the second expected result is that *the transition to IFRS positively affects the relative value relevance of both book value and earnings, but it could particularly increase that of earnings*. To determine the explanatory power that E_{it} and BV_{it} have for prices individually, equation (1) can be split into two models in order to consider the relative value relevance of BV_{it} and E_{it} respectively (Note 7):

$$P_{it} = \beta_0 + \beta_1 BV_{it} + \varepsilon_{it}^{BV} \quad (2)$$

$$P_{it} = \gamma_0 + \gamma_1 E_{it} + \varepsilon_{it}^E \quad (3)$$

The relative value relevance of E_{it} and BV_{it} is measured by the adjusted R^2 s of the corresponding models (2) and (3). Comparing the value of adjusted R^2 deriving from model (2) with that of model (3), it is possible to understand if BV_{it} is more value relevant than E_{it} , or vice versa. This study also applies the Vuong (1989) test to evaluate the magnitude of the differences between these adjusted R^2 s.

The empirical analysis also investigates if book value and earnings provide different additional information to investors by measuring their incremental explanatory power. Denoting the adjusted R^2 's coefficients from equations (1) to (3) as R^2_{1*} , R^2_{2*} and R^2_{3*} respectively, the total explanatory power of the model (1) is decomposed into three parts: i) the incremental explanatory power of book value: $R^2_{BV} = R^2_{1*} - R^2_{3*}$; ii) the incremental explanatory power of earnings: $R^2_E = R^2_{1*} - R^2_{2*}$; iii) the explanatory power common to both earnings and book value: $R^2_C = R^2_{1*} - (R^2_{BV} - R^2_E)$. (Note 8)

Furthermore, the research considers the strength of the relationship between earnings and stock returns as a proxy for value relevance. To evaluate whether *the ability of earnings levels and earnings changes in explaining stock returns improves under IFRS* (third expected result), the return regression model proposed by Easton and Harris (1991) is considered:

$$r_{it} = \gamma_0 + \gamma_1 [E_{it}/P_{it-1}] + \gamma_2 [\Delta E_{it}/P_{it-1}] + \varepsilon_{it}^r \quad (4)$$

where:

r_{it} is the dividend adjusted stock market return of firm i six months after the fiscal year-end t ;
 E_{it}/P_{it-1} is the earnings per share of year t deflated by the stock price in year $t-1$ observed for firm i ;
 $\Delta E_{it}/P_{it-1}$ is the change in the earnings per share from years $t-1$ to t deflated by the stock price in year $t-1$ observed for firm i .

The value relevance of both E_{it}/P_{it-1} and $\Delta E_{it}/P_{it-1}$ are measured by the adjusted R^2 of model (4). Again, following the R^2 decomposition introduced for model (1), their incremental value relevance can be measured in the same way decomposing the R^2 of model (4). Generally, model (4) is considered to be less sensitive to scale effects compared to model (1). See Easton (1998, p. 238).

When estimating price and return regression models, pooled data of the pre-adoption period (2002-2004) are contrasted with those of the post-adoption one (2005-2007) and differences in the value relevance are evaluated through the Chow (1960) test.

Finally, consistent with the view of Ballas and Hevas (2005) who predict and document that industry classification is an important source of variation in value relevance of earnings and book value, a sectoral analysis is performed to answer the second research question: *How does the IFRS adoption impact the value relevance in the different sectors?* The sectoral analysis investigates how value relevance changes in the three different macro-sectors (Finance, Industry and Services) from the pre-adoption period to the post-adoption one. Models (1) to (4) are applied separately for each macro-sector and for the two different periods.

5. Empirical Results and Inferences

This section summarizes the results obtained when applying models (1) to (4) to the observed sample of Italian firms. When estimating each model, data are standardized to obtain standardized regression coefficients. In addition, to control for the effects of extreme values, the 5% of observations located in the two tails of the empirical distributions of either earnings and book value are removed from the analysis, since they are identified as outliers. Consistent with prior research (such as Collins et al., 1997), firms with negative book value (under either I-GAAP or IFRS) are deleted. Finally, the White (1980) corrected t -statistics are used when testing significance of regression coefficients to control for heteroskedasticity.

