

THE VALUE RELEVANCE OF IFRS IN THE EUROPEAN BANKING INDUSTRY

By

Mariarosaria Agostino*, Danilo Drago** and Damiano B. Silipo*

ABSTRACT

We investigate the market valuation of accounting information in the European banking industry before and after the adoption of IFRS, the latest version of International Accounting Standards (IAS). In a value relevance framework, we apply panel methods to a multiplicative interaction model in which the partial effects of earnings and book value on share prices are conditional on the adoption of IFRS. According to our evidence, the IFRS introduction enhanced the information content of both earnings and book value for more transparent banks. By contrast, less transparent entities did not experience significant increase in the value relevance of book value.

Keywords: Value-relevance, Accounting information, IFRS/IAS, Information efficiency.

Abbreviations: IFRS: International Financial Reporting Standards; IAS: International Accounting Standards; GAAP: Generally Accepted Accounting Principles

* Dipartimento di Economia e Statistica –Università della Calabria -Italy.

**Dipartimento di Scienze Aziendali –Università della Calabria –Italy.

Introduction

Since 1 January 2005 all listed companies in the European Union have been required to publish their consolidated financial statements in accordance with International Accounting Standards, known as IAS/IFRS rather than national requirements (local GAAP). Regulation 1606/2002/EC on this matter is the most significant result in European Union's accounting harmonization process and another step toward the integration of European financial markets.

Though the harmonization is only partial because of the various accounting options in some standards (Banque de France, 2005), regulators and market participants alike expect significant economic benefits from the new standards. The common view is that greater transparency, improved accounting quality and comparability thanks to the international standardization of corporate accounting regulation will facilitate the widest possible access to investment capital across the EU. To this aim, it is necessary "...to complete the integration of the European market for financial services which is dependent on developing an integrated financial and capital market and making company financial statements more easily comparable" (EC, 2000).

Financial reporting under IAS/IFRS provide accounting harmonization and may result in better information quality than local GAAP. One generally accepted method of measuring accounting quality is to test its relevance to market value. Market value relevance means that there is a statistical association between financial information and stock prices or returns.

This paper takes market value relevance as a proxy for overall information quality and investigates whether the value relevance increased after the adoption of IAS/IFRS by listed

banks in Europe. Using a standard value-relevance model, we examine the value relevance of earnings and book value for 221 listed banks from 2000 to 2006.

A number of papers have studied the value relevance of IAS/IFRS, sampling companies that complied with international standards voluntarily. The literature shows that voluntary movement towards international accounting harmonization has varied with developments in local and international accounting regulations, indicating a certain degree of opportunism on the part of management (e.g., Stolowy and Ding, 2003), so these findings may be affected by selection bias. Our analysis, by contrast, considers the impact of mandatory introduction of IAS/IFRS.

We use panel rather than cross-section data, the latter used in most of the value-relevance literature. Indeed, notwithstanding harmonization, most of the political and economic factors influencing financial reporting practices remain local and differentiated (Ball, 2006). With panel data, combined to country-level clusterization, we can control for individual and country characteristics that may be unobservable or hard to measure, such as legal systems, financial systems, or alignment between tax and financial reporting, and that differ across our sample.

Banks and financial institutions were significantly affected by the new accounting standards. One critical element is that IAS/IFRS rely heavily on fair value accounting, as opposed to the concept of historical cost. IAS 39 on the recognition and valuation of financial instruments is particularly important for banks and financial institutions, whose assets and liabilities consist principally in such instruments. Whether fair value information on banks' assets and liabilities is useful to investors is debated in the financial accounting literature. While we recognize the importance of IAS 39 in particular, our purpose here is to

inquire into the value relevance of the entire body of IAS/IFRS, not individual accounting standards.

The accounting quality of banks' financial statements is relevant not only to investors but also to bank supervisors. The Third Pillar of the new Basel Capital Accord tightens market discipline by stiffening disclosure and transparency requirements. Market discipline means that investors will adjust the cost of capital according to the banks' risk exposure. Effective market discipline depends on the stakeholders' being provided with the information necessary to assess each bank's financial condition, earnings prospects and risk. In turn, this assessment depends on the extent of disclosure and on the quality of accounting.

On the whole, our empirical results provide clear evidence that the impact of earnings statements on the price of bank stocks increased following the compulsory introduction of IFRS. On the other hand, in most estimations, no significant influence of book value on the stock price was found.

The rest of the paper is organized as follows. Section 1 reviews the literature. Section 2 describes the model and Section 3 the data. Section 4 presents the results and the robustness checks performed, followed by concluding remarks in Section 5.

1. Related literature

Credible information is critical to efficient capital markets for at least two reasons: it increases the incentive to invest in the stock market and it favors optimal allocation of savings to investment. However, entrepreneurs typically have better information than savers about the value of business investment opportunities, and they may have an interest in overstating their value or expropriating the assets that savers invest. Both information

asymmetries and conflicting incentives between entrepreneurs and savers impede the efficient allocation of resources.

In the last decade there has been increasing attention to the way in which corporate reporting can mitigate information and agency problems. This literature has addressed such questions as: how effective are accounting standards in facilitating credible communication between managers and outside investors? What factors determine this effectiveness? Which types of accounting standards produce the most relevant information for investors or other stakeholders? Is a global standard more valuable than national accounting standards?

The main focus of recent research has been on the last two questions.

An accounting value is defined as value-relevant if it has a predicted significant relation to share prices. This is the case when the item conveys information that investors use in valuing the firm and when it is measured reliably enough to be reflected in share prices.¹ A related issue, then, is whether one of the alternative accounting standards produces more relevant and reliable information than the others.

A number of studies compare the value relevance of IAS, US-GAAP and local GAAP in other countries. Most are based on the model of Ohlson (1995) and subsequent refinements, which represents the value of the firm as a linear function of the book value of equity and the current value of any expected abnormal earnings (extra profit). Value relevance is estimated by the degree of explanatory power of the model. Barth et al. (2006), on a sample of 428 firms applying IAS from 1990 to 2004, found that the accounting quality of IAS is lower than US GAAP but higher than other domestic GAAP. Finally, introducing IAS reduces the difference in accounting quality between the IAS and US firms. By contrast, Harris and Muller (1999), based on a sample of 31 IAS firms cross-

listed on US markets over the period 1992-1996, found limited evidence that reconciliation with US-GAAP, even in respect of IAS, provides relevant information to the market.

Another way of appraising the relative performance of IAS and US GAAP is suggested by Leuz (2003) and Bartov et al. (2004). These authors compare the value relevance for German companies traded on German stock exchanges before and after their switch from German accounting rules to either US GAAP or IAS. Leuz measures information asymmetry for firms on Germany's New Market, finding little evidence in bid/ask spreads or trading volume of differing value relevance of the switch to US GAAP compared with a switch to IAS. Bartov et al. (2005) gets similar results by comparing value relevance measured as the slope coefficient of the returns/earnings regression. Ashbaugh and Olsson (2002) examine non-US firms listed on London's SEAQ and find that IAS and US GAAP earnings and book values of equity are equally value-relevant, but that the degree of value relevance depends on the valuation model used.

