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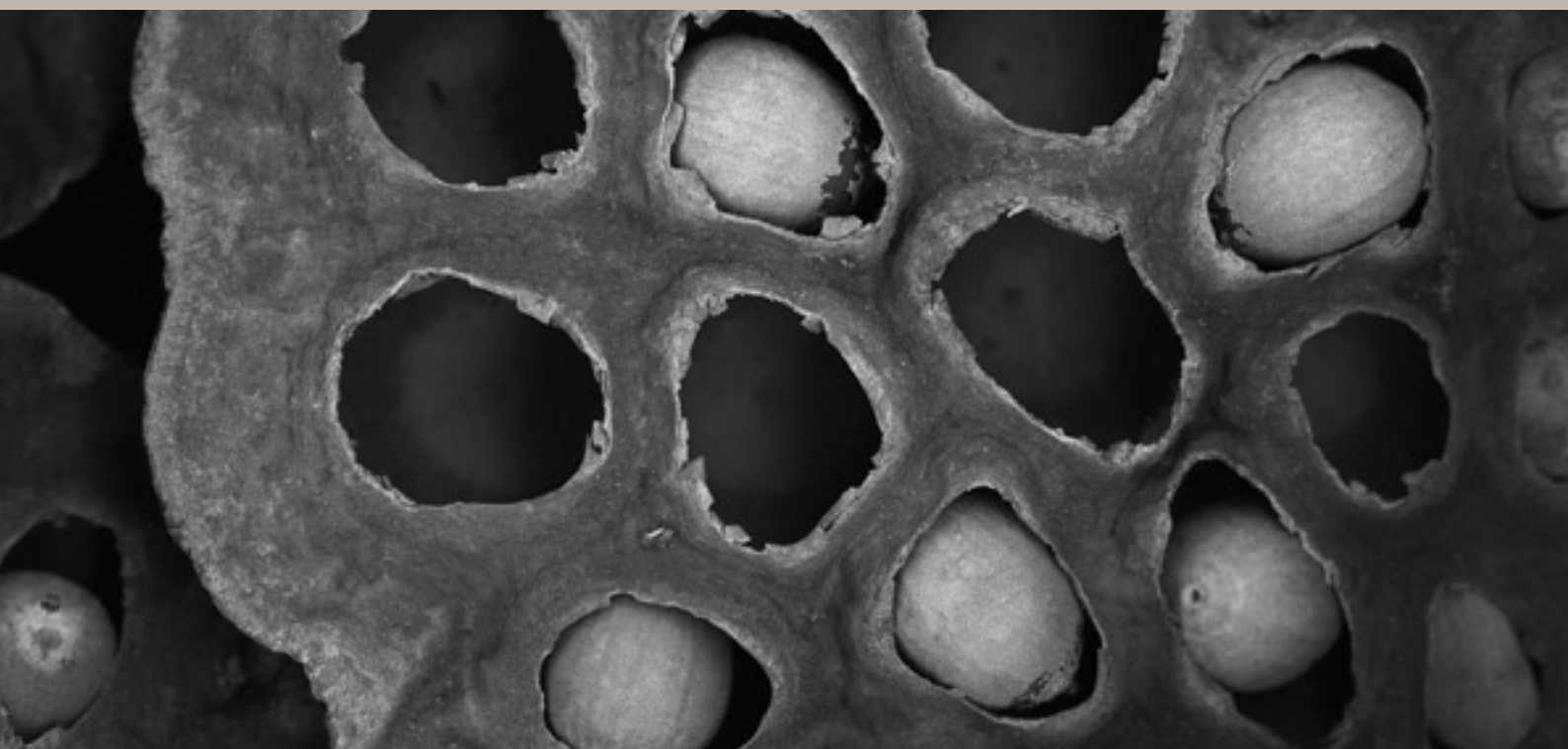
Mandating IFRS: its Impact on the Cost of Equity Capital in Europe



Mandating IFRS: its Impact on the Cost of Equity Capital in Europe

by

Dr. Edward Lee,
Manchester Business School, University of Manchester

Professor Martin Walker,
Manchester Business School, University of Manchester

Dr. Hans B. Christensen,
Graduate School of Business, University of Chicago

Certified Accountants Educational Trust (London)

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Executive summary

BACKGROUND

The mandatory adoption of International Financial Reporting Standards (IFRS) across the European Economic Area (EEA) commenced in 2005. Empirical evidence of the economic consequences of this 'big bang' informs a continuing debate about the pros and cons of international accounting harmonisation, among both academics and practitioners. In this report, we analyse the impact of mandatory IFRS adoption on the cost of equity capital. This is an essential metric for the decision making of professional investors and corporate financial managers alike. From a regulatory point of view, a key function of the corporate security market is to supply capital to companies as cheaply as possible. In fact, proponents have often advocated IFRS on this basis. For instance, the former SEC chairman, Arthur Levitt, once stated that 'The truth is, high quality standards lower the cost of capital' (Levitt 1998).

COMPETING THEORIES

There are currently two main schools of thought in the debate on mandatory accounting harmonisation. On the one hand, proponents suggest that accounting standards determine accounting quality. Based on this argument, mandatory regulatory intervention provides two key benefits. First, by adopting a common accounting 'language' the international comparability of financial statements should improve. This should facilitate cross-border capital flows and therefore reduce the cost of capital. Second, imposing the disclosure requirements of IFRS should improve the information disclosure quality of companies domiciled in countries where lower standards of disclosure are required by national generally accepted accounting principles (GAAP). By reducing information asymmetry, investors are able to monitor managerial performance better and therefore demand a lower risk premium. If this supposition is correct, then we should expect to see the greatest impact of IFRS among smaller European countries with lower quality accounting and disclosure standards, such as Greece and Portugal.

The alternative argument is that preparers' incentives and institutional context affect the quality of financial reporting more than accounting standards. Although IFRS adoption is mandatory across Europe, there are significant differences between countries in the importance of the stock market as a source of finance. Moreover, even within individual countries, companies differ in the extent to which they are reliant on external funding and in their costs of compliance with financial disclosure requirements. Despite mandatory adoption, companies with little to gain from IFRS may choose to exploit any embedded flexibility in IFRS implementation and 'box-tick' their way through the process with a minimum degree of compliance. On the other hand, some companies with relatively high reliance on the stock market as a source of finance, and relatively low costs of complying with IFRS disclosure requirements, may choose to comply enthusiastically with IFRS. Low-incentive companies are more likely to exist in countries where equity market financing is less important and where domestic accounting standards traditionally demand lower-quality disclosure. Conversely, high-incentive companies are more likely to be found in countries where equity market financing is more important and where domestic accounting standards traditionally demand higher-quality disclosure. If this is the case, then we would expect to see the greatest impact of IFRS adoption among European countries where equity financing dominates, along with high-quality national GAAP.

KEY FINDINGS

In this report we classify 17 European countries into those with high or low financial reporting incentives and enforcement, based on five key institutional characteristic indicators:

- outsider rights
- the importance of the equity market
- ownership concentration
- disclosure quality, and
- earnings management.

For the sample period of 1995 to 2006, we have calculated company-specific cost of equity capital derived from the consensus forecasts of sell-side analysts and market prices. Between the extreme groups of countries, we compare changes in corporate cost of capital from before the enactment of IFRS until after this had been introduced. Based on the predictions from the two aforementioned schools of thought, we would expect the impact to be concentrated towards one extreme. The pro-standard argument predicts there will be cost of capital reduction in countries with low financial reporting incentives and enforcement. The pro-incentive argument, on the other hand, predicts cost of capital reduction in countries with high financial reporting incentives and enforcement. If we observe similar patterns between the two extreme groups of countries after 2005, then it will be difficult to draw the inference that our observed changes are brought about by IFRS as opposed to other confounding reasons beyond the scope of IFRS, such as business cycles or globalisation.

Our findings are as follows. In countries where all five institutional characteristic indicators are below the pan-European median, ie those that have low financial reporting incentives and enforcement, we find limited and mixed evidence of a cost of equity capital reduction from the pre- to post-IFRS periods. In stark contrast, in the country where all five institutional characteristic indicators are above the pan-European median, ie the UK, we observe a significant reduction in the cost of equity capital following the implementation of IFRS. These results are robust when tested against different valuation models from which cost of equity capital is derived, and controls for company-specific characteristics such as size, growth, leverage and ownership, as well as different test specifications.

IMPLICATION

The empirical evidence from our analyses provides little support for the pro-standard school of thought. If mandatory regulatory intervention is effective, then imposing higher quality accounting standards should produce greater changes for companies in countries with low financial reporting incentives and enforcement. By the same argument, companies that are based in the UK, where previous domestic GAAP was considered to be roughly equivalent in disclosure quality to IFRS, the change should have limited impact. Our finding that UK companies enjoy a greater cost of equity capital reduction following IFRS than other European countries lends support to the pro-incentive school of thought. In countries where equity-based financing dominates, and corporate disclosure quality is already high, the implementation of IFRS appears to be more effective. This outcome has important implications for the regulators and auditors, as well as end-users of financial statements. In other words, imposing on debt-based capital markets the accounting standards developed for equity-based markets may not be effective, at least in the short-run. Our overall inference is broadly consistent with those of other academic studies on this topic. Accounting standards that are designed for equity-based capital markets bring the most benefits to stock-market-based economies.

Given our evidence, to reinstate the pro-standard school of thought one would have to assume that economic consequence indicators used in studies such as ours do not measure the true benefit of IFRS. Alternatively, one could also argue that our sample period limits us to reliance on only short-run evidence of the impact of mandatory IFRS adoption over the transition or initial 'settling down' period. Perhaps the impact on bank-based economies shows up later than in their stock-market-based counterparts. Thus, the benefit of IFRS for smaller countries with lower financial reporting incentives and enforcement may only be revealed over a longer period. Nonetheless, we believe our short-run evidence is useful in the sense that it documents the original impact from an external shock to the existing system, without the influence of subsequent amendments and reforms to enhance incentives and enforcements, which may crop up in longer-run studies.