5.1 Value Relevance of Earnings and Book Value under IFRS and I-GAAP

Table 4 shows a comparison among the results of the models (1) to (4) for the I-GAAP data (2002-2004) and for the IFRS data (2005-2007).

Price regression results in Panel A suggest that IFRS adoption increases the combined and the relative value relevance of accounting information, since R^2_{1*} , R^2_{2*} and R^2_{3*} under IFRS are higher than those under I-GAAP. These findings confirm the prediction that *the IFRS adoption causes an increase in the combined value relevance* and that *the increase in the relative value relevance is more pronounced for earnings* (from 18% to 47%) *than for book value* (from 46% to 50%). Consistent with these findings, when comparing the results of models (2) and (3) in each period, adjusted R^2 's and the Vuong test indicate that BV_{it} is relatively more relevant than E_{it} under I-GAAP but not under IFRS; this is because the value of the Z-statistic under IFRS is not significant at conventional levels. As for the incremental value relevance, results show that the incremental contribution to equity valuation of E_{it} (measured by R^2_E) increases from 2% to 10%. This would mean that income statement information is starting to gain importance for investors' valuation mechanisms and that firms' profitability is influencing investment decisions. Contrariwise, the incremental information provided to investors by the balance sheet seems to reduce (R^2_{BV} decreases from 30% to 13%).

In general, the results suggest that the IFRS adoption induces systematic differences in the value relevance of accounting information in the post-adoption period compared to the pre-adoption one. The Chow tests always reject the null hypothesis of no difference in value relevance between the pre-adoption and the post-adoption periods.

Return regression outcomes on pooled data are reported in Panel B. They show an increase of the statistical association between earnings and stock returns in the post-adoption period with respect to the pre-adoption one (from 5% to 10%). Under IFRS, earnings changes seem to be more relevant than under I-GAAP. Their incremental value relevance equals 10% in the post-adoption period, being higher than that of earnings levels (1%). Thus, IFRS earnings appear as informative for investors and potentially more able to predict future price changes.

5.2 Sectoral Analysis

Table 5 reports the results of the pooled (price and return) regressions for the Finance, Industry and Services sectors.

As for companies operating in the Finance sector, price regression results (Panel A) highlight that the combined value relevance increases consistently ($R^2_{I^*}$ increases from 0.50 to 0.73) as well as the relative value relevance of E_{it} ($R^2_{3^*}$ increases from 0.41 to 0.73); whereas, the relative value relevance of BV_{it} measured by $R^2_{2^*}$ decreases slightly from 0.46 to 0.44. When comparing the relative value relevance of E_{it} with that of BV_{it} , a clear superiority of E_{it} over BV_{it} under IFRS emerges. The significance of the Vuong's Z-statistics provides strong evidence of this superiority. In addition, the results of the incremental value relevance indicate that the contribution provided to equity valuation by E_{it} increases consistently under IFRS (R^2_E increases from 0.04 to 0.29) whereas it reduces to zero for BV_{it} (R^2_{BV} decreases from 0.08 to zero). Thus, financial companies show that income statement accounting information under IFRS is more relevant for investors than that of the balance sheet, probably because they make extensive use of fair value measurements. This kind of result is consistent with previous studies about the use of fair value estimates of investment securities in banks (Barth, Beaver, & Landsman, 1996; Eccher, Ramesh, & Thiagarajan, 1996).

The results of the empirical analysis of this sector could have also been affected by the options offered by IFRS 1 and by the role that the national supervisory authorities have played in the IFRS implementation process. Firstly, it should be noted that 33 of the 50 selected financial companies exercised the option allowed by IFRS 1 to not retrospectively apply IAS 32 and IAS 39 on 1 January 2004. For these companies, the effects on accounting numbers deriving from the first adoption of these two standards were detectable in the opening balance sheet on 1 January 2005, in which the changes in the net equity attributable to IAS 32 and IAS 39 were separately reported. It is likely that the magnitude of these changes and their separate disclosure could be among the reasons for the high increase of value relevance for financial companies in 2005. (Note 9) Secondly, the Italian supervisory authorities have wielded a strict regulatory power over financial companies aimed at improving the enforcement of IFRS. Financial statement formats and their filing rules have been introduced for banks, insurance companies, listed firms and financial companies issuing financial instruments widely distributed among the public. As for the implementation of fair value accounting, the Bank of Italy has held a stringent control over banks to limit volatility in their financial statements. Such a control is based on the "Guidelines on prudential filters for regulatory capital" introduced by the Committee of European Banking Supervisors (CEBS) to preserve the definition and maintain the quality of regulatory capital. (Note 10)