It is worth noting that both US-GAAP and IAS were developed in environments where accounting practices are determined primarily in the private sector and capital is traditionally raised in regulated markets, so the primary focus of both sets of standards is the information needs of current and prospective shareholders. By contrast, the civil law systems prevailing in most continental European countries and Japan rely heavily on intermediaries such as banks; investors typically have access to private information and there is less reliance on public information. Therefore, civil law systems tend to have lower standards of public disclosure and to generate less public information; and financial reporting tends to be designed more to minimize taxes and earnings and to reduce share volatility than to convey value-relevant information.

Accordingly, we expect the application of IAS in civil law systems to be more value-relevant than in common law systems. Bartov et al. (2005) showed that the value relevance of earnings as reported in US-GAAP or IAS is greater than under German GAAP. By contrast, Dumontier and Labelle (1998), find that earnings according to French accounting principles are no less value-relevant than those prepared in accordance with American or British GAAP. More interestingly, Eccher and Healy (2000), Wu et al. (2005) and Hu (2002) all find that the accounting amounts based on IAS are no more value-relevant than those based on Chinese GAAP. These authors suggest that this unexpected result reflects the lack of effective controls and monitoring infrastructures rather than the nature of IAS.

In line with the last conclusion, Ball et al. (2003) argue that it is misleading to classify countries according to accounting standards while ignoring incentives, transparency indexes, and IAS advocacy. They study the quality of financial reporting in Hong Kong, Malaysia, Singapore and Thailand. Quality is defined for operational purposes as the timely accounting entry of amounts relevant to the income statement (particularly losses). Although in these four countries accounting standards are largely derived from common law and thus similar to IAS, the authors find that loss recognition by firms in these countries is no more timely than for firms in civil code countries. They attribute this finding to lack of incentives for managers and auditors in these common law countries. In short, the application of accounting standards also depends significantly on the regulatory, enforcement, and attestation environment.

By contrast, Swartz and Negash (2006) estimate the effects of IAS on the Johannesburg Securities Exchange and find some evidence that accrual information prepared under IAS was more value-relevant than under local standards, notwithstanding the considerable similarity between the two accounting regimes.

The evidence concerning the effects of IAS/IFRS on accounting quality, then, is mixed, both in Europe and elsewhere. It is worth remarking that the results surveyed here are based on different indicators of information quality and cover different time spans, and so are not readily comparable.²

The qualitative results for the banking sector are similar. Barth et al. (1996) offer evidence that fair value estimates of loans, securities and long-term debt in the United States under SFAS 107 have significant explanatory power with respect to the prices of bank stocks, greater than that of book values. But Eccher et al. (1996) and Nelson (1996) found that the value relevance of SFAS 107 disclosures for bank shares have no incremental explanatory power, except in respect of investment securities. Park et al. (1999) also found evidence of value relevance for fair value accounting of investment securities.

More recently, Barth et al. (2008) have compared the characteristics of accounting amounts for firms using IAS with those of a matched sample of firms that do not. The intent is to determine whether the adoption of IAS is associated with better accounting quality and lower capital cost, employing a broader measure of accounting quality and a broader sample of firms using IAS. They consider 2295 firms using IAS in 23 countries, with adoption years from 1994 to 2003. Their sample is thus much broader and longer-lasting than those on which earlier studies were based.

Barth et al. (2008) consider three indicators of accounting quality: earnings management, prompt loss recognition and value relevance; they posit that accounting quality is higher when earnings management is less, loss recognition prompter and the value relevance of the amounts entered greater. And in fact according to their estimations following the adoption of IAS firms display less earnings management, more timely loss

recognition, and greater value relevance of the accounting amounts. That is, their results sustain the thesis that international standards produce better accounting quality than local GAAP outside the US.

However, these results may be suffer from sample selection bias, as at the time of Barth et al.'s study the adoption of IAS was still voluntary. Moreover, their assumptions may not be valid in an environment in which the adoption of IAS/IFRS is compulsory. The European Union now offers a unique opportunity to address the issue of whether the earlier findings can be extended to situations in which the adoption of IAS/IFRS is compulsory. Starting 1 January 1 2005, in fact, all listed companies have been required to prepare their financial statements in accordance with International Financial Reporting Standards (IFRS). This was one of the most substantial changes to financial reporting in recent years, affecting some 7,000 listed firms in Europe that for the most part had applied domestic accounting standards.

Preliminary results indicate significant positive market reactions to events that increased the likelihood of the adoption of IFRS.³ Armstrong et al. (2008) used event-study method to examine the European stock markets' reaction to sixteen events that either increased or decreased the likelihood of IFRS being adopted. They found that investors generally responded positively to events that increased the likelihood of adoption to IFRS, negatively to those decreasing it. This suggests that investors' perception was that the benefits of the adoption of the new standards (convergence among financial systems and improved financial reporting) would outweigh the costs of replacing domestic with global financial reporting standards. They also found that the market reaction on the event dates was less pronounced for firms cross-listed on US exchanges, because they were also subject to US GAAP, which more closely resembles IFRS.

Horton and Serafeim (2007) inquire whether there is market reaction or value relevance of the information contained in the reconciliation adjustments to bring a firm's previously reported UK GAAP accounts into line with IFRS, finding that the firms that decrease their earnings suffer an abnormal negative return at the date of the announcement. These results are driven mostly by firms not listed in the US, which therefore do not also report under US GAAP. After controlling for UK GAAP, IFRS earning reconciliation adjustments are incrementally value-relevant.

To date, however, there has very few papers on the value relevance of IFRS as endorsed by the European Union. Among them, Morais and Curto (2007), which lends support to the thesis that the value relevance of European listed firms' accounting amounts increased with adoption of IFRS. They also found that the impact of the adoption of the international standards is greater in civil code than in common law countries. However, their data include the period 2000-2005 and do not distinguish between voluntary and compulsory adoption. Other works deals with the effects produced in one country (Abellán and Aledo, 2007, Gjerde et al., 2008), or with the effects produced in few countries (Daske et al., 2007, Capkun et al., 2008, Sellhorn et al., 2008, Prather-Kinsey et al., 2008). Our paper is thus the first on the relative performance of IFRS and local GAAP for banks in the European countries after the new standards were made compulsory.