1. Introduction

In this report we analyse the cost of equity capital impact in Europe since the mandatory IFRS adoption in 2005. Cost of equity capital is important to corporate finance and investment decisions and proponents of IFRS predict that companies will benefit from its reduction, following adoption. Nevertheless, opinions among academics and practitioners worldwide remain divided with regard to the potential economic consequences of this 'big bang' exercise. This debate awaits the verdict delivered by empirical evidence such as that documented in this report on the outcome of mandatory IFRS adoption.

1.1 COMPETING THEORIES

Justification of mandatory regulatory intervention stems from the assumption that accounting standards determine accounting and disclosure quality. It is believed that the cost of equity capital can be reduced through two pathways. First, international comparability of financial statements should improve following the adoption of a common accounting 'language'. This attracts capital from foreign investors and reduces the barriers to cross-border capital flows. Second, corporate disclosure should improve when higher-quality accounting standards replace lower-quality domestic GAAP. This enables outside investors to monitor managerial performance better because information asymmetry is reduced. The possibility that improved accounting standards should lower the cost of capital is illustrated by the statement from the former SEC chairman Arthur Levitt: 'The truth is, high quality standards lower the cost of capital' (Levitt 1998). On the basis of these pro-standard arguments, the impact of mandatory IFRS adoption should be more pronounced among companies in smaller countries where domestic GAAP requires lower-quality disclosure. For these companies the switch to IFRS is a far more substantial leap than for their counterparts in the UK.

Nonetheless, an opposite prediction can be made from the argument that preparers' incentives are more relevant to the quality of financial communication than accounting standards. IFRS is essentially a set of standards developed for stock-market-based economies such as the US and the UK. Mandating IFRS for debt-oriented economies across Europe may not result in the effects their proponents promised. Although improved disclosure and international harmonisation could attract external equity capital, this may not necessarily appeal to such companies. Managers in these companies may perceive the sudden increase in demand for improved accounting and disclosure as a cost as opposed to a benefit.

Besides reducing information asymmetry between the company and its shareholders, accounting information also serves other purposes, such as its use when contracting for debt and determining executive compensation. Contracting practices are likely to vary systematically between countries, owing to the separate development of each country's financial markets and ownership structures. The difference between debt-based European economies (especially those with traditionally lower accounting and disclosure quality) and larger equity-based economies such as the UK is likely to be substantial in this respect. The annual report is often the key source of financial data used to set contracts. Companies in debt-based economies may prioritise maintenance of contracting over improving disclosure in the short-run, following the mandatory adoption of IFRS. Therefore, given the embedded flexibility of IFRS implementation, these companies may 'box-tick' their way through with a minimal degree of compliance and thereby forgo the opportunity to improve information available to shareholders. This idea is illustrated in the study by Ball et al. (2003), which shows that companies in East Asian countries where common-law-based accounting standards are adopted do not necessarily provide the higher-quality disclosure that would be expected.

On the other hand, companies in countries with equity-based financing and higher-quality disclosure already use common-law-based accounting and therefore are more likely to accept and adapt better to the newly imposed standards. In particular, firms with a strong demand for more capital may be especially willing to seize the opportunity from the switch to attract more funds. This possibility is illustrated in Christensen et al. (2007), which shows that in the years preceding 2005, UK companies with the greatest willingness to adopt IFRS received a more positive stock market reaction to public announcements of mandatory IFRS adoption. Based on this pro-incentives argument, the impact of mandatory IFRS adoption should be higher among companies in equity-based markets, owing to their greater incentives to comply.

Existing studies of the economic consequences of IFRS adoption fall into two general categories. The first group analyse voluntary adopters (eg Cuijpers and Buijink 2005; Daske 2006; Leuz 2003; Leuz and Verrecchia 2000) and their results are usually confounded with the effect of incentives, as many of them acknowledge. The act of switching from lower-quality domestic GAAP to higher-quality IFRS or US-GAAP, even before regulatory mandate, implies the companies' intention to acquire external equity capital and therefore a commitment to higher disclosure quality. Although some of these studies document benefits following voluntary IFRS adoption, it is not appropriate to assume that the results can be generalised to apply to mandatory adoption situations. The second group of more recent studies are based on mandatory settings (eg, Christensen et al. 2008; Daske et al. 2007a, 2007b). These studies so far lend support to the pro-incentive school of thought. For instance, Christensen et al. (2008) show in a German sample that accounting quality improvements following IFRS adoption occur mainly among voluntary adopters and not their mandated counterparts. The international studies by Daske et al. (2007a, 2007b) show that the IFRS impact occurs mainly among companies domiciled in countries where the institutional environment leads to higher financial reporting incentives and enforcement.

1.2 ESTIMATING THE COST OF EQUITY CAPITAL

Despite being widely used by practitioners (Bruner et al. 1998; Graham and Harvey 2001) to estimate cost of equity capital, the Capital Asset Pricing Model (CAPM) does not explain expected returns well (Fama and French 1992; Strong and Xu 1997). The search for other variants of factor-based asset pricing models to replace CAPM (eg Fama and French 1996) has yielded limited success (Daniel and Titman 1997; Daniel et al. 2001; Fama and French 1997; Lee et al. 2007). The academic literature now recognises serious and probably insurmountable problems in estimating the cost of equity capital from historical realised returns with factor-based asset pricing models. These problems include model specification, error in factor loading estimation, and imprecise estimates of factor risk premiums (Fama and French 1997). The need for a long series of historical information to increase statistical power also reduces the ability of the estimates to reflect recent changes in a firm's risk profile.

As an alternative, a large number of recent studies of cost of equity capital derive this measure through accounting-based equity valuation models using sell-side analyst consensus earnings forecasts and market price (eg Botosan and Plumlee 2005; Claus and Thomas 2001; Easton 2004; Gebhardt et al. 2001; Gode and Mohanram 2003). This approach essentially extracts the expected return that the market implicitly applies to discount the future cash flows of the company, which is forward looking and more directly reflects the market's current perception of a company's risk. Among a variety of accounting-based valuation models, Chen et al. (2004) show that the Abnormal Earnings Growth (AEG) model and Price-Earnings-Growth (PEG) model are the ones least affected by deviations from the clean surplus relation. Botosan and Plumlee (2005) and Easton and Monahan (2005) compare various models and reveal that the PEG model dominates all other alternatives in relation to risk proxies.

2. Methodology and sample

2.1 MEASURING THE COST OF EQUITY CAPITAL

The aim of our study was to evaluate changes in the cost of equity capital following mandatory IFRS adoption in Europe, and we selected the PEG and AEG models for our purpose. Because the literature shows that there is no single 'wonder model' that could completely fulfil all the criteria for cost of equity capital estimates, as researchers we had to make a choice based on the application and sample. On the basis of the discussion in section 1.2 above, the PEG and AEG are most suitable for our analyses because deviations from the clean-surplus assumption[1] are common in our sampled countries and results from 'horse race' studies also indicate that PEG estimates correlate well with risk proxies.

As described by Easton (2004) the PEG model is a special case of the AEG model of Ohlson and Juettner-Nauroth (2005). Under the AEG model, the implied cost of equity (KE) of a company is defined as shown in Box 2.1.

By imposing two assumptions: $dps_{t+1} = 0$ and $\gamma = 1$ (no abnormal earnings growth beyond the forecast horizon), Easton (2004) suggests that the cost of equity capital of a company can be inferred from the PEG model as shown in Box 2.2.

Both the AEG and PEG models require eps_{t+1} and eps_{t+2} to be positive and eps_{t+1} to be smaller than eps_{t+2}, which imposes sample restrictions on our study. Although these assumptions may bias the sample towards more stable

Box 2.1

(1) $$KE_t = A + \sqrt{A^2 + \left(\frac{eps_{t+1}}{P_t}\right)\left[\left(\frac{eps_{t+2} - eps_{t+1}}{eps_{t+1}}\right) - (\gamma - 1)\right]}$$

(2) $$A = \frac{1}{2}\left[(\gamma - 1) + \left(\frac{dps_{t+1}}{P_t}\right)\right]$$

where (for time period t):

- eps_{t+1} and eps_{t+2} are analyst consensus forecast of earnings per share for one and two years ahead
- dps_{t+1} is the analyst consensus forecast of dividend per share for one year ahead
- P_t is the current price
- $(\gamma - 1)$ is the perpetual growth rate at which the short-term growth decays asymptotically to.

Box 2.2

(3) $$KE_t = \sqrt{\frac{(eps_{t+2} - eps_{t+1})}{P_t}}$$

1. Reporting income items as part of equity instead of in the income statement is known as dirty-surplus accounting and an equity statement that has no income other than net income from the income statement is known as clean-surplus accounting (Penman 2007). The Residual Income Valuation (RIV) model assumes clean-surplus. Chen et al. (2004) show that PEG and AEG models outperform the RIV model in estimating implied cost of equity capital for countries where clean-surplus assumptions do not hold.

and less risky companies, we have no reason to believe that these sample restrictions could materially affect our cost of capital comparisons over time or between different parts of Europe. We followed Chen et al. (2004) and assumed the value of KE_t to be equivalent to A in equation 1 (see Box 2.1) if eps_{t+1} is greater than eps_{t+2}. Owing to this assumption, the number of observations in analyses based on the AEG model was greater than those under the PEG model. Following Gebhardt et al. (2001), Gode and Mohanram (2003), and Lee et al. (2004) we estimated the implied cost of equity capital at the end of June each year.[2] We winsorised[3] the top and bottom 1% in our sample to avoid the influence of outliers.

To extract the portion of the implied cost of equity capital that is not affected by changes in several company-specific characteristics assumed to be correlated with cost of equity capital over the same period, we estimated the adjusted cost of equity capital as the residual of the regression shown in Box 2.3.