Different conclusions can be drawn for the Industry sector, where the combined value relevance remains substantially unchanged when moving from I-GAAP to IFRS, but changes are detectable in the relative value relevance. Under I-GAAP, BV_{it} is relatively more value relevant than E_{it} , as showed by the Vuong's Z-statistic. This result probably depends on conservative practices and income smoothing. However, under IFRS the superiority of BV_{it} over E_{it} is less marked, as the relative value relevance of E_{it} increases considerably with the transition to IFRS ($R^2_{3^*}$ increases from 0.13 to 0.34) whereas that of BV_{it} decreases from 0.57 to 0.54. Incremental value relevance results also show that BV_{it} provides consistent additional information to equity valuation under I-GAAP; this result is also confirmed under IFRS, although R^2_{BV} decreases from 0.47 to 0.27.

As the Finance sector, services companies experience a consistent increase in the combined value relevance in the post-adoption period, together with an increase in the relative and incremental value relevance of E_{it} . Consistent with the results of the previous sectors, the relative value relevance of BV_{it} decreases.

Finally, the empirical analysis investigates if the value relevance of earnings levels and earnings changes is sensitive to the activity sector (Panel B). The results are in line with the conclusions drawn from the price regression models. IFRS adoption increases the value relevance of earnings, particularly for the Finance and Services sectors, whose companies are probably the major fair value users. Most of the total variation of returns in the Services and Finance sectors is explained by earnings changes, probably because in these sectors earnings are most sensitive to the changes induced by IFRS fair value accounting.

Overall, the results of the sectoral analysis indicate that IFRS adoption has a different impact on the value relevance of accounting numbers in the three sectors, justifying the explorative purpose of the second research question. The increase in the combined value relevance for financial and services companies indicates that their accounting numbers are particularly relevant and informative for investors. Instead, the slight increase of value relevance in the Industry sector probably depends on the survival of conservative practices that reduce the effectiveness of the IFRS implementation towards the disclosure of more useful information for investors.

6. Concluding Remarks

Following the recent IFRS mandatory adoption in Europe, this paper studies the consequences of the IFRS-based financial statement presentation on the value relevance of accounting information in Italy. The aim of this research is to investigate how the mandatory adoption of IFRS has impacted on the value relevance of book value of equity and earnings, and to assess whether it increases the quality of accounting information for investors. At the same time, since political and economic forces profoundly affect reporting practice (Ball et al., 2003, p. 236), changes in the country-specific factors that may improve the IFRS implementation are also considered.

Research results are coherent with the expectations. Price regression outcomes show that book value of equity and earnings under IFRS are jointly and systematically more value relevant than the corresponding I-GAAP amounts. In addition, it emerges that earnings increase their relative value relevance more than book value of equity when moving to IFRS, despite higher relative value relevance of book value of equity under I-GAAP. Return regression results also point out that earnings changes increase their explanatory power during the IFRS adoption period. Finally, the sectoral analysis highlights that IFRS adoption particularly increases the value relevance for financial companies, and that firms operating in the Services sector also experience a consistent increase in the quality of accounting information. On the contrary, value relevance seems to remain almost unchanged for the Industry sector firms. These different results would stimulate the debate about whether accounting regulation should be more industry-oriented.

Nevertheless, as reported in literature, accounting quality is also a function of firms' reporting incentives created by market and political factors. In view of that, this study has documented that the recent growth of the equity market, the ongoing company privatization process, the decrease in ownership concentration as well as the divergence between accounting and taxation are all factors that might have contributed to strengthen IFRS implementation therefore positively influencing the accounting information quality.

This paper has tried to continue the research in the area of adopting IFRS. The results may be relevant to international regulators and institutions involved in the accounting harmonization process, either because Italian listed companies were required to apply IFRS in individual accounts, or because the results provide an example of the impact which IFRS have on a European country characterized by regulatory rigidity and a legalistic outlook. Of course, it is not possible to draw definitive inferences from these results since IFRS are observable only for three years. However, the empirical analysis shows solid concerns in favour of their future consolidation that, as previously discussed, will also depend on the full coordination between financial reporting practice and regulatory environment.