2. Empirical questions and methodology

The conventional wisdom, corroborated by some empirical studies (see, for instance Barth, et al., 2006, and 2008), has it that replacing local GAAP with IAS/IFRS should improve the quality of accounting amounts. Here we test this prediction on European listed banks, for which IFRS became mandatory in 2005. Using data from 2000 to 2006, we

investigate whether the new standards are in fact more value-relevant by estimating a panel valuation model to see whether the value-relevance of accounting information changed. Formally, building on the well-known Ohlson (1995) framework, we estimate the following model:

$$P_{it} = \alpha_0 + \alpha_1 BVPS_{it} + \alpha_2 EPS_{it} + \alpha_3 postIAS_t + \alpha_4 BVPS_{it} * postIAS_t + \alpha_5 EPS_{it} * postIAS_t + \delta T + \varepsilon_{it} \quad (1)$$

where P_{it} is the stock price six months after the end of the fiscal year, $BVPS_{it}$ is per-share book value, EPS_{it} is earnings per share, and $postIAS$ is a dummy coded 1 when IFRS become mandatory, namely for the years 2005 and 2006, and 0 otherwise. Previous studies using the same dependent variable are Barth et al. (2008) and Barth et al. (2006). As a robustness check, however, we also employ the price of the stock three months after the end of the year (see Section 4). Finally, the T variable is a trend, and $\varepsilon_{it} = \nu_i + u_{it}$ is a composite error, in which the individual effect (ν_i) summarizes unobserved time-invariant bank characteristics and the second term (u_{it}) captures idiosyncratic shocks to market value. The reason for disaggregating this error term is that this enables us to control properly for unobserved heterogeneity of banks, factoring out a different fixed effect for each one.⁴ OLS regressions on pooled data would estimate a single intercept for all the banks, omitting the characteristics that are specific to each and that tend not to vary over a short period of time (ownership concentration, managerial preferences, and so on). Omitting relevant unobservable factors would misspecify the model from the econometric standpoint and would inevitably produce biased (or inconsistent) OLS estimates. The statistical relevance of bank-specific fixed effects is verified by implementing a poolability test (the Breusch and Pagan Lagrange-multiplier test for random effects). Since this rejects the null hypothesis that $Var(\nu_i)=0$, an omitted-variables bias is likely to plague pooled regression

estimates in our sample. And as the Hausman test rejects the null hypothesis of no correlation between fixed effects and explanatory variables, so we adopt a fixed effects estimator.⁵ What is more, the market value of a bank is likely to be sensitive to a variety of factors reflecting differences in national economic environments unrelated to the change in accounting standards. Although the fixed effects estimator accounts for all time-invariant factors, some of these confounding effects may remain insofar as there remains some intra-country clustering of errors.⁶ In other words, institutional factors such as listing requirements, market microstructure and enforcement (see Leuz, 2003 and Barth et al., 2008) are likely to affect the market reaction in each country, which implies some national correlation of the error terms.⁷ Accordingly, it is reasonable to cluster the observations at country level so that the error terms may be correlated for banks belonging to same country over time. It is worth remarking that when clustering we get SEs that are robust both to heteroskedasticity and to intra-group correlation.

Turning to the parameters of interest, we specify a multiplicative interaction model in which the partial effect of earnings and book value on share prices are conditional on the adoption of IFRS. The marginal effects of earnings and book value depend on the *postIAS* dummy. When it is 0 (before adoption of the international standards), the marginal effects coincide with the estimated coefficients on the two regressors ($\frac{\partial P}{\partial BVPS} = \hat{\alpha}_1$; $\frac{\partial P}{\partial EPS} = \hat{\alpha}_2$), and significance is given by the t-statistic (that we report below the coefficients). When

the *postIAS* dummy is 1, the respective marginal effects are: $\frac{\partial P}{\partial BVPS} = \hat{\alpha}_1 + \hat{\alpha}_4$ and

$\frac{\partial P}{\partial EPS} = \hat{\alpha}_2 + \hat{\alpha}_5$, and we test their significance by calculating the relative standard errors as

follows:
$$\hat{\sigma}_{BVPS} = \sqrt{\text{var}(\hat{\alpha}_1) + \text{var}(\hat{\alpha}_4) + 2 \text{cov}(\hat{\alpha}_1, \hat{\alpha}_4)}$$
 and

$\hat{\sigma}_{EPS} = \sqrt{\text{var}(\hat{\alpha}_2) + \text{var}(\hat{\alpha}_5) + 2 \text{cov}(\hat{\alpha}_2, \hat{\alpha}_5)}$. These values are reported after the list of coefficients, in two rows (see Tables 2, 3 and 4 below).

To summarize, we have specified the partial effects of book value and earnings as dependent on when IFRS are adopted, so the marginal effects may change sign and gain or lose significance depending on the period under scrutiny.

It is worth mentioning that some previous studies, which compare the value relevance of earnings and book value before and after listed firms adopt IAS, implement tests for the comparison of the R2 values (see for instance Barth et al. 2008, and Curto and Morais 2007). When we implement a similar test, we find that the R2 after the adoption of IAS is significantly higher than that before 2005. Assuming independence between the samples, we compute the following test statistic: $Z = (R_{PRE}^2 - R_{POST}^2) / (\sqrt{\sigma_{R_{PRE}^2}^2 + \sigma_{R_{POST}^2}^2})$, where R_{PRE}^2 and R_{POST}^2 are the coefficients of determination from the pre-adoption and the post-adoption FEM regression respectively, while $\sigma_{R_{PRE}^2}^2$ and $\sigma_{R_{POST}^2}^2$ are the relative bootstrap variances. By the bootstrap method, we repeatedly re-estimated the R2 using (1000) random samples with replacement from the original data. The resulting bootstrap variances are not reliant on any distributional assumptions on R2. We do not emphasize this result, yet, as the difference in R2 could be due to differences in any of three components: the structural coefficients, the variances of the exogenous variables, and the variances of the error terms. Since our interest is detecting whether the structural effects of earnings and book values have changed we estimate an interaction model where the relevant effects are made dependent on the IFRS adoption.

3. Data

Our sample includes banks whose shares are traded on a stock exchange in one of the EU-15 (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom). Information on share prices, book value and earnings are drawn from Bankscope - Bureau van Dijk. After adjusting for data availability for different variables, we have a final sample of 1201 annual observations for 221 European listed banks. The panel is unbalanced and spans the years 2000 to 2006. Table I arranges the banks by nationality. Denmark, Italy, France, Germany and Britain have the most banks in the sample, Luxembourg the fewest.