The six-month gap between implied cost of capital estimation (measured at end of June year t+1) and control variables (from fiscal year-end t) ensured sufficient time for the financial statement information to reach investors and be reflected in the stock price.[5] In the existing literature, size and book-to-market are widely applied risk proxies to explain cross-sectional variations of expected returns (Fama and French 1996; Lyon et al. 1999). Leverage is commonly used in tests of implied cost of equity estimates (eg Botosan and Plumlee 2005; Easton and Monahan 2005; Lee et al. 2004).

Since the PEG and AEG models derive cost of equity capital from expected growth, we include sales growth and R&D expense. Sales growth measures the growth from the demand side. Existing studies also show that sales growth correlates with cross-sectional variations in stock returns and may be a proxy for distress risk (eg Fama and French 1996; Lakonishok et al. 1994). R&D expense measures growth in intangible assets. Chan et al. (2001) suggest that the risk characteristic of R&D investments differs from that

Box 2.3

(4)

$$KE_{it+1} = \alpha_0 + \alpha_1 \ln MV£_{it} + \alpha_2 BM_{it} + \alpha_3 DE_{it} + \alpha_4 SG_{it} + \alpha_5 RDS_{it} + \alpha_6 OWN_{it} + \sum_{k=1}^{12} \alpha_k Y_{kt} + \lambda_{it} + \varepsilon_{it}$$

where (for company i and year t):

- KE_{it+1} is the implied cost of equity capital estimated from either the PEG or AEG model
- $\ln MV£_{it}$ is the log of market value denominated in pounds sterling
- BM_{it} is the book-to-market ratio
- DE_{it} is the debt-to-equity ratio
- SG_{it} is the sales growth
- RDS_{it} is the R&D expense[4]
- OWN_{it} is percentage of closely held shares of company
- Y_{kt} are year dummies
- λ_{it} is firm fixed-effect
- ε_{it} is residual.

2. This enables a six-month publication gap between fiscal year-end and cost of equity capital estimation (we only sampled December year-end companies) to allow financial statement information of the previous fiscal year to reach investors in the market.

3. Winsorisation sets values at extreme tails equal to the specified percentile of the data. This reduces the influence of outliers in large-sample empirical analysis.

4. Following existing literature (eg Al-Horani et al. 2003; Chan et al. 2001) we substituted missing values of R&D expense with zero to avoid reducing sample size. For a robustness check, all empirical analyses were replicated in a smaller sample where observations with missing values of R&D expense were excluded. Both sets of results lead to highly similar inferences.

5. This also mitigates the causality issue since the control (explanatory) variables are measured with a lag relative to the cost of equity capital estimates (the dependent variable).

for physical assets investments because the benefits from the former are realised much later. Existing studies show a positive relationship between R&D expense and stock returns (Al-Horani et al. 2003; Chan et al. 2001). Lee et al. (2006) show that R&D is positively correlated with the implied cost of equity capital.

Guay et al. (2005) suggest that the motivation for deriving cost of equity capital from analyst forecast and market price, instead of estimating from historical returns by CAPM or using the Fama and French (1996) three-factor model, is the recognition in literature (eg Fama and French 1997) that the latter solution is deficient. Thus, they question the rationale of associating implied cost of equity capital estimates with factor loading estimates such as CAPM beta and covariance on other factor-mimicking portfolios. The existing evidence of such a relationship is also mixed. While Gebhardt et al. (2001) find a negative relationship, Botosan and Plumlee (2005) find a positive association. For this reason, we leave to future studies the issue of reconciling the implied cost of equity capital and factor loadings estimated from historical returns, and have excluded them from our analyses.

In simple terms, equity valuation models specify that the present intrinsic value of a company share is equal to expected payoff discounted by cost of equity capital (or expected return). While models may be specified in different ways, this general relationship between these three parameters remains the same. Holding expected payoff constant, present value of investment is inversely related to the cost of capital. We empirically observed the present value of the company from the actual price in the stock market and derived the expected future payoff from consensus earnings forecasts of analysts. To ensure that the results from our analysis were robust, we extracted cost of capital based on two different models, ie PEG of equation (3) (see Box 2.2) and AEG of equation (1) (see Box 2.1). Although the purpose of our analysis is to observe whether cost of equity capital is reduced following IFRS, there are many background factors that could influence cost of equity capital. In equation (4) (see Box 2.3) we filter out the confounding effect of factors that are likely to influence cost of equity capital (as identified by existing studies). The resulting adjusted cost of equity capital estimate enables us to attribute changes after 2005 to the impact of IFRS as opposed to confounding factors.

2.2 SAMPLE

Our sample covers companies in the UK and 16 other European countries with fiscal years ending 31 December, from 1995 to 2006. In all the countries we sampled, the IFRS reporting is required for fiscal years ending on or after 31 December 2005 (see Daske et al. 2007b, Table 2). We imposed this fiscal year-end restriction to ensure that all companies in our sample had issued two years of IFRS accounts, ie one for 'first transition' and one for 'initial settling down' period. Our sample period, as well as our cross-section of firms, was also restricted by the coverage of data sources. The sell-side analyst forecasts and prices we used to calculate the cost of equity were from the Institutional Brokers Estimate System (I/B/E/S). The data required to calculate market value, book-to-market value, debt-to-equity ratio, sales growth, R&D expense, and ownership were obtained from WorldScope and Datastream. To be included in our sample, a company needed to have sufficient data for each component of the PEG or AEG model. Following Chen et al. (2004) we set the value of cost of equity capital estimates under the AEG model to be equivalent to A in equation (1) (see Box 2.1) if eps_{t+1} was greater than eps_{t+2}. As a result of this assumption, the number of observations in the analyses based on the AEG model will be greater than those under the PEG model. Following existing studies on expected returns (eg Fama and French 1992) we excluded companies from the financial sector and those with negative book value of equity. Table 2.1 shows the size of our sample for each country. All countries appear in the full sample period of 1995–2006 except for Greece, which starts in 1999.

Table 2.1: Sample size (1995–2006)

Countries	PEG	AEG
Luxemburg	22	24
Ireland	201	212
Portugal	291	315
Austria	318	340
Belgium	557	606
Denmark	562	574
Greece	808	726
Spain	836	924
Finland	840	879
Norway	865	911
Italy	1060	1188
Netherlands	1158	1191
Switzerland	1172	1197
Sweden	1416	1455
Germany	2541	2459
France	2789	2896
UK	2900	3003
Total	**18336**	**18900**

This table presents the sample size across 17 European countries. It shows the total number of company-year observations with implied cost of equity capital estimates based either on the PEG or AEG model for the individual countries and the total sample. Countries are sorted in ascending order based on the sample size for number of observations based on the PEG model.

2.3 METHODOLOGY

We classified the countries in our sample into those with a higher- or lower-quality financial reporting environment and enforcement, basing our classification on five institutional environment characteristics from Leuz et al. (2003, Table 2, Panels A and B). These were:

- outsider rights
- the importance of the equity market
- ownership concentration
- disclosure quality, and
- earnings management.

Table 2.2 shows their values for each country. 'Outsider rights' are taken from the anti-director rights index from La Porta et al. (1998), which is an aggregate measure of minority shareholder rights and ranges from zero to five. Equity market importance is measured by the mean rank across the three variables used in La Porta et al. (1997), namely:

- aggregated stock market capitalisation held by minorities relative to gross national product
- the number of listed domestic firms relative to the population, and
- the number of IPOs relative to the population.

Ownership concentration is measured as the median percentage of common shares owned by the largest three shareholders in the ten largest privately owned non-financial companies (based on La Porta et al. 1998). Disclosure quality is measured by the inclusion or omission of 90 items in the 1990 annual report (based on La Porta et al. 1998). Earnings management is based on Leuz et al. (2003) and is the aggregated score from four earnings smoothing and discretion measures:

- smoothing the reported operating earnings using accruals
- smoothing and the correlation between changes in accounting accruals and operating cash flows
- the magnitude of accruals, and
- small-loss avoidance.

In simple terms, countries with higher outsider rights, higher equity-market importance, lower ownership concentration, higher disclosure quality, and lower earnings management are likely to have higher financial reporting incentives and enforcement. For companies in these countries the compliance costs are likely to be lower and benefits are likely to be higher. It is among these countries that the pro-incentives explanation predicts a reduction in the cost of equity capital.

Conversely, countries with lower outsider rights, lower equity market importance, higher ownership concentration, lower disclosure quality, and higher earnings management are likely to have lower financial reporting incentives and enforcement. For companies in these countries the compliance costs are likely to be higher and benefits are likely to be lower. It is among these countries that the pro-standards explanation predicts a reduction in the cost of equity capital.

We constructed a composite score to aggregate these institutional characteristics. We assigned a score of 1 to countries where the values of outsider rights, equity market importance and disclosure quality are above the pan-European median. We assigned a score of 0 to countries where these values are below the pan-European median. We assigned a score of 1 to countries where the values of ownership concentration and earnings management are below the pan-European median. We assigned a score of 0 to countries where these values are above the pan-European median. The last column of Table 2.2 shows the aggregated score across all five individual values. The countries with higher aggregated scores are assumed to have higher financial reporting incentives and enforcement environment. Conversely, the countries with lower aggregated scores are assumed to have lower financial reporting incentives and enforcement environment. Notice that the UK is the only country with the full aggregate score of 5. At the other extreme are countries such as Austria, Belgium, Germany, Greece, Italy and the Netherlands, which have aggregate scores of 0. Scandinavian countries are generally in between. As discussed in section 1.1, the pro-standard school of thought would predict a greater mandatory IFRS impact among countries with low aggregate scores. On the other hand, the pro-incentive argument would predict a greater mandatory IFRS impact among countries with high aggregate scores.