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Notes

Note 1. Hereinafter, the term “IFRS” is used to refer to both the accounting standards issued by IASB and the International Accounting Standards (IAS), issued by the International Accounting Standards Committee (IASC), which was the IASB’s predecessor.

Note 2. IASC Foundation Constitution, Part A, para. 2. [Online] Available: <http://www.iasb.org/NR/rdonlyres/7EDF6B63-8A7A-4741-8C63-1EDD10A50E55/0/Constitutionnewcover.pdf> (25 August, 2009)

Note 3. Bianchi and Bianco (2007, p. 19) document that the weighted average share of banks in Italian listed companies was 4.7% in 2006, whereas it was 6.1% in Germany and 9.6% in Spain.

Note 4. The motivations about little increase in FDI are reported in OECD (2006, p. 9).

Note 5. <http://www.borsaitalia.it>

Note 6. The term “Generally Accepted Accounting Principles” (GAAP) is not formally defined in Italy. Nevertheless, the term “Italian GAAP” is used throughout the paper and abbreviated with the acronym I-GAAP to simplify terminology.

Note 7. This decomposition has been used in Collins, Maydew and Weiss (1997), and Arce and Mora (2002).

Note 8. The same approach to incremental value relevance analysis has been used by Collins et al. (1997). King and Langli (1998), Francis and Schipper (1999) and Arce and Mora (2002).

Note 9. This increase has been empirically tested by restricting the analysis to the 50 financial companies and by

measuring their combined value relevance with respect to the 2004 IFRS-restated financial statements, as required by IFRS 1, and to the 2005 financial statements. Since the R^2_{j*} increases from 23% to 87%, it seems that empirical evidence supports this belief, although this finding cannot be generalized because of the reduced sample size.

Note 10. See the CEBS website www.c-ebs.org/

Table 1. The evolution of equity market, ownership concentration and foreign direct investment in Italy during the period 2001-2007

Year	2001	2002	2003	2004	2005	2006	2007
<i>Equity Market</i>							
N. Listed companies	294	295	279	278	282	311	344
N. IPO	18	14	10	10	19	46	49
N. Takeover bids	20	22	32	19	23	15	22
Market Capitalization (% GDP)	47.4	35.4	36.5	41.8	47.7	52.8	48.0
Market Capitalization (€ mil.)	592 319	457 992	487 446	580 881	676 606	778 501	733 614
Overall trading activity (€ mil.)	658 042	633 659	679 017	732 592	954 796	1 145 650	1 574 595
Average daily trading activity (€ mil.)	2 611	2 515	2 695	2 851	3 730	4 510	6 248
Turnover velocity (% of Mkt. Cap.)	93.3	120.7	143.6	137.1	151.9	157.5	208.3
<i>Foreign Direct Investment</i>							
FDI flows inward (€ mil.)	11 037	10 854	12 250	12 549	14 904	12 996	11 709
FDI flows outward (€ mil.)	15 926	12 778	6 769	14 375	29 605	31 185	59 194
<i>Ownership Concentration</i>							
% shares owned by the largest shareholder	42.2	40.7	33.5	32.7	28.6	27.5	25.4
% shares owned by other majority shareholders	9.2	8.0	11.6	13.0	15.5	15.2	14.4
% shares owned by market	48.6	51.2	54.9	54.3	55.9	57.3	60.2

Sources. *Equity market*: Borsa Italiana – Italian Stock Exchange (2008); *Foreign Direct Investment*: United Nations Conference on Trade and Development – UNCTAD (2008). The data cover all types of financial flows affecting equity capital, namely: listed voting stocks (shares), unlisted voting stocks, other non-voting stocks (including preferred shares), and non-cash acquisitions of equity, such as through the provision of capital equipment. They also include bonds and money market instruments, loans, financial leases and trade credits as well as the purchase and sale of land and buildings in Italy/abroad by non-resident/resident enterprises and individuals; *Ownership Concentration*: Commissione Nazionale per le Società e la Borsa (CONSOB) – Italian Stock Exchange Regulator (2008).