Table I: Number of banks and bank-year observations for each sample country

Country	Bank-year obs	Percent	Banks	Percent
AUSTRIA	50	4.16	10	4.52
BELGIUM	25	2.08	4	1.81
DENMARK	247	20.57	40	18.1
FINLAND	20	1.67	4	1.81
FRANCE	166	13.82	34	15.38
GERMANY	112	9.33	30	13.57
GREECE	66	5.5	13	5.88
IRELAND	32	2.66	5	2.26
ITALY	178	14.82	31	14.03
LUXEMBOURG	15	1.25	3	1.36
NETHERLANDS	38	3.16	7	3.17
PORTUGAL	33	2.75	5	2.26
SPAIN	84	6.99	14	6.33
SWEDEN	28	2.33	4	1.81
UK	107	8.91	17	7.69
Total	1201	100	221	100

In our sample, earnings are never negative, and after controlling for outliers the dispersion around the mean is minor. This must be taken into account in appraising the impact of book value on stock prices, as the literature has shown that this is greater when earnings are negative. To account for potential outliers, we winsorize all variables involved in the econometric analysis, at the 5% level. Barth et al. (2006) use the same method to mitigate the potential influence of outliers. When, as an alternative way of coping with the presence of extreme values, we drop the observations lying in the first and last percentile of the distribution, results remain substantially unaltered (see sub-section 4.4).

4. Results

We estimate the model using different samples. First (Section 4.1), we take all the available observations, i. e. the unbalanced panel described above. Then (Section 4.2), we convert it into a balanced panel (by considering only the banks with data available for every year). This sample is convenient in that we can compare the effects of IFRS adoption on the same set of banks, but it reduces the useable data points drastically,⁸ so that the unbalanced sample may involve a gain in efficiency that is not negligible. Finally (Section 4.3), we take separate sub-samples of high and low-capitalization banks; banks organized in the legal form of cooperatives and those organized as public limited companies, and also we distinguish rated from non rated banks. These segmentations are intended to inquire into the potentially different response of small, cooperative, and non rated banks, which are generally regarded as more opaque and so perhaps less strongly affected by the adoption of international accounting standards.

Summing up, the use of different panels permits greater confidence over the main findings of the analysis and also provides further insight into the effects under different circumstances (size, legal form and rating) that are presumed to be relevant.

4.1 UNBALANCED PANEL ESTIMATES

Table II reports the results of the fixed effects model: column 1 the baseline Ohlson model estimates, column 2 adding the *postIAS* dummy variable and interaction terms, and column 3 clustering observations at the country level.

In column 1 the book value coefficient is negative but not significantly different from zero, the earnings and trend parameters are positive and statistically significant at all conventional levels. In the fully interacted model, the book value coefficient remains insignificant in itself prior to adoption of IAS but is positive and significant jointly with its interaction term (see the F-test outcomes reported below the regression estimates).⁹ In the years after the new standards are introduced the marginal effect of book value is negative and significant (marginal effect = -0.091, t-value= -2.38). The partial effect of earnings (per share) is positive and significant both pre- and post-adoption, but its magnitude increases after the introduction of IFRS (from 0.462 to 1.588). Controlling for intra-country correlation (and heteroskedasticity) of the error terms (column 3 of Table II), before 2005 the marginal effects of both earnings and book value, although not significant individually, are significant jointly with their interaction term (see the F-test results). In the post-adoption period, their marginal effect is significant (positive for earnings and negative for book value). To investigate further, we re-estimate model 1 replacing the closing price of June with that of March as dependent variable. As columns (4), (5) and (6) show, the results are substantially unaltered, except for the post-adoption period: the negative marginal impact of book value

tends to become insignificant, while the significance of the (larger) positive marginal effect of earnings is confirmed.

[Table II]

The panel estimator employed so far accounts for time-invariant effects, such as institutional factors, which are likely to affect the market reaction in each country and may imply a within-country correlation of the error terms. But it assumes that the explanatory variable parameters are common to all countries. To allow for different betas, we run separate regressions still controlling for bank-specific effects. Accordingly, we estimate separate (FEM) regressions for the sample countries with at least 100 observations, namely Denmark, Italy, France, Germany and Britain. The Italian, French, English and German sub-samples confirm our general pattern. Denmark is the only case in which the estimates change sign following the introduction of IFRS, the marginal effect of book value being positive, while that of earnings turns negative.¹⁰ For brevity, these results are not reported in the tables; they are available from the authors on request. To summarize, the country-by-country analysis reveals some heterogeneity of market reactions to the introduction of IFRS (i.e. there are differences in the estimated parameters), but a common pattern does emerge. The earnings interaction term is always positive, and from 2005 on the partial effect of earnings is positive and statistically significant; the book value interaction term is mostly negative and the marginal effect of book value tends to become insignificant in the years following IFRS adoption (except in Denmark). In short, there is evidence that the impact of earnings increased after IFRS were made compulsory. The largest additional effect of earnings was in Germany and Italy, the smallest in Britain. This is consistent with the accepted view that IAS/IFRS require more disclosure than local regulations in the Continental European

countries and that the quality of accounting information under UK-GAAP is already at least as high as IAS/IFRS (e.g. Christensen et al. 2007).

4.2 BALANCED PANEL ESTIMATES

Re-estimating the model only for banks that report data in all seven sample years, both the earnings and the book value coefficients are positive and (mostly) significant prior to IFRS adoption (Table III). The earnings interaction term is always positive, the book value interaction term is always negative. Hence, after 2005, the marginal effect of earnings remains positive and larger than in the pre-adoption period. Moreover, it is always statistically significant. By contrast, the marginal effect of book value is never significant in the post-adoption (still positive but smaller when the June closing price is used – columns 2 and 3 – and negative for the March price – columns 5 and 6).

[Table III]

4.3 SEGMENTATIONS BY CAPITALIZATION, LEGAL FORM, AND RATING

For additional insight into these results, we also run our model (fully interacted with robust SEs) for two separate sub-samples: low- and high-capitalization banks, on the grounds that problems of information asymmetry are more severe for the smaller institutions. The low-capitalization group was defined as banks in the first quartile of the distribution, high-capitalizations as those in the fourth quartile.¹¹ As Table 4 shows, before compulsory introduction of the new standards neither earnings nor book value is significant (individually or jointly) for the low-capitalization sub-sample, while both variables are positive and significant for the high-capitalization group.¹² Moreover, the coefficients are greater for the larger than for the smaller banks. After the new standards became compulsory, the low-capitalization banks show a pattern comparable to that for the

entire sample: earnings tend to have a greater impact, book value to turn negative and statistically insignificant. In the high-capitalization group, though, the coefficients of both earnings and book value increase in absolute value and both have a positive and significant marginal effect on the share price. In other words, until 2005 accounting information does not appear to have been market-relevant for smaller intermediaries; from then on the earnings variable (but not book value) becomes significant, but its positive impact is much smaller for low-capitalization intermediaries than for larger banks. That is, the new accounting rules do appear to have enhanced the quality of accounting information for the banks that are presumed to be more transparent. For the potentially more opaque intermediaries, book value continues to be insignificant, while earnings gains statistical relevance. The institutions that are likely to have more severe problems of informational asymmetry can be seen to be less affected by the new regime.