We grouped company-specific observations by the aggregate score derived above and applied different test specifications, ie mean t-test and regression analysis, to evaluate changes in the level of implied cost of equity capital estimates before (1995 to 2004) and after (2005 to 2006) the mandatory IFRS adoption. For each set of analyses, we applied four measures of implied cost of equity capital, ie PEG unadjusted, PEG adjusted, AEG unadjusted, and AEG adjusted. The adjusted estimates are based on the residuals of the firm fixed-effect regressions of equation (4) (see Box 2.3) estimated over our whole sample. The purpose is to isolate away confounding effects associated with company-specific fixed-effect and fundamentals such as size, growth, leverage and ownership. The regressions enable further control of country and industry effects. They also directly test whether changes in the level of implied cost of equity capital between two groups of companies partitioned along institutional characteristics indicators are statistically significant.

The regression tests are based on the equations in Box 2.4.

Table 2.2: Institutional characteristics

Countries	Outsider rights	Equity market importance	Ownership concentration	Disclosure quality	Earnings management	Aggregate score
Luxemburg	NA	NA	NA	NA	NA	NA
Ireland	4	17.3	0.36	NA	5.1	NA
Portugal	3	11.8	0.59	36	25.1	0
Austria	2	7	0.51	54	28.3	0
Belgium	0	11.3	0.62	61	19.5	0
Denmark	2	20	0.4	62	16	1
Greece	2	11.5	0.68	55	28.3	0
Spain	4	7.2	0.5	64	18.6	1
Finland	3	13.7	0.34	77	12	2
Norway	4	20.3	0.31	74	5.8	3
Italy	1	6.5	0.6	62	24.8	0
Netherlands	2	19.3	0.31	64	16.5	0
Switzerland	2	24.8	0.48	68	22	1
Sweden	3	16.7	0.28	83	6.8	2
Germany	1	5	0.5	62	21.5	0
France	3	9.3	0.24	69	13.5	1
UK	5	25	0.15	78	7	5

This table presents five institutional characteristics that determine financial reporting incentives and enforcement environment across 17 European countries, based on Leuz et al. (2003, Table 2 Panels A and B). A country is assigned a score of 1 (0) if the value of its institutional characteristics is above (below) pan-Europe median. The last column shows the aggregate score across all five indicators. Countries are sorted in ascending order on the basis of the sample size for number of observations based on the PEG model.

Box 2.4

$$KE_{it+1} = \gamma_0 + \gamma_1 Score_i + \gamma_2 (Score_i \times POST_{it}) + \gamma_3 POST_{it} + \sum_{j=1}^{6} \omega_j CTRL_{jit} + \sum_{k}^{16} \delta_k CDUM_{ki} + \sum_{l=1}^{35} \phi_l IDUM_{lit} + \varepsilon_{it} \quad (5)$$

where (for company i in year t):

- KE_{it} is the implied cost of capital based on PEG unadjusted, PEG adjusted, AEG unadjusted, and AEG adjusted estimates
- $Score_i$ is one of the five individual or aggregate institutional characteristics scores for the country in which the company is based; individual score is assigned to 1 (0) for countries where the values of outsider rights, equity market importance and disclosure quality are above (below) the pan-European median and ownership concentration and earnings management are below (above) the pan-European median; aggregate score sums the five individual scores
- $POST_{it}$ is assigned 1 for company-year observations in the post-IFRS period (2005 to 2006) and 0 otherwise
- $CTRL_{jit}$ are j control variables including market value, book-to-market value, debt-to-equity ratio, sales growth, R&D expense, and percentage of closely held shares (these control variables are excluded if implied cost of equity capital estimates are adjusted by equation 4 – see Box 2.3)
- $CDUM_{ki}$ are country dummies
- $IDUM_{lit}$ are industry dummies.

The coefficient γ_2 tests the difference in the level of cost of equity capital among countries with higher individual and aggregate scores respectively from pre- to post-IFRS periods. If the pro-standard argument holds, we would expect γ_2 to be statistically significant and positive whereas if the pro-incentives argument holds, we would expect γ_2 to be statistically significant but negative.

In simple terms, equation (5) (see Box 2.4) allows us to observe the relationship between implied cost of equity capital level and an institutional framework characteristic (eg higher outsider rights or lower earnings management) during the post-IFRS period. A significantly negative (positive) estimate for the coefficient (γ_2) of the interactive term ($Score_i \times POST_{it}$) indicates that the cost of equity capital level is lower (higher) after IFRS mandatory adoption for companies in countries where the institutional characteristics are more pronounced (eg higher outsider rights or lower earnings management) relative to their counterparts in countries where such institutional characteristics are less pronounced (eg lower outsider rights or higher earnings management).

3. Empirical findings

Tables 3.1 and 3.2 compare the level of cost of equity capital between the individual countries in the pre- and post-IFRS periods. Table 3.1 applies the PEG model. Based on the unadjusted estimates, the average companies across the sampled European countries experienced a drop in the cost of equity capital from 12.03% during the pre-IFRS period to 11.31% in the post-IFRS period, which is a 0.72% reduction. We observed that Belgium, Finland, France, Ireland, Spain, Sweden, Switzerland and the UK (about half of the countries in our sample) experienced statistically significant reductions. The greatest decline in magnitude occurred in Ireland (1.77%) and Sweden (1.74%). Companies in the UK experienced an average 1.17% drop following IFRS. Once we filter out confounding factors such as size, growth, leverage, ownership, and company fixed-effects, however, only Ireland, Portugal, Norway, Switzerland and the UK show a statistically significant drop in the cost of equity capital after IFRS. The sample size is reduced under the adjusted estimates owing to data availability for the control variables. The observation that only 5 out of 17 countries are associated with cost of equity capital reductions based on adjusted estimates, one of them being the UK, suggests that the impact of IFRS is weak. Table 3.2 applies the AEG model and repeats the same set of analyses. Based on the unadjusted estimates, we observed that Belgium, Finland, France, Ireland, the Netherlands, Portugal, Spain, Sweden, Switzerland and the UK experienced statistically significant reductions after IFRS. On the basis of the adjusted estimates, however, only Portugal and the UK had a statistically significant drop. From the analyses of individual countries, it is difficult to draw an inference in support of the pro-standards argument. On the one hand, we did see 'smaller' markets such as Portugal experiencing a drop, which seems to suggest that the new standards did have an impact. Nonetheless, this conclusion is not well supported since the drop also existed in a large equity-based market such as the UK but not in other 'small' markets such as Greece. In fact, the only country that all four indicators across both Tables 3.1 and 3.2 consistently indicate had a statistically significant reduction in cost of equity capital is the UK. If one assumes that UK-GAAP is already similar to IFRS in terms of disclosure quality, it seems surprising that the new standard should make any difference. The fact that the UK experienced a significant drop in the cost of equity capital while no systematic pattern existed across 'smaller' European countries could support the pro-incentives school of thought, ie IFRS compliance is more effective and less costly when there are higher financial reporting incentives and enforcement.

Table 3.1: Individual country analyses based on PEG model

	Unadjusted							Adjusted						
	obs	pre	post	total	diff	tstat		obs	pre	post	total	diff	tstat	
LUXEMBOURG	22	0.0914	0.2184	0.1087	–0.1270	–1.9282		NA	NA	NA	NA	NA	NA	
IRELAND	201	0.1271	0.1095	0.1240	0.0177	1.7386	*	196	0.0018	–0.0084	0.0000	0.0102	1.7409	*
PORTUGAL	291	0.1234	0.1079	0.1213	0.0156	1.4237		279	0.0027	–0.0170	0.0000	0.0197	3.9801	***
AUSTRIA	318	0.1151	0.1042	0.1137	0.0108	1.4214		300	–0.0007	0.0052	0.0000	–0.0059	-0.8685	
BELGIUM	557	0.1159	0.1052	0.1143	0.0108	2.1790	**	535	0.0001	–0.0006	0.0000	0.0007	0.1771	
DENMARK	562	0.1170	0.1142	0.1167	0.0028	0.5122		533	–0.0011	0.0074	0.0000	–0.0085	-2.1893	**
GREECE	808	0.1159	0.1170	0.1160	–0.0011	–0.2203		679	–0.0020	0.0107	0.0000	–0.0126	-3.0182	***
SPAIN	836	0.1057	0.0980	0.1045	0.0076	2.0015	**	797	–0.0005	0.0026	0.0000	–0.0032	-1.0289	
FINLAND	840	0.1319	0.1167	0.1291	0.0152	3.1569	***	811	–0.0001	0.0005	0.0000	–0.0006	-0.1890	
NORWAY	865	0.1539	0.1515	0.1534	0.0024	0.4254		810	0.0018	–0.0070	0.0000	0.0089	2.3074	**
ITALY	1060	0.1184	0.1118	0.1171	0.0066	1.6486		1027	–0.0002	0.0010	0.0000	–0.0012	-0.4844	
NETHERLANDS	1158	0.1175	0.1148	0.1172	0.0027	0.7431		1112	–0.0008	0.0054	0.0000	–0.0062	-2.1262	**
SWITZERLAND	1172	0.1130	0.0978	0.1105	0.0152	5.3929	***	832	0.0009	–0.0029	0.0000	0.0038	1.6590	*
SWEDEN	1416	0.1313	0.1139	0.1287	0.0174	4.8255	***	1322	0.0006	–0.0031	0.0000	0.0037	1.4479	
GERMANY	2541	0.1253	0.1236	0.1250	0.0017	0.6200		2402	–0.0005	0.0027	0.0000	–0.0032	-1.6474	
FRANCE	2789	0.1195	0.1116	0.1183	0.0079	3.3705	***	2635	–0.0001	0.0007	0.0000	–0.0008	-0.5086	
UK	2900	0.1105	0.0988	0.1089	0.0117	5.1526	***	2791	0.0005	–0.0033	0.0000	0.0038	2.6860	***
TOTAL	**18336**	**0.1203**	**0.1131**	**0.1192**	**0.0072**	**7.1397**	***	**16782**	**0.0000**	**0.0002**	**0.0000**	**–0.0003**	**-0.4005**	

This table presents the results from the mean t-tests between pre-IFRS (1995 to 2004) and post-IFRS (2005 to 2006) periods. The implied cost of equity capital is based on the Easton (2004) PEG model with estimates either unadjusted or adjusted. The implied cost of equity capital was estimated at June of year t+1 each year. This ensures a six-month publication gap for financial statement information to be reflected in market share price. The adjusted value of implied cost of equity capital is based on the residual of company fixed-effect regression of the original PEG model estimate on size, book-to-market value, debt-to-equity ratio, sales growth, R&D expense, percentage of closely held shares, and year dummies. ***, **, * indicate significance at 0.01, 0.05, 0.1 level respectively. Countries are sorted in ascending order based on the sample size for a number of observations based on the unadjusted PEG model.