Table 2. The distribution of the Italian listed companies in the three main sectors from 2002 to 2007 and a comparison between the population weights and the sampling weights

Main Sector	2002		2003		2004		2005		2006		2007	
	<i>Pop. W.</i>	<i>W. diff.</i>										
Finance	36%	-5%	35%	-4%	33%	-2%	35%	-4%	35%	-4%	32%	-1%
Industry	45%	1%	45%	1%	45%	1%	44%	2%	42%	4%	44%	2%
Services	19%	4%	20%	3%	22%	1%	21%	2%	23%	0%	24%	-1%
Total	100%		100%		100%		100%		100%		100%	
N. listed companies	232		225		224		216		220		228	
Sampling companies (%)	69.0%		71.1%		71.4%		74.1%		72.7%		70.2%	

Notes. Data have been collected from the Italian Stock Exchange website (www.borsaitalia.it). *Pop. W.* is the proportion of Italian listed companies belonging to the three sectors and *W.diff.* is the difference between *Pop. W.* and the proportion of sampling companies belonging to a sector.

Table 3. Descriptive statistics and correlation among variables

<i>Panel A: descriptive statistics and correlation matrix for the period (2002-2007) N=852</i>					
<i>Descriptive Statistics</i>					
Variable	Mean	Median	Standard deviation	Min.	Max.
<i>Price (P)</i>	6.49	3.96	6.85	0.26	35.01
<i>Book Value (BV)</i>	3.60	2.30	3.68	0.02	21.11
<i>Earnings (E)</i>	0.31	0.18	0.56	-1.42	2.78
<i>Correlation matrix</i>					
	<i>Price (P)</i>		<i>Book Value (BV)</i>		<i>Earnings (E)</i>
<i>Price (P)</i>	1.000				
<i>Book Value (BV)</i>	0.694 ***		1.000		
<i>Earnings (E)</i>	0.612 ***		0.508 ***		1.000
<i>Panel B: descriptive statistics and correlation matrix for the period (2002-2004) N=432</i>					
<i>Descriptive Statistics</i>					
Variable	Mean	Median	Standard deviation	Min.	Max.
<i>Price (P)</i>	5.42	3.33	5.56	0.26	29.2
<i>Book Value (BV)</i>	3.36	2.17	3.33	0.08	18.46
<i>Earnings (E)</i>	0.21	0.12	0.47	-1.61	2.10
<i>Correlation matrix</i>					
	<i>Price (P)</i>		<i>Book Value (BV)</i>		<i>Earnings (E)</i>
<i>Price (P)</i>	1.000				
<i>Book Value (BV)</i>	0.705***		1.000		
<i>Earnings (E)</i>	0.491***		0.441***		1.000
<i>Panel C: descriptive statistics and correlation matrix for the period (2005-2007) N=422</i>					
<i>Descriptive Statistics</i>					
Variable	Mean	Median	Standard deviation	Min.	Max.
<i>Price (P)</i>	7.70	5.11	7.90	0.26	36.99
<i>Book Value (BV)</i>	3.84	2.46	4.03	0.08	22.38
<i>Earnings (E)</i>	0.44	0.27	0.64	-1.20	3.29
<i>Correlation matrix</i>					
	<i>Price (P)</i>		<i>Book Value (BV)</i>		<i>Earnings (E)</i>
<i>Price (P)</i>	1.000				
<i>Book Value (BV)</i>	0.713***		1.000		
<i>Earnings (E)</i>	0.683***		0.585***		1.000

Notes. P is the price per share of firm i at the end of year t , E is the earnings per share of firm i at the year-end t , and BV is the book value per share of firm i at the year-end t . The symbols *, **, *** indicate the statistical significance of the test for the association between paired samples, using Pearson's product moment correlation coefficient, at 0.10, 0.05, and 0.01, respectively.