As a second segmentation, we distinguish between public limited companies and cooperative banks, as the latter are expected to be more opaque due to their particular ownership structure.¹³ Cooperatives, in fact, tend to serve local clients who are also members (owners), with whom they ordinarily establish long-term relationships. Accordingly, cooperative banks may be less motivated to disclose information to the market. When the field is restricted to this category, the results for the entire sample tend to be confirmed, with book value becoming negative and statistically significant after the introduction of IFRS in 2005 (Table 4, column 3).¹⁴ When we consider the sub-sample of banks organized as public limited companies, the increase in the impact of earnings and the decrease in that of book value again emerge, but both variables exert a positive marginal effect subsequent to IFRS introduction (Table IV, column 4). The results obtained for the

March closing price are similar, and so are not presented here, but they are available from the authors upon request.

[Table IV]

Finally, for each year of the analysis, we separate banks that have (at least) a rating (provided by Fitch, and/or Moody, and/or Standard and Poor, and/or Capital Intelligence) from those that do not have a rating.¹⁵ The results obtained when focusing on the rated intermediaries (105 banks, and 406 observations) are similar to those of the high capitalization group (46 banks, and 295 observations), even though the two sub-samples are different. Indeed, both earnings and book value coefficients increase in absolute value, and both exert a positive (and significant when using the March price) marginal effect on the market price after 2005. On the other hand, the results based on non-rated intermediaries tend to confirm the whole sample results: the (positive) earnings coefficient increases, the (positive) book value coefficient becomes lower and not statistically significant after the IFRS introduction. It is worth mentioning that we have also individuated all banks that always have a rating and those that never have a rating over the sample period (by assuming that the rating is present also in 2003 if it is present in all other sample years). Once again, for the always rated group (including 75 banks), the impact of both earnings and book value increases after the IFRS introduction, whereas for the never rated group (96 banks), the earnings coefficient tend to increase, and the book value coefficient to decrease. For the sake of conciseness, these findings are not tabulated, and available on request.

In conclusion, this sub-section results suggest that the data for the more opaque banks may explain the negative (albeit mainly insignificant) marginal effect of book value for the full sample after the adoption of IFRS. Restricting the field to the biggest banks or to those

which should be more transparent, the value relevance of both earnings and book value appear to increase with the switch-over.

4.4. FURTHER ROBUSTNESS CHECKS

As an alternative way of coping with extreme values, we analyzed the full sample excluding the observations lying in the first and last percentile of the distribution of each variable; the results change only slightly. The earnings interaction term is always positive, the book value interaction term always negative. The positive partial effect of earnings is always statistically significant after the accounting changeover while that of book value tends to turn negative and not always significant.

The results are also basically unaffected when the estimations exclude the banks that voluntarily adopted IFRS before 2005. In short, the contrast between the behaviour of the two variables under scrutiny remains: the impact of earnings is heightened with the changeover while book value does not significantly affect the market valuation.¹⁶

5. Concluding remarks

Our intention was to determine whether the mandatory application of IFRS increased the value relevance of accounting information to the prices of bank shares in the European Union. As we expected, the marginal effect (value relevance) of earnings increased for the entire sample. This result is robust to different specifications of the model and to different samples. The largest incremental effect was in Germany and Italy, the smallest in the United Kingdom. This is consistent with the accepted view that IAS/IFRS require more disclosure than local regulations in the Continental European countries and that the quality of

accounting information under UK-GAAP is already at least as high as IAS/IFRS (e.g. Christensen et al. 2007).

For equity book value, our results are less clear-cut. The results for the unbalanced panel indicate that the marginal effect of this variable is negative in the years following the introduction of the new standards, but they are not robust to different specifications. For the balanced panel (banks reporting data in all the sample years), however, the marginal effect of book value is never significant in the post-adoption period.

Overall, there is clear evidence of an increasing impact of earnings on share prices after the IFRS were made compulsory, while that of book value tends to decrease and to be insignificant.

Generally speaking, it may be not surprising that book value is less value-relevant. Empirical work (Collins et al., 1999) suggests that this variable is more important when current earnings do not provide a good proxy for future earnings or when there is a heightened increased danger of bankruptcy or abandonment. However, these conditions do not apply to our sample banks, which realized positive and relatively stable profits over the survey period.

To understand what is driving our results, we sub-divide the sample according to capitalization, legal form, and rating on the hypothesis that small, non rated and cooperative banks are more opaque than their counterparts (i.e. large, rated and limited companies banks). Small banks, for instance, tend to lend to smaller firms and Morgan (1999) maintains that many bank loans “are made to borrowers who were themselves too opaque to borrow in public debt markets. In screening and monitoring these borrowers, banks inevitably know more about their value and risk than they credibly convey to the market. Opaque borrowers cause opaque banks”.

In fact, the pattern differs considerably between small and large banks, and between rated and non-rated banks. For the smaller (and the non-rated) institutions, the impact of earnings increases while that of book value tends to decrease and become statistically insignificant. For the larger (and the rated) banks, the coefficients of both earnings and book value increase after 2005, and both variables exert a positive and significant marginal effect on share prices. These results suggest that the overall result on book value may reflect the weight of less transparent banks, which do not appear to have overcome their problems of opaqueness even after the introduction of the new international accounting standards.

It is also possible, however, that small and non-rated banks are more opaque because they are owned by shareholders operating in local markets. To inquire into this question, we split the sample according to legal form, i.e. into cooperative banks and public limited companies. Cooperative banks have closer and longer-term relationships with their member-customers (owners), and so do not need great transparency. The results for the cooperative banks confirm those for the entire sample. By contrast, for the banks organized as public limited companies, the book value continues to have a positive, though decreasing, impact on the share price even after the adoption of IFRS.

Summing up, according to our evidence, the introduction of the new accounting standards seems to have enhanced the information content of both earnings and book value for more transparent intermediaries. Less transparent entities, by contrast, seem not to have experienced significant increase in the value relevance of book value. Possible explanations for this phenomenon are beyond the scope of this paper, and they may provide interesting avenues for future research.

References

Abellán, D., and J. Aledo (2007), Impact of IFRS on Accounting Returns and Accounting-Based Residual Income Model: Does it Work?, Working paper presented at the EAA Annual Congress, Lisbon 2007.

Arellano, M. (2003), *Panel Data Econometrics*, Oxford University Press, Oxford.

Armstrong, C. S., Barth, M. E., Jagolinzer, A. D. and Riedl, E. J. (2008), Market Reaction to the Adoption of IFRS in Europe. Available at SSRN: <http://ssrn.com/abstract=903429>.

Ashbaugh, H., and P. Olsson (2002), “An exploratory study of the valuation properties of cross-listed firms’ IAS and U.S. GAAP earnings and book values”, *The Accounting Review* **77**, 107--126.

Ball, R. (2006), “International Financial Reporting Standards (IFRS): pros and cons for investors”, *Accounting and Business Research*, June.