Table 3.2: Individual country analyses based on AEG model

	Unadjusted							Adjusted						
	obs	pre	post	total	diff	tstat		obs	pre	post	total	diff	tstat	
LUXEMBOURG	24	0.0987	0.2266	0.1147	–0.1279	–2.1413		NA	NA	NA	NA	NA	NA	
IRELAND	212	0.1341	0.1140	0.1305	0.0201	1.8144	*	207	0.0019	–0.0091	0.0000	0.0111	1.4092	
PORTUGAL	315	0.1309	0.1049	0.1272	0.0260	2.2778	**	302	0.0040	–0.0240	0.0000	0.0280	4.3934	***
AUSTRIA	340	0.1248	0.1143	0.1236	0.0105	1.3238		321	–0.0008	0.0056	0.0000	-0.0063	-0.8753	
DENMARK	574	0.1265	0.1188	0.1254	0.0077	1.2152		542	–0.0010	0.0061	0.0000	-0.0070	-1.2952	
BELGIUM	606	0.1237	0.1076	0.1210	0.0161	2.9706	***	587	–0.0002	0.0008	0.0000	-0.0009	-0.2085	
GREECE	726	0.1038	0.1209	0.1068	–0.0171	–2.8379	***	640	–0.0039	0.0164	0.0000	-0.0202	-3.6980	***
FINLAND	879	0.1458	0.1296	0.1427	0.0162	3.2790	***	851	0.0008	–0.0032	0.0000	0.0040	0.9724	
NORWAY	911	0.1569	0.1488	0.1551	0.0081	1.2948		851	0.0010	–0.0036	0.0000	0.0046	1.0278	
SPAIN	924	0.1089	0.1015	0.1077	0.0074	1.7277	*	888	–0.0008	0.0037	0.0000	-0.0045	-1.2222	
ITALY	1188	0.1207	0.1141	0.1194	0.0066	1.5201		1154	–0.0004	0.0016	0.0000	-0.0020	-0.5501	
NETHERLANDS	1191	0.1323	0.1232	0.1312	0.0092	2.2656	**	1146	0.0001	–0.0008	0.0000	0.0009	0.2598	
SWITZERLAND	1197	0.1199	0.1038	0.1172	0.0161	5.4044	***	859	0.0009	–0.0029	0.0000	0.0037	1.4947	
SWEDEN	1455	0.1437	0.1247	0.1408	0.0190	5.0770	***	1367	0.0006	–0.0034	0.0000	0.0040	1.2686	
GERMANY	2459	0.1325	0.1291	0.1320	0.0034	1.1426		2352	–0.0010	0.0050	0.0000	-0.0060	-2.5168	**
FRANCE	2896	0.1280	0.1186	0.1265	0.0094	3.6701	***	2748	–0.0002	0.0008	0.0000	-0.0010	-0.5100	
UK	3003	0.1291	0.1098	0.1263	0.0193	7.6581	***	2895	0.0008	–0.0050	0.0000	0.0058	3.2076	***
TOTAL	**18900**	**0.1294**	**0.1194**	**0.1278**	**0.0100**	**9.1664**	***	**17408**	**–0.0001**	**0.0003**	**0.0000**	**-0.0004**	**-0.4867**	

This table presents the results from the mean t-tests between pre-IFRS (1995 to 2004) and post-IFRS (2005 to 2006) periods. The implied cost of equity capital is based on the Ohlson and Juettner-Nauroth (2005) AEG model with estimates either unadjusted or adjusted. The implied cost of equity capital was estimated at June of year t+1 each year. This ensures a six-month publication gap for financial statement information to be reflected in market share price. The adjusted value of implied cost of equity capital is based on the residual of company fixed-effect regression of the original AEG model estimate on size, book-to-market value, debt-to-equity ratio, sales growth, R&D expense, percentage of closely held shares, and year dummies. ***, **, * indicate significance at 0.01, 0.05, 0.1 level respectively. Countries are sorted in ascending order based on the sample size for a number of observations based on the unadjusted AEG model.

In Tables 3.3 (PEG model) and 3.4 (AEG model) we partition the sampled European companies not by individual countries but by institutional characteristics, ie we consider individual indicators separately as well as aggregated score. The unadjusted PEG estimates of Table 3.3 show that companies in countries with above-median outsider rights experienced a 0.55% drop after IFRS while companies in countries with below-median outsider rights experienced a 0.78% drop. Companies in countries where equity market importance is high are associated with a 0.67% decline in cost of equity capital, while those in countries where equity market importance is low are associated with a 0.74% decline in cost of equity capital. Countries with low ownership concentration had a 0.89% reduction whereas countries with high ownership concentration had a 0.67% reduction. Countries with high disclosure quality experienced a 1.26% decrease whereas those with low disclosure quality experienced a 0.51% decrease. Countries with low earnings management are associated with a 0.91% drop following IFRS, whereas those with high earnings management are associated with a 0.63% drop.

The adjusted PEG estimates of Table 3.3 show, however, that the real reduction in the cost of equity capital after filtering out confounding factors is concentrated among companies in countries with high outsider rights, equity market importance, and disclosure quality as well as low earnings management. In other words, four out of five institutional characteristics indicate that higher financial reporting incentives and enforcement are associated with cost of equity capital reductions following IFRS. Thus, we find evidence in favour of the pro-incentive explanation but not the pro-standard explanation.

Turning to the aggregate score, in Table 3.3 we partition our sample into high (5), middle (1, 2, 3, and 4), and low (0) score countries. The distribution of aggregate scores across the countries is shown in Table 2.2. The UK is the only country with an aggregate score of 5, which means it has all five individual indicators above the pan-Europe median. Countries such as Austria, Belgium, Germany, Greece, Italy, Netherlands and Portugal fall into the group where all five indicators are below the pan-Europe median (aggregate score 0). Notice that countries with both high and middle aggregate scores experienced a decline of over 0.9% in the unadjusted PEG estimates. In contrast, the low-score countries had a drop of less than 0.4% over the same period. As explained in section 2.2, the aggregate score is constructed so that higher scores indicate higher financial reporting incentives and enforcement environment, whereas lower scores indicate the opposite. Given the observation that low-score countries experienced less than half the cost of equity capital reduction following IFRS, relative to their higher-score counterparts, we see no evidence in support of the pro-standard argument that predicts a higher impact among 'smaller' countries with lower-standard domestic GAAP. In fact, turning to the results from the adjusted estimates, notice that only the country with a high aggregate score (5) experienced a statistically significant drop in the cost of equity capital since IFRS. Since the UK is the only country to have such a high aggregate score, this result suggests that on the average there was no drop in the cost of equity capital after controlling for company-specific fundamentals for companies across the rest of the European countries in our sample.

Table 3.4 yields a broadly similar pattern under the AEG model. Companies in the country with a high aggregate score, ie the UK, experienced a drop of over 1.9%, countries with a mid-range aggregate score showed a drop of just over 1%, and those with a low aggregate score showed a decline of only 0.55%. This pattern agrees with the findings under the PEG model and reconfirms that the 'smaller' countries with low-quality domestic GAAP did not necessarily benefit more from IFRS, as was suggested by the pro-standard argument. According to the adjusted AEG estimates, there were statistically significant reductions only among companies in the UK where the aggregate score is high. If accounting standards matter the most in determining cost of equity capital, then why, after mandating IFRS, did we not see a significant benefit among the groups where it should make the biggest difference, ie the countries with low disclosure quality and high earnings management? Instead, we observe a significant impact only in equity-based economies with high outsider rights and disclosure quality as well as low ownership concentration and earnings management. Our findings lends support to the pro-incentives school of thought, which broadly agrees with the findings of Ball et al. (2003), Christensen et al. (2008) and Daske et al. (2007a, 2007b).