Table 4. Pooled regression results

Panel A: Price regression models

Models:

(1) $P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 E_{it} + \varepsilon_{it}$;

(2) $P_{it} = \beta_0 + \beta_1 BV_{it} + \varepsilon_{it}^{BV}$;

(3) $P_{it} = \gamma_0 + \gamma_1 E_{it} + \varepsilon_{it}^E$

Year	N	$\hat{\alpha}_1$	$\hat{\alpha}_2$	R^2_{1*}	$\hat{\beta}_1$	R^2_{2*}	$\hat{\delta}_1$	R^2_{3*}	Vuong's statistic	R^2_{BV}	R^2_E
02-04 I-GAAP	442	0.18 10.16***	0.16 3.07***	0.48	0.20 13.17***	0.46	0.42 6.36***	0.18	3.49***	0.30	0.02
05-07 IFRS	437	0.11 6.28***	0.40 6.75***	0.60	0.17 11.36***	0.50	0.68 11.81***	0.47	0.48	0.13	0.10
Pooled	882	0.14 10.89***	0.32 7.69***	0.56	0.18 16.08***	0.48	0.60 12.97***	0.36	2.28**	0.20	0.07
Chow's F statistic				10.36***	4.41**		11.07***				

Panel B: Return regression models

Model: (4) $r_{it} = \gamma_0 + \gamma_1 [E_{it}/P_{it-1}] + \gamma_2 [\Delta E_{it}/P_{it-1}] + \varepsilon_{it}^r$

Year	N	$\hat{\gamma}_1$	$\hat{\gamma}_2$	R^2	ΔR^2 due to $\hat{\gamma}_1$	ΔR^2 due to $\hat{\gamma}_2$
02-04 I-GAAP	442	0.24 4.81***	-0.03 -0.44	0.05	0.05	0.00
05-06 IFRS	444	-0.07 -1.53	0.33 6.30***	0.10	0.01	0.10
Pooled	886	0.02 0.49	0.18 2.84***	0.03	0.00	0.03
Chow's F statistic				12.03***		

Notes. N is the number of observations used to estimate each model. The first number in each cell reports the standardized regression coefficient, whereas the second is the value of the White-corrected t -statistic to test whether the regression coefficient is equal to zero. The symbols *, **, *** indicate the statistical significance of the test at 0.10, 0.05, and 0.01, respectively.

In Panel A, P_{it} is the price of a share for firm i six months after the fiscal year-end t ; BV_{it} is the book value per share of firm i at the end of the year t ; E_{it} denotes the earnings per share for firm i for time period $t-1$ to t . R^2_{1*} , R^2_{2*} and R^2_{3*} are the adjusted R^2 's. Vuong's test Z statistic measures the significance of the relative value relevance of model (2) over model (3). $R^2_{BV} = R^2_{1*} - R^2_{3*}$ and $R^2_E = R^2_{1*} - R^2_{2*}$ measure the incremental value relevance of BV and E respectively.

In Panel B, r_i is the dividend adjusted stock market return of firm i six months after the fiscal year-end t ; E_{it}/P_{it-1} is the earnings per share of year t deflated by the stock price in year $t-1$ observed for firm i ; $\Delta E_{it}/P_{it-1}$ is the change in the earnings per share from years $t-1$ to t deflated by the stock price in year $t-1$ observed for firm i .

Table 5. Pooled regression results comparing the pre-adoption period with the post-adoption one in the three macro-sectors

Panel A: Price regression models

Models: $P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 E_{it} + \varepsilon_{it}$; $P_{it} = \beta_0 + \beta_1 BV_{it} + \varepsilon_{it}^{BV}$; $P_{it} = \gamma_0 + \gamma_1 E_{it} + \varepsilon_{it}^E$