Ball, R.; A. Robin, and J.S. Wu (2003), “Incentives versus Standards: Properties of Accounting Income in Four East Asian Countries.” *Journal of Accounting and Economics* **36**, 235--270.

Ball, R.; S.P. Kothari; and A. Robin (2000), “The Effect of International Institutional Factors on Properties of Accounting Earnings”, *Journal of Accounting and Economics* **29**: 1--51.

Banque de France (2005), “*The impact of the transition to IFRS for French banking groups*”, Annual Report of the Commission Bancaire, 145--156.

Barth, M. E., W. H. Beaver, and W. R. Landsman (1996), “Value-relevance of banks’ fair value disclosures under SFAS n°107”, *The Accounting Review*, **71**, 4, 513--537.

Barth, M.E., W.H. Beaver and W.R. Landsman (2001), “The Relevance of the Value Relevance Literature for Accounting Standard Setting: Another View”, *Journal of Accounting and Economics* **31**, 77-104.

Barth, M.E., W.R. Landsman, and M. Lang, (2008), “International Accounting Standards and Accounting Quality”, *Working paper*, University of North Carolina and Stanford University. *The Journal of Accounting Research*, Vol. 46, issue 3, pp. 467-498.

Barth, M.E., W.R. Landsman, M. Lang and Williams C. D. (2006), “Accounting Quality: International Accounting Standards and US GAAP”, Available at SSRN: <http://ssrn.com/abstract=897241>.

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*, Vol. 20, issue 2.

Bernard, Victor L., Robert C. Merton, and Krishna G. Palepu, 1995, Mark-to-market accounting for banks and thrifts: Lessons from the Danish experience, *Journal of Accounting Research* 33: 1-32.

Brambor, T., Clark W.R., and Golder M. (2006), "Understanding Interaction Models: Improving Empirical Analyses", *Political Analysis* 14, 63--82.

Capkun, Vedran, Cazavan-Jeny, Anne, Jeanjean, Thomas and Weiss, Lawrence A., "Earnings Management and Value Relevance During the Mandatory Transition from Local GAAPs to IFRS in Europe" (April 25, 2008). Available at SSRN: <http://ssrn.com/abstract=1125716>.

Christensen H. B., Lee E., Walker M., (2007), "Do IFRS/UK-GAAP Reconciliations Convey New Informations?", *Working Paper*, University of Manchester and Manchester Business School.

Collins, D., Pincus M., Hong Xie, (1999), "Equity Valuation and Negative Earnings: The Role of Book Value of Equity," *The Accounting Review* 1, 29--62.

Daske, Holger, Hail, Luzi, Leuz, Christian and Verdi, Rodrigo S. (2007), "Mandatory IFRS Reporting Around the World: Early Evidence on the Economic Consequences", ECGI - Finance Working Paper No. 198/2008 Available at SSRN: <http://ssrn.com/abstract=1024240>.

Dumontier P. and R. Labelle (1998), "Accounting earnings and firm valuation: the French case", *European Accounting Review* 7, 2, 163--183.

Eccher, E., & Healy, P. M. (2000). *The role of international accounting standards in transitional economies: A study of the People's Republic of China. Working paper*, MIT Sloan School of Management and Harvard Business School.

Eccher, A., K. Ramesh, and S. R. Thiagarajan (1996), "Fair value disclosures by bank holding companies", *Journal of Accounting and Economics* 22, 1-3, 79--117.

European Community (2000), *EU Statement on Lisbon Summit*, 23-24 March, EC, Brussels.

Gjerde, Oystein, Knivsflå, Kjell Henry and Sættem, Frode (2008), "The Value-Relevance of Adopting IFRS: Evidence from 145 NGAAP Restatements". Available at SSRN: <http://ssrn.com/abstract=966080>.

Harris, M.S. and K. A. Muller III (1999), "The market valuation of IAS versus US-GAAP accounting measures using Form 20-F reconciliations", *Journal of Accounting and Economics* 26, 285--312.

Holthausen, R.W. and R. L. Watts (2001), "The relevance of the value-relevance literature for financial accounting standard setting", *Journal of Accounting and Economics* 31, 3--75.

Horton, J. and G. Serafeim (2007), "Market Reaction & Valuation of IFRS Reconciliation Adjustments: First Evidence from the UK", SSRN.

Hu, D. (2002), "The usefulness of financial statements under Chinese-GAAP vs. IAS: Evidence from the Shanghai Stock Exchange in PR". Available at SSRN: <http://ssrn.com/abstract=314001> or DOI: [10.2139/ssrn.314001](https://doi.org/10.2139/ssrn.314001).

Lee, C. M. C. (1999) "Accounting-Based Valuation: Impact on Business Practices and Research", *Accounting Horizons*, 13 (4) 413-425.

Leuz, C. (2003), "IAS versus US GAAP: Information Asymmetry-Based Evidence from Germany's New Market", *Journal of Accounting Research* 41, 3, 445--472.

Lo, K. and Lys, T. (2000) "The Ohlson Model: Contribution to Valuation Theory, Limitations, and Empirical Applications", *Journal of Accounting, Auditing and Finance*, 15 (3) 337-367.

Morais A. I. and J. J. D. Curto (2007), "IASB Standards adoption: value relevance and the influence of country-specific factors", Annual Conference of the European Accounting Association.

Morgan, D. P. (1999). Whether and Why Banks Are Opaque, 36th Annual Conference on Bank Structure and Competition, Federal Reserve Bank of Chicago.

Morgan, D. P., (2002), "Rating banks: Risk and uncertainty in an opaque industry", *American Economic Review* 92, 4, 874--888.

Naceur S. B., and Goaid M. (2004), The value relevance of accounting and financial information: panel data evidence, *Applied Financial Economics* 14, 1219--1224.

Negash M. (2006), "Liberalization and the value relevance of accrual accounting information: evidence from the Johannesburg Securities Exchange", *Working Paper* University of the Witwatersrand, School of Accountancy, Johannesburg. Available at <http://web.wits.ac.za/Academic/CLM/Accountancy/Research/>.

Nelson, K. (1996), "Fair value accounting for commercial banks: An empirical analysis of SFAS No. 107", *The Accounting Review* 71, 161--182.

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

Park, M.S., T. Park and B. T. Ro (1999), "Fair Value Disclosures for Investment Securities and Bank Equity: Evidence from SFAS No. 115", *Journal of Accounting, Auditing and Finance* 14, 3, 347--370.

Prather-Kinsey, J.; Jermakowicz, Eva K. and Vongphanith, Thierry (2008): “Capital Market Consequences of European Firms’ Mandatory Adoption of IFRS” Working paper presented at the EAA Annual Congress, Rotterdam 2008 and at the AAA Annual Meeting 2008, California.

Sellhorn and Skaife (2008): “The Cross-Country Comparability Of IFRS Earnings And Book Values: Evidence From Accounting-Based Valuation Models”, Working paper presented at the EAA Annual Congress, Rotterdam 2008.

Stolowy H., Ding Y., (2003), “Regulatory Flexibility and management opportunism in the choice of alternative accounting standards: an illustration based on large French groups”, *The International Journal of Accounting* **38**, 195--213.

Swartz, G. and Negash, M. (2006), “Valuation of Shares Using the Ohlson (1995) Model: Evidence from the JSE Securities Exchange South Africa”, *South Africa Journal of Accounting Research* **20**, 1.

Worthington A. C., and West T. (2004), “Australian Evidence Concerning the Information Content of Economic Value-Added”, *Australian Journal of Management*, **29**, 2, 201--224.

Wu, S.H., Koo, M. and T. Kao (2005), “Comparing the Value-Relevance of Accounting Information in China: Standards and Factors Effects”, *Working Paper*.

¹ Holthausen and Watts (2001) note that accounting values have multiple uses beyond equity investment. However, Barth et al. (2001) reply that the possible contracting uses of financial statements in no way diminish the importance of value relevance research.

² The International Accounting Standards (IAS) originally issued by the International Accounting Standards Committee (IASC) have evolved into the International Financial Reporting Standards (IFRS) issued by its successor body, the International Accounting Standards Board (IASB). IFRS comprise the standards issued by the IASB and those issued by the IASC, some of which have been amended by the IASB. IFRS have emerged as a leading alternative to US GAAP for global reporting. In 2005 the US Securities and Exchange Commission (SEC) laid down a roadmap to permit cross-listing on US exchanges without requiring firms to reconcile IFRS with US GAAP.

³ The sample period for Barth et al. (2006) predates the standards issued by IASB. Accordingly, they refer to use of IAS, not IFRS, by their sample of firms.

⁴ In Arellano's words, it becomes possible "to control for possibly correlated, time-invariant heterogeneity without observing it" (2003, p.8). Previous research based on panel models and addressing the market impact of accounting information is scant and does not bear on Europe (see Naceur and Goaid, 2004, Negash, 2006, Worthington and West, 2004).

⁵ The fixed effects estimator is used when the unobserved effects are assumed (or found, using the Hausman test) to be correlated with the explanatory variables. Since this correlation is left unrestricted, an OLS method would produce an inconsistent estimator. So the data must be transformed to eliminate the unobserved effects. The transformed data do so by subtracting the time mean (within-panel) for all observations. In the panel data literature, the OLS estimator on data shorn of the time mean is generally referred to as the fixed-effects or least squares dummy variable estimator (LSDV). The latter term reflects the fact that it is numerically the same as the estimator that would be obtained by running an OLS regression including N dummies, one for each individual.

⁶ The fixed effects account for all time-invariant cross-sectional effects may then be observed or unobserved. The internal data transformation eliminates any time-invariant regressors, such as country-fixed effects. Similarly, when a LSDV estimator is used, the bank-fixed effects subsume all other time-invariant effects.

⁷ Leuz (2003) deals with Germany only, so he can hold that his work is not affected by these problems. Barth et al. (2006) regress the share price on country- and industry-fixed effects and then regress the residuals from this regression on book value of equity per share and net earnings per share.

⁸ When the unbalanced panel is converted into the balanced one, the number of banks falls from 221 to 81 and observations from 1201 to 567.

⁹ A discrepancy between individual and joint significance, which will recur in other cases, is not unusual in multiplicative interaction models and can in fact be interpreted as a signal of multicollinearity (see Wooldridge, 2003 and Brambor et al., 2006) induced by the inclusion of interaction terms. As Brambor et al. (2006) point out, however, “even if there really is high multicollinearity and this leads to large standard errors on the model parameters, it is important to remember that these standard errors are never in any sense ‘too’ large - they are always the ‘correct’ standard errors. High multicollinearity simply means that there is not enough information in the data to estimate the model parameters accurately and the standard errors rightfully reflect this”.

¹⁰ According to Bernard, Merton and Palepu (1995) banks in Denmark report accounting information based on market values to a higher degree than other countries in Europe. Therefore, the different impact of mandatory IFRS may be due to this reason.

¹¹ Actually, the figure used in determining the quartiles was the average market capitalization of each bank over the sample period.

¹² While the earnings parameter is not significant in itself, the F-test for joint significance with its interaction term strongly rejects the null hypothesis of irrelevant regressors. See note 14 for further discussion on this point.

¹³ This segmentation differs from the former because some cooperative banks are large (e.g. Crédit-Agricole).

¹⁴ The overall F-test is only marginally significant (at 10%), probably because of the smallness of the sample. But it regains significance at 1% when the dependent variable is the closing price in March.

¹⁵ In 2000 Bankscope provides the Thomson BankWatch ratings as well. In the same database, information is missing on Moody and Standard and Poor ratings for the year 2003.

¹⁶ Besides, when we limited our estimation sample to the 33 banks (175 observations year-observations) that used IFRS before 2005, once again, we found an increasing value relevance of the earnings per share and a

decreasing value relevance of book value per share, only the marginal impact of earnings being statistically significant after 2005.

Table II: Unbalanced Panel Estimates

	<i>Dep. Variable: Closing price of June</i>			<i>Dep. Variable: Closing price of March</i>		
	FEM	fully interacted FEM	fully interacted FEM with robust SEs	FEM	fully interacted FEM	fully interacted FEM with robust SEs
	(1)	(2)	(3)	(4)	(5)	(6)
Earnings per Share (EPS)	0.770 <i>3.54***</i>	0.462 <i>2.04**</i>	0.462 <i>1.31</i>	1.097 <i>5.06***</i>	0.812 <i>3.62***</i>	0.812 <i>1.72</i>
Book Value per Share (BPS)	-0.027 <i>-0.91</i>	0.006 <i>0.19</i>	0.006 <i>0.10</i>	-0.001 <i>-0.03</i>	0.033 <i>1.09</i>	0.033 <i>0.53</i>
Post IAS		8.147 <i>3.78***</i>	8.147 <i>3.19***</i>		11.034 <i>5.16***</i>	11.034 <i>2.91***</i>
Interaction_EPS		1.126 <i>3.16***</i>	1.126 <i>1.51</i>		1.011 <i>2.85***</i>	1.011 <i>1.57</i>
Interaction_BPS		-0.097 <i>-2.91***</i>	-0.097 <i>-1.39</i>		-0.095 <i>-2.88***</i>	-0.095 <i>-1.48</i>
Trend	4.928 <i>15.23***</i>	3.240 <i>6.49***</i>	3.240 <i>1.30</i>	4.843 <i>15.02***</i>	2.724 <i>5.50***</i>	2.724 <i>1.23</i>
Cons	17.983 <i>9.60***</i>	21.992 <i>10.47***</i>	21.992 <i>2.03**</i>	13.811 <i>7.39***</i>	18.668 <i>8.95***</i>	18.668 <i>1.89*</i>
Number of observations	1201	1201	1201	1201	1201	1201
Number of banks	221	221	221	221	221	221
F test	86.61***	49.13***	11.98***	97.61***	56.72***	68***
F test (EPS and its interaction)		9.66***	4.22**		14.72***	8.55***
F test (BPS and its interaction)		4.45**	3.50*		4.19**	2.25
EPS Marg. Eff. in the post adoption period		1.588 <i>4.36***</i>	1.588 <i>2.50***</i>		1.823 <i>5.04***</i>	1.823 <i>3.87***</i>
BPS Marg. Eff. in the post adoption period		-0.091 <i>-2.38**</i>	-0.091 <i>-2.63***</i>		-0.062 <i>-1.63</i>	-0.062 <i>-1.88*</i>

Notes: a) t-values are reported in italics below the coefficients estimates; b) (*), (**), (***) denote statistical significance at the 10%, 5% and 1% level, respectively; c) Standard errors, not reported, are adjusted for clustering on countries in columns 3 and 6; d) Post IAS is a dummy coded one in the IAS post adoption period, zero otherwise; e) the variable Interaction_BPS (Interaction_EPS) is the product of the post IAS dummy by the BPS (EPS) regressor.

Table III: Balanced Panel Estimates

	<i>Dep. Variable: Closing price of June</i>			<i>Dep. Variable: Closing price of March</i>		
	FEM	fully interacted FEM	fully interacted FEM with robust SEs	FEM	fully interacted FEM	fully interacted FEM with robust SEs
	(1)	(2)	(3)	(4)	(5)	(6)
Earnings per Share (EPS)	3.823 <i>5.35***</i>	3.099 <i>3.96***</i>	3.099 <i>1.59</i>	4.349 <i>6.24***</i>	3.528 <i>4.64***</i>	3.528 <i>1.88*</i>
Book Value per Share (BPS)	0.390 <i>5.35**</i>	0.409 <i>2.36**</i>	0.409 <i>1.21</i>	0.160 <i>1.00</i>	0.170 <i>1.01</i>	0.170 <i>0.51</i>
Post IAS		3.505 <i>1.11</i>	3.505 <i>1.18</i>		7.276 <i>2.37**</i>	7.276 <i>1.62</i>
Interaction_EPS		2.399 <i>1.69*</i>	2.399 <i>1.07</i>		2.133 <i>1.55</i>	2.133 <i>1.00</i>
Interaction_BPS		-0.221 <i>-1.85*</i>	-0.221 <i>-1.54</i>		-0.198 <i>-1.70*</i>	-0.198 <i>-1.44</i>
Trend	4.314 <i>10.24***</i>	3.465 <i>5.22***</i>	3.465 <i>1.31</i>	4.402 <i>10.71***</i>	2.933 <i>4.56***</i>	2.933 <i>1.27</i>
Cons	4.302 <i>1.69*</i>	7.213 <i>2.32**</i>	7.213 <i>0.43</i>	5.286 <i>2.13**</i>	9.956 <i>3.30***</i>	9.956 <i>0.64</i>
Number of observations	567	567	567	567	567	567
Number of banks	81	81	81	81	81	81
F test	69.37***	49.13***	27.85***	71.60***	38.20***	24.57***
F test (EPS and its interaction)		13.81***	4.22**		17.21***	4.40**
F test (BPS and its interaction)		4.18**	2.64		1.84	1.34
EPS Marg. Eff. in the post adoption period		5.499 <i>4.13***</i>	5.499 <i>2.82***</i>		5.661 <i>4.38***</i>	5.661 <i>2.85***</i>
BPS Marg. Eff. in the post adoption period		0.188 <i>0.93</i>	0.188 <i>0.47</i>		-0.027 <i>-0.14</i>	-0.027 <i>-0.07</i>

Notes: a) t-values are reported in italics below the coefficients estimates; b) (*), (**), (***) denote statistical significance at the 10%, 5% and 1% level, respectively; b) Standard errors, not reported, are adjusted for clustering on countries in columns 3 and 6; c) Post IAS is a dummy coded one in the IAS post adoption period, zero otherwise; d) the variable Interaction_BPS (Interaction_EPS) is the product of the post IAS dummy by the BPS (EPS) regressor.

Table IV: Segmentations according to capitalization and legal form

	<i>Dep. Variable: Closing price of June</i>			
	<u>LOW CAP</u>	<u>HIGH CAP</u>	<u>COOP</u>	<u>NON-COOP</u>
	(1)	(2)	(3)	(4)
Earnings per Share (EPS)	0.422	1.460	-0.006	0.689
	<i>0.73</i>	<i>1.49</i>	<i>-0.05</i>	<i>1.23</i>
Book Value per Share (BPS)	-0.026	0.811	0.0149	0.686
	<i>-0.47</i>	<i>5.08***</i>	<i>0.83</i>	<i>4.82***</i>
Post IAS	18.088	-0.560	7.436	6.582
	<i>2.05*</i>	<i>-0.42</i>	<i>1.05</i>	<i>2.72**</i>
Interaction_EPS	0.409	1.235	1.076	1.818
	<i>1.14</i>	<i>1.29</i>	<i>10.17***</i>	<i>2.32**</i>
Interaction_BPS	-0.065	0.129	-0.068	-0.203
	<i>-1.65</i>	<i>1.55</i>	<i>-6.08**</i>	<i>-2.59**</i>
Trend	8.963	0.308	-0.781	3.335
	<i>1.52</i>	<i>1.08</i>	<i>-0.36</i>	<i>1.30</i>
Cons	32.385	5.590	58.791	1.921
	<i>1.48</i>	<i>1.88*</i>	<i>12.75***</i>	<i>0.14</i>
Number of observations	301	295	130	1071
Number of banks	61	46	25	196
F test	2377.6***	45.64***	2.46*	10.33***
F test (EPS and its interaction)	3.14	8.89***	3418.86***	11.45***
F test (BPS and its interaction)	2.42	15.49***	1400.54***	12.92***
EPS Marg. Eff. in the post adoption period	0.831	2.695	1.069	2.507
	<i>2.04*</i>	<i>4.22***</i>	<i>35.98***</i>	<i>4.61***</i>
BPS Marg. Eff. in the post adoption period	-0.091	0.940	-0.053	0.484
	<i>-1.84</i>	<i>5.55***</i>	<i>-7.63***</i>	<i>3.28***</i>

Notes: a) t-values are reported in italics below the coefficients estimates; b) (*), (**), (***) denote statistical significance at the 10%, 5% and 1% level, respectively; b) Standard errors, not reported, are adjusted for clustering on countries in all columns; c) Post IAS is a dummy coded one in the IAS post adoption period, zero otherwise; d) the variable Interaction_BPS (Interaction_EPS) is the product of the post IAS dummy by the BPS (EPS) regressor.