Table 3.3: Institutional characteristics analyses based on PEG model

		Unadjusted							Adjusted						
		obs	pre	post	total	diff	tstat		obs	pre	post	total	diff	tstat	
Outsider rights	high	4824	0.1176	0.1121	0.1167	0.0055	2.5524	**	4614	0.0006	–0.0033	0.0000	0.0039	2.9573	***
	low	13512	0.1213	0.1134	0.1200	0.0078	6.8882	***	12467	–0.0002	0.0011	0.0000	–0.0014	–1.7026	*
Equity market importance	high	5521	0.1180	0.1113	0.1170	0.0067	3.4844	***	4986	0.0006	–0.0030	0.0000	0.0036	3.0338	***
	low	12815	0.1213	0.1138	0.1201	0.0074	6.2907	***	12095	–0.0002	0.0013	0.0000	–0.0015	–1.7985	*
Ownership concentration	high	12625	0.1228	0.1161	0.1217	0.0067	5.4142	***	11635	–0.0001	0.0005	0.0000	–0.0006	–0.6682	
	low	5711	0.1148	0.1059	0.1135	0.0089	5.3235	***	5446	0.0002	–0.0012	0.0000	0.0014	1.2482	
Disclosure quality	high	5379	0.1197	0.1072	0.1178	0.0126	6.8253	***	5140	0.0005	–0.0027	0.0000	0.0032	2.6694	***
	low	12957	0.1205	0.1154	0.1197	0.0051	4.2486	***	11941	–0.0002	0.0010	0.0000	–0.0012	–1.4945	
Earnings management	high	12092	0.1183	0.1120	0.1173	0.0063	5.3174	***	11131	–0.0003	0.0018	0.0000	–0.0021	–2.5237	**
	low	6244	0.1242	0.1151	0.1228	0.0091	4.8168	***	5950	0.0006	–0.0035	0.0000	0.0041	3.4853	***
Aggregate score	high (5)	2900	0.1105	0.0988	0.1089	0.0117	5.1526	***	2791	0.0005	–0.0033	0.0000	0.0038	2.6860	***
	mid (1,2,3,4)	8480	0.1236	0.1145	0.1221	0.0091	6.1185	***	7740	0.0002	–0.0008	0.0000	0.0010	1.0049	
	low (0)	6733	0.1203	0.1165	0.1198	0.0038	2.2935	**	6334	–0.0005	0.0026	0.0000	–0.0031	–2.6197	***

This table presents the results from the mean t-tests between pre-IFRS (1995 to 2004) and post-IFRS (2005 to 2006) IFRS periods. The implied cost of equity capital is based on the Easton (2004) PEG model with estimates either unadjusted or adjusted. The implied cost of equity capital was estimated at June of year t+1 each year. This ensures a six-month publication gap for financial statement information to be reflected in market share price. The adjusted value of implied cost of equity capital is based on the residual of company fixed-effect regression of the original PEG model estimate on size, book-to-market value, debt-to-equity ratio, sales growth, R&D expense, percentage of closely held shares, and year dummies. The institutional characteristics are based on Leuz et al. (2003). Outsider rights are based on the anti-director rights index from La Porta et al. (1998), which is an aggregate measure of minority shareholder rights and ranges from zero to five. Equity market importance is measured by the mean rank across three variables used in La Porta et al. (1997), which include aggregated stock market capitalisation held by minorities to gross national product, the number of listed domestic firms relative to the population, and the number of IPOs relative to the population. Ownership concentration is measured as the median percentage of common shares owned by the largest three shareholders in the ten largest privately owned non-financial companies (based on La Porta et al. 1998). Disclosure quality is measured by the inclusion or omission of 90 items in the 1990 annual report (based on La Porta et al. (1998). Earnings management is based on Leuz et al. (2003) and is the aggregated score from four earnings smoothing and discretion measures. These include smoothing reported operating earnings using accruals, smoothing and the correlation between changes in accounting accruals and operating cash flows, the magnitude of accruals, and small-loss avoidance. We assigned a value of 1 (0) to countries with outsider rights, equity importance, and disclosure quality indicators above (below) the pan-Europe median and zero otherwise, and assigned a value of 1 (0) to countries with ownership concentration and earnings management indicators below (above) pan-Europe median and zero otherwise. The aggregated score (AS) is the sum of five individual scores. ***, **, * indicate significance at 0.01, 0.05, 0.1 level respectively.

Table 3.4: Institutional characteristics analyses based on AEG model

		Unadjusted							Adjusted						
		obs	pre	post	total	diff	tstat		obs	pre	post	total	diff	tstat	
Outsider rights	high	5074	0.1301	0.1184	0.1282	0.0117	5.1177	***	4863	0.0006	–0.0031	0.0000	0.0037	2.3294	**
	low	13826	0.1291	0.1198	0.1276	0.0094	7.6051	***	12869	–0.0002	0.0011	0.0000	–0.0014	–1.3559	
Equity market importance	high	5709	0.1309	0.1182	0.1289	0.0127	6.1834	***	5169	0.0006	–0.0032	0.0000	0.0038	2.6560	***
	low	13191	0.1288	0.1199	0.1273	0.0088	6.8687	***	12563	–0.0003	0.0014	0.0000	–0.0016	–1.5519	
Ownership concentration	high	12977	0.1299	0.1213	0.1284	0.0085	6.3270	***	12067	–0.0002	0.0008	0.0000	–0.0009	–0.8821	
	low	5923	0.1284	0.1147	0.1264	0.0137	7.5602	***	5665	0.0003	–0.0019	0.0000	0.0022	1.6770	*
Disclosure quality	high	5573	0.1355	0.1181	0.1328	0.0174	8.9346	***	5342	0.0008	–0.0044	0.0000	0.0051	3.4495	***
	low	13327	0.1268	0.1199	0.1257	0.0069	5.2634	***	12390	–0.0003	0.0017	0.0000	–0.0020	–1.9814	**
Earnings management	high	12416	0.1248	0.1170	0.1235	0.0078	6.0127	***	11539	–0.0004	0.0022	0.0000	–0.0026	–2.5267	**
	low	6484	0.1383	0.1239	0.1359	0.0144	7.2710	***	6193	0.0008	–0.0042	0.0000	0.0050	3.4683	***
Aggregate score	high (5)	3003	0.1291	0.1098	0.1263	0.0193	7.6581	***	2895	0.0008	–0.0050	0.0000	0.0058	3.2076	***
	mid (1,2,3,4)	8836	0.1319	0.1211	0.1301	0.0108	6.8061	***	8106	0.0002	–0.0008	0.0000	0.0009	0.7670	
	low (0)	6825	0.1262	0.1207	0.1254	0.0055	2.9794	***	6502	–0.0006	0.0032	0.0000	–0.0039	–2.5523	**

This table presents the results from the mean t-tests between pre-IFRS (1995 to 2004) and post-IFRS (2005 to 2006) IFRS periods. The implied cost of equity capital is based on the Ohlson and Juettner-Nauroth (2005) AEG model with estimates either unadjusted or adjusted. The implied cost of equity capital was estimated at June of year t+1 each year. This ensures a six-month publication gap for financial statement information to be reflected in market share price. The adjusted value of implied cost of equity capital is based on the residual of company fixed-effect regression of the original AEG model estimate on size, book-to-market value, debt-to-equity ratio, sales growth, R&D expense, percentage of closely held shares, and year dummies. The institutional characteristics are based on Leuz et al. (2003). Outsider rights are based on the anti-director rights index from La Porta et al. (1998), which is an aggregate measure of minority shareholder rights and ranges from zero to five. Equity market importance is measured by the mean rank across three variables used in La Porta et al. (1997), which include aggregated stock market capitalisation held by minorities to gross national product, the number of listed domestic firms relative to the population, and the number of IPOs relative to the population. Ownership concentration is measured as the median percentage of common shares owned by the largest three shareholders in the ten largest privately owned non-financial companies (based on La Porta et al. 1998). Disclosure quality is measured by the inclusion or omission of 90 items in the 1990 annual report (based on La Porta et al. (1998). Earnings management is based on Leuz et al. (2003) and is the aggregated score from four earnings smoothing and discretion measures. These include smoothing reported operating earnings using accruals, smoothing and the correlation between changes in accounting accruals and operating cash flows, the magnitude of accruals, and small-loss avoidance. We assigned a value of 1 (0) to countries with outsider rights, equity importance, and disclosure quality indicators above (below) the pan-Europe median and zero otherwise, and assigned a value of 1 (0) to countries with ownership concentration and earnings management indicators below (above) pan-Europe median and zero otherwise. The aggregated score (AS) is the sum of five individual scores. ***, **, * indicate significance at 0.01, 0.05, 0.1 level respectively.

Table 3.5 shows a comparison of the effects of contrasting institutional characteristics using regression analysis. A significantly negative γ_2 coefficient indicates a reduction in the cost of equity capital that is especially pronounced under the designated institutional characteristics. From the adjusted PEG estimates, we observe significantly lower implied cost of capital among companies in countries with high outsider rights (–0.0053), high equity market importance (–0.0052), high disclosure quality (–0.0041), lower earnings management (–0.0063), and higher aggregate score (–0.0017) relative to their counterparts in countries with the opposite institutional characteristics. These results reconfirm the pattern in Table 3.3 that four out of five institutional characteristics indicate that companies in countries with greater financial reporting incentives and enforcement have cost of equity capital reduction after IFRS. In terms of the aggregate score, we again observe that companies in countries with higher scores (–0.0017) experienced significant reduction in cost of equity capital while those in lower-score (–0.0002) countries reveal no statistically significant changes.

Table 3.6 implements a similar analysis using the AEG model. On the basis of the adjusted AEG estimates, we observe significantly lower implied cost of capital among companies in countries with high outsider rights (–0.0052), high equity market importance (–0.0056), low ownership concentration (–0.0032), high disclosure quality (–0.0070), lower earnings management (–0.0078), and higher aggregate score (–0.0021) relative to their counterparts in countries with opposite institutional characteristics. This is broadly consistent with the findings under the PEG model, ie different institutional characteristics consistently yield empirical evidence in favour of the pro-incentive explanation as opposed to the pro-standard explanation. In general, the findings from Tables 3.5 and 3.6 confirm that the results from Tables 3.3 and 3.4 are robust to controls for country and industry effects as well as different test specifications.

On the whole, we see no evidence of a reduction in the level of cost of equity capital among countries with lower financial reporting incentives and enforcement. Companies in such countries were promised that an improvement in accounting quality would follow the introduction of the newly mandated accounting standards. This in turn should have translated into a reduction in the cost of equity capital, which proponents of IFRS suggest is the main benefit of its adoption. Empirically, we have observed a broadly opposite result. Companies in countries with higher financial reporting incentives and enforcement standards tended to experience the largest reduction in the cost of capital following the implementation of IFRS. A possible explanation could be that companies in countries with high financial reporting incentives and enforcement had stronger incentives to comply fully with IFRS rather than to 'box-tick' their way through the adoption. This greater willingness could be because such companies already relied on equity-based financing and were therefore more familiar with higher-quality financial reporting rules. Switching to IFRS gave such companies further access to equity capital abroad than they would have had under domestic GAAP and, owing to their already higher disclosure quality, they incurred fewer costs when switching to the new standard than their counterparts in countries with low-quality GAAP. Thus, our findings lend support to the pro-incentives school of thought.

Of course, given the widely held view that the disclosure quality of UK-GAAP is supposed to be at least equal to, if not better than, IFRS, one would expect no cost of equity capital effect in the UK following mandatory IFRS adoption. The fact that we empirically observed such a reduction invites different explanations. Although we have put forward the pro-incentive explanation, we cannot entirely rule out other reasons, such as the limitation of the applied models and methodology as well as unidentified confounding effects. Nonetheless, the belief that UK companies should not benefit from IFRS neglects the fact that even if UK-GAAP is equivalent to IFRS in terms of disclosure quality, the mandatory switch has enabled cross-border comparability previously unavailable to UK companies. In other words, there is still a dimension in which UK companies can benefit. If cross-border comparability does matter, we expect the benefit to be more pronounced among UK companies with higher demand for foreign capital.

In Table 3.7 we show the results of additional empirical tests to determine whether the reduction in cost of equity capital that we observed in the UK was indeed more pronounced among companies with greater foreign capital demand. We use the annual growth in the ratio of foreign to total revenue as a proxy for such demand. Foreign revenue has been applied in other IFRS studies as a proxy of foreign exposure (eg Christensen et al. 2007; Tarca 2004). Companies with higher foreign exposure are more likely to attract foreign investors since they have established reputations and operations abroad. Once accounting standards become comparable, companies with greater foreign exposure could draw in foreign capital more easily than their counterparts with less foreign exposure. Because we use growth as opposed to the level of foreign revenue, we capture the additional dimension of the demand of equity capital, since growth opportunities create the demand for raising capital. In other words, UK companies with higher growth in foreign revenue are likely to have greater foreign exposure as well as capital demand. They are probable beneficiaries of improved comparability in financial reporting following mandatory IFRS, even though UK-GAAP is similar to IFRS in disclosure quality.

Table 3.5: Regression analyses based on PEG model

			Unadjusted			Adjusted		
	obs		coeff	tstat		coeff	tstat	
Outsider rights	17061	γ_1	0.0424	10.54	***	0.0010	0.37	
		γ_2	–0.0027	–1.30		–0.0053	–3.45	***
Equity market importance	17061	γ_1	–0.0116	–2.94	***	0.0007	0.25	
		γ_2	–0.0037	–1.86	*	–0.0052	–3.55	***
Ownership concentration	17061	γ_1	–0.0131	–3.82	***	0.0003	0.11	
		γ_2	–0.0040	–2.19	**	–0.0020	–1.41	
Disclosure quality	16865	γ_1	0.0227	6.04	***	0.0007	0.28	
		γ_2	–0.0077	–3.90	***	–0.0041	–2.81	***
Earnings management	17061	γ_1	0.0243	4.92	***	0.0010	0.29	
		γ_2	–0.0064	–3.31	***	–0.0063	–4.34	***
Aggregate score (AS)	16865	γ_1	0.0022	3.15	***	0.0002	0.49	
		γ_2	–0.0018	–3.54	***	–0.0017	–4.45	***

This table presents the results from regression tests based on the following equations.

$$KE_{it+1} = \gamma_0 + \gamma_1 Score_t + \gamma_2 (POST_{it} \times Score_t) + \gamma_3 POST_{it} + \sum_{j=1}^{6} \omega_j CTRL_{jit} + \sum_{k}^{16} \delta_k CDUM_{ki} + \sum_{l=1}^{35} \phi_l IDUM_{lit} + \varepsilon_{it}$$

where $_{it}$ is the implied cost of equity capital based on the Easton (2004) PEG model with estimates either unadjusted or adjusted; $Score_i$ is one of the five individual or aggregate institutional characteristics scored for the country in which the company is based; $POST_{it}$ is assigned 1 for company-year observations in the post-IFRS period (2005 to 2006) and 0 otherwise; $CTRL_{jit}$ represents *j* control variables, including market value, book-to-market value, debt-to-equity ratio, sales growth, R&D expense, and percentage of closely held shares (these control variables are excluded if implied cost of equity capital estimates are adjusted by equation 4); $CDUM_{ki}$ represents country dummies and $IDUM_{lit}$ represents industry dummies. Implied cost of equity capital was estimated at June of year t+1 each year. This ensures a six-month publication gap for financial statement information to be reflected in market share price. The adjusted value of implied cost of equity capital is based on the residual of company fixed-effect regression of the original PEG model estimate on size, book-to-market value, debt-to-equity ratio, sales growth, R&D expense, percentage of closely held shares, and year dummies. The institutional characteristics are based on Leuz et al. (2003). Outsider rights are taken from the anti-director rights index from La Porta et al. (1998), which is an aggregate measure of minority shareholder rights and ranges from zero to five. Equity market importance is measured by the mean rank across three variables used in La Porta et al. (1997), which includes aggregated stock market capitalisation held by minorities relative to gross national product, the number of listed domestic firms relative to the population, and the number of IPOs relative to the population. Ownership concentration is measured as the median percentage of common shares owned by the largest three shareholders in the ten largest privately owned non-financial companies (based on La Porta et al. 1998). Disclosure quality is measured by the inclusion or omission of 90 items in the 1990 annual report (based on La Porta et al. 1998). Earnings management is based on Leuz et al. (2003) and is the aggregated score from four earnings smoothing and discretion measures. These include smoothing reported operating earnings using accruals, smoothing and the correlation between changes in accounting accruals and operating cash flows, the magnitude of accruals, and small-loss avoidance. We assigned a value of 1 (0) to countries with outsider rights, equity importance, and disclosure quality indicators above (below) the pan-Europe median and zero otherwise, and assigned a value of 1 (0) to countries with ownership concentration and earnings management indicators below (above) the pan-Europe median and zero otherwise. The aggregated score (AS) is the sum of five individual scores. T-statistics are based on robust standard errors. ***, **, * indicate significance at 0.01, 0.05, 0.1 level respectively.

Table 3.6: Regression analyses based on AEG model

	obs			Unadjusted coeff	tstat		Adjusted coeff	tstat	
	17710	γ_1		0.0393	8.71	***	0.0010	0.30	
Outsider rights		γ_2		–0.0063	–2.63	***	–0.0052	–2.72	***
Equity market importance	17710	γ_1		0.0228	4.80	***	0.0011	0.29	
		γ_2		–0.0079	–3.46	***	–0.0056	–3.08	***
Ownership concentration	17710	γ_1		–0.0004	–0.09		0.0005	0.14	
		γ_2		–0.0068	–3.20	***	–0.0032	–1.89	*
	17503	γ_1		0.0086	2.03	**	0.0011	0.31	
Disclosure quality		γ_2		–0.0112	–5.05	***	–0.0070	–3.79	***
Earnings management	17710	γ_1		0.0024	0.41		0.0013	0.26	
		γ_2		–0.0102	–4.56	***	–0.0078	–4.31	***
	17503	γ_1		0.0002	0.23		0.0003	0.46	
Aggregate score		γ_2		–0.0031	–5.29	***	–0.0021	–4.44	***

This table presents the results from regression tests based on the following equations.

$$KE_{it+1} = \gamma_0 + \gamma_1 Score_t + \gamma_2 (POST_{it} \times Score_t) + \gamma_3 POST_{it} + \sum_{j=1}^{6} \omega_j CTRL_{jit} + \sum_{k}^{16} \delta_k CDUM_{ki} + \sum_{l=1}^{35} \phi_l IDUM_{lit} + \varepsilon_{it}$$

where KE_{it} is the implied cost of equity capital based on the Ohlson and Juettner-Nauroth (2005) AEG model with estimates either unadjusted or adjusted; $Score_i$ is one of the five individual or aggregate institutional characteristics scored for the country in which the company is based; $POST_{it}$ is assigned 1 for company-year observations in the post-IFRS period (2005 to 2006) and 0 otherwise; $CTRL_{jit}$ represents j control variables, including market value, book-to-market value, debt-to-equity ratio, sales growth, R&D expense, and percentage of closely held shares (these control variables are excluded if implied cost of equity capital estimates are adjusted by equation 4); $CDUM_{ki}$ represents country dummies and $IDUM_{lit}$ represents industry dummies. Implied cost of equity capital was estimated at June of year t+1 each year. This ensures a six-month publication gap for financial statement information to be reflected in market share price. The adjusted value of implied cost of equity capital is based on the residual of company fixed-effect regression of the original AEG model estimate on size, book-to-market value, debt-to-equity ratio, sales growth, R&D expense, percentage of closely held shares, and year dummies. The institutional characteristics are based on Leuz et al. (2003). Outsider rights are taken from the anti-director rights index from La Porta et al. (1998), which is an aggregate measure of minority shareholder rights and ranges from zero to five. Equity market importance is measured by the mean rank across three variables used in La Porta et al. (1997), which includes aggregated stock market capitalisation held by minorities relative to gross national product, the number of listed domestic firms relative to the population, and the number of IPOs relative to the population. Ownership concentration is measured as the median percentage of common shares owned by the largest three shareholders in the ten largest privately owned non-financial companies (based on La Porta et al. 1998). Disclosure quality is measured by the inclusion or omission of 90 items in the 1990 annual report (based on La Porta et al. 1998). Earnings management is based on Leuz et al. (2003) and is the aggregated score from four earnings smoothing and discretion measures. These include smoothing reported operating earnings using accruals, smoothing and the correlation between changes in accounting accruals and operating cash flows, the magnitude of accruals, and small-loss avoidance. We assigned a value of 1 (0) to countries with outsider rights, equity importance, and disclosure quality indicators above (below) the pan-Europe median and zero otherwise, and assigned a value of 1 (0) to countries with ownership concentration and earnings management indicators below (above) the pan-Europe median and zero otherwise. The aggregated score (AS) is the sum of five individual scores. T-statistics are based on robust standard errors. ***, **, * indicate significance at 0.01, 0.05, 0.1 level respectively.

Table 3.7: Analyses conditional on foreign capital demand

Panel A: UK

	PEG adjusted			AEG adjusted		
	coeff	tstat		coeff	tstat	
λ_1	–0.0035	–2.03	**	–0.0055	–2.47	**
λ_2	–0.0014	–2.65	***	–0.0013	–2.92	***
λ_3	0.0000	1.34		0.0000	4.44	***
λ_0	0.0017	1.14		0.0021	0.54	
obs	1695			1784		
R-squared	0.0087			0.0073		

Panel B: non-UK

	PEG adjusted			AEG adjusted		
	coeff	tstat		coeff	tstat	
λ_1	0.0020	2.22	**	0.0011	1.03	
λ_2	0.0000	–1.27		0.0000	–1.13	
λ_3	0.0000	0.56		0.0000	0.34	
λ_0	–0.0195	–1.13		–0.0003	–0.06	
obs	7726			8120		
R-squared	0.0023			0.0015		

This table presents the results from regression tests based on the following equations.

$$KE_{it+1} = \lambda_0 + \lambda_1 POST_{it} + \lambda_2 (POST_{it} \times FRG_{it}) + \lambda_3 FRG_{it} + \sum_{l=1}^{35} \phi_l IDUM_{lit} + \varepsilon_{it}$$

where KE_{it} is the implied cost of equity capital based on the Easton (2004) PEG or Ohlson and Juettner-Nauroth (2005) AEG model with estimates adjusted; FRG_{it} is the one-year percentage change in foreign to total revenue at the end of fiscal year t; $POST_{it}$ is assigned 1 for company-year observations in the post-IFRS period (2005 to 2006) and 0 otherwise; $IDUM_{lit}$ are industry dummies. Implied cost of equity capital was estimated at June of year t+1 each year. This ensures a six-month publication gap for financial statement information to be reflected in market share price. The adjusted value of implied cost of equity capital is based on the residual of company fixed-effect regression of the original PEG or AEG model estimates on size, book-to-market value, debt-to-equity ratio, sales growth, R&D expense, percentage of closely held shares, and year dummies. T-statistics are based on robust standard errors. ***, **, * indicate significance at 0.01, 0.05, 0.1 level respectively.

The results in Table 3.7 confirm this prediction.[6] We regress adjusted cost of equity capital estimates on post-IFRS dummy variable, annual growth in foreign to total revenue, the interaction between these two variables, as well as industry dummy variables. A significantly negative coefficient on the interactive term would indicate that post-IFRS period cost of equity capital is lower in companies with higher foreign revenue growth relative to their counterparts with low foreign revenue growth. Panel A shows that in the UK sample both adjusted PEG (–0.0014, tstat = –2.65) and AEG (–0.0013, tstat = –2.92) models confirm a statistically significant drop in the cost of equity capital among companies with higher foreign revenue growth. In contrast, Panel B indicates no such effect in the non-UK sample. This shows that foreign capital demand per se does not determine cost of equity capital benefit following IFRS. In countries where debt-based financing dominates and the institutional framework does not foster higher financial reporting incentives and enforcement, companies with higher foreign capital demand do not necessarily enjoy a cost of equity capital benefit from increased comparability of financial statements, perhaps because box-ticking behaviour limits the disclosure quality. On the other hand, the joint effect of equity-based financing, higher disclosure incentives and enforcement, and greater foreign capital demand has reduced the cost of equity capital of UK companies upon increased accounting comparability following IFRS.

The results in Table 3.7 support the possibility that the empirically observed reduction in cost of equity capital among UK companies following IFRS could be attributed to this accounting switch, instead of reasons such as methodological limitations and/or unidentified confounding effects.[7] The contrast between the UK and non-UK sample results provides further evidence in support of the pro-incentives explanation. Our argument that UK companies with higher foreign capital demand can still benefit from IFRS mandatory adoption despite the commonly accepted notion that UK-GAAP equates to IFRS in disclosure quality invites further research on this issue.

6. The sample size of the analyses in Table 3.7 is smaller than those in Tables 3.1 to 3.6 owing to restricted data availability on Datastream. The sample period is also reduced by one year (ie it begins in 1996 instead of 1995) since the calculation of growth in foreign to total revenue each year requires the value of this variable from the previous year. Nonetheless, there are no reasons to believe these will bias our analyses towards finding empirical evidence in favour of our prediction.

7. To address the possibility that our findings in Table 3.7 were due to the foreign exchange rate effect, we also replicated our test using the level of foreign to total revenue. If foreign exchange rate advantage is the underlying cause of our findings, we should find qualitatively similar results even when we substitute the level of foreign revenue for growth, which also reflects the degree of foreign exposure. However, we find no such evidence. We argue that growth in foreign revenue captures capital demand in addition to foreign exposure.

4. Conclusion

We have compared the cost of equity capital for European countries between the pre- and post-IFRS periods using different proxies and test specifications. We find no evidence of a reduction in the cost of equity capital among countries where there are relatively low financial reporting incentives and enforcement. Instead, we find a significant reduction in the high incentive group, mainly companies based in the UK. Our findings do not support the pro-standard school of thought, which predicts greater IFRS benefits for smaller countries with lower-quality domestic GAAP. Given that UK-GAAP was recognised to be roughly equal in disclosure quality to IFRS, our results may surprise the pro-standard camp. We provide further evidence that the reduction in the cost of equity capital in the UK has been more pronounced among companies with greater foreign capital demand, and argue that despite the rough equivalence in disclosure quality between UK-GAAP and IFRS, improved cross-border comparability in financial statements could have benefited such companies. The same foreign capital demand effect is not, however, observed in the rest of Europe, which further confirms the primary role that financial reporting incentives and enforcement play in determining the economic consequences of mandatory IFRS adoption.

There are cross-sectional variations in disclosure incentives and accounting quality in any domestic setting due to company-specific characteristics. Although the mandatory adoption of IFRS across Europe standardises the 'accounting language' and comparability of financial statements across borders, such cross-sectional variations remain within Europe as they would within any individual country. Higher disclosure incentives and accounting quality are more likely to be concentrated in the UK than the rest of Europe owing to institutional differences that accounting standards alone are unlikely to alter.

From an academic perspective, our overall results are consistent with evidence from other empirical studies (eg, Ball et al. 2003; Christensen et al. 2008; Daske et al. 2007a, 2007b), which find that incentives dominate standards in determining accounting quality. Our evidence shows that in the first two years of IFRS mandatory adoption, companies in countries such as the UK, where equity-based financing and higher disclosure quality are common, benefited more from IFRS. This finding lends support to the pro-incentives school of thought, which argues that irrespective of accounting standards companies will commit to higher disclosure quality should they see the need to do so. Since UK companies are mostly equity-based and produce higher-quality accounting disclosure, the switch to IFRS gives them further improved access to international equity capital.

One could argue that the results we report are only the short-run impact and that the benefits to companies in the countries with lower-quality domestic GAAP will become apparent eventually, over a longer period. There are two reasons to expect this outcome. First, from a managerial perspective, given more time, the international accounting harmonisation could encourage companies that used to be debt-based to resort more to equity financing. Owing to substantially greater differences in the disclosure quality expected under IFRS relative to their previous domestic GAAP, these companies may need time to adapt to the new regime. In other words, over a longer period, companies in countries with previously low-quality financial reporting incentives and enforcement may increase their compliance so as to benefit from the provision of enhanced information to outside investors that IFRS can potentially offer. Even if this proves to be the case, however, the impact associated with IFRS would still not be entirely due to the mandating of a new higher-quality accounting standard itself. Instead, it would be due to the evolution of European companies to make the best use of the new system. Secondly, as time goes on, regulatory bodies may notice that the degree of compliance is not satisfactory among companies in countries with low financial reporting incentives and enforcement. This could then invoke further regulatory interventions to improve incentives and enforcement.

Turning to the wider issue of the development of accounting standards globally, our study points to the need for national and international regulators to be more mindful of the fact that accounting standards are only one small part of the system that regulates the financial and governance relationships between companies and investors. IFRS may well be suitable for stock-market-based economies such as the US and the UK. It is by no means certain, however, that what is best for such economies is best for other forms of capitalism. As the EU evolves as an economic block, with social and political institutions and commercial practices that differ markedly from the US, it is logically possible that the US and the EU will also disagree over the design of appropriate accounting standards. The present situation, where IASB and FASB decide what is best for the EU and other major trading blocks may yet prove to be unsustainable.

References

Al-Horani, A., Pope, P. and Stark, A. (2003), 'Research and Development Activity and Expected Returns in the United Kingdom', *European Finance Review*, 7: 27–46.

Ball, R., Robin, A. and Wu, J. S. (2003), 'Incentives Versus Standards: Properties of Accounting Income in Four East Asian Countries', *Journal of Accounting Research*, 36: 235–70.

Botosan, C. and Plumlee, M. (2005), 'Assessing Alternative Proxies for Expected Risk Premium', *The Accounting Review*, 80: 21–53.

Bruner, R., Eades, K., Harris, R. and Higgins, R. (1998), 'Best Practices in Estimating the Cost of Capital: Survey and Synthesis', *Financial Management*, 27: 13–28.

Chan, L., Lakonishok, J. and Sougiannis, T. (2001), 'The Stock Market Valuation of Research and Development Expenditures', *Journal of Finance*, 56: 2431–57.

Chen, F., Jorgensen, B. and Yoo, Y