<i>Year</i>	<i>N</i>	$\hat{\alpha}_1$	$\hat{\alpha}_2$	R^2_{1*}	$\hat{\beta}_1$	R^2_{2*}	$\hat{\delta}_1$	R^2_{3*}	<i>Vuong's statistic</i>	R^2_{BV}	R^2_E
Finance Sector											
02-04 _{I-GAAP}	136	0.13 3.25***	0.30 1.94*	0.50	0.19 9.10***	0.46	0.65 7.96***	0.41	0.54	0.08	0.04
05-07 _{IFRS}	134	0.01 0.37	0.82 4.16***	0.73	0.14 5.00***	0.44	0.86 6.70***	0.73	-2.15**	0.00	0.29
Pooled	273	0.05 2.17**	0.64 4.98***	0.66	0.18 9.50***	0.45	0.80 11.64***	0.64	-1.47*	0.02	0.18
<i>Chow's F statistic</i>				7.09***	3.91**		3.53**				
Industry Sector											
02-04 _{I-GAAP}	201	0.19 8.94***	0.20 3.32***	0.60	0.21 9.85***	0.57	0.36 3.37***	0.13	4.25***	0.47	0.03
05-07 _{IFRS}	198	0.13 7.85***	0.31 4.83***	0.61	0.16 9.16***	0.54	0.59 6.00***	0.34	1.93**	0.27	0.07
Pooled	403	0.15 10.60***	0.21 3.47***	0.57	0.17 12.25***	0.55	0.44 4.98***	0.19	3.82***	0.38	0.04
<i>Chow's F statistic</i>				5.38***	4.49**		3.20**				
Service Sector											
02-04 _{I-GAAP}	99	0.19 7.01***	0.33 2.70**	0.35	0.21 5.48***	0.25	0.39 2.41**	0.15	0.67	0.21	0.10
05-07 _{IFRS}	98	0.14 3.59***	0.58 4.97***	0.52	0.23 3.21***	0.22	0.67 5.50***	0.45	-1.78**	0.07	0.30
Pooled	198	0.20 5.23***	0.45 5.13***	0.43	0.23 5.33***	0.23	0.50 4.97***	0.25	-0.15	0.18	0.20
<i>Chow's F statistic</i>				2.32*	0.06		3.84**				

Panel B: Return regression models

Model: $r_{it} = \gamma_0 + \gamma_1 [E_{it}/P_{it-1}] + \gamma_2 [\Delta E_{it}/P_{it-1}] + \varepsilon_{it}^r$						
Year	N	$\hat{\gamma}_1$	$\hat{\gamma}_2$	R^2	ΔR^2 due to $\hat{\gamma}_1$	ΔR^2 due to $\hat{\gamma}_2$
Finance Sector						
02-04 _{I-GAAP}	137	0.18 1.74	-0.14 -0.96	0.02	0.02	0.01
05-07 _{IFRS}	138	-0.30 -3.07***	0.57 3.38***	0.27	0.07	0.27
Pooled	274	-0.13 -1.65	0.23 2.77**	0.04	0.01	0.04
<i>Chow's F statistic</i>				7.47***		
Industry Sector						
02-04 _{I-GAAP}	200	-0.25 3.67***	0.07 0.75	0.08	0.04	0.00
05-07 _{IFRS}	201	0.00 0.07	0.14 1.61	0.01	0.00	0.01
Pooled	404	0.00 1.90*	0.07 1.32	0.02	0.00	0.00
<i>Chow's F statistic</i>				4.61**		
Services Sector						
02-04 _{I-GAAP}	102	0.08 0.67	-0.02 -0.12	0.00	-0.01	-0.01
05-07 _{IFRS}	103	-0.24 -1.79*	0.46 3.14***	0.21	-0.05	0.20
Pooled	204	-0.05 -0.48	0.26 2.02*	0.05	0.00	0.06
<i>Chow's F statistic</i>				3.99***		

Notes. N is the number of observations used to estimate each model. The first number in each cell reports the standardized regression coefficient, whereas the second is the value of the White-corrected t -statistic to test whether the regression coefficient is equal to zero. The symbols *, **, *** indicate the statistical significance of the test at 0.10, 0.05, and 0.01, respectively.

In Panel A, P_{it} is the price of a share for firm i six months after the fiscal year-end t ; BV_{it} is the book value per share of firm i at the end of the year t ; E_{it} denotes the earnings per share for firm i for time period $t-1$ to t . R_{1*}^2 , R_{2*}^2 and R_{3*}^2 are the adjusted R^2 's. Vuong's test Z statistic measures the significance of the relative value relevance of model (2) over model (3). $R_{BV}^2 = R_{1*}^2 - R_{3*}^2$ and $R_E^2 = R_{1*}^2 - R_{2*}^2$ measure the incremental value relevance of BV and E respectively.

In Panel B, r_i is the dividend adjusted stock market return of firm i six months after the fiscal year-end t ; E_{it}/P_{it-1} is the earnings per share of year t deflated by the stock price in year $t-1$ observed for firm i ; $\Delta E_{it}/P_{it-1}$ is the change in the earnings per share from years $t-1$ to t deflated by the stock price in year $t-1$ observed for firm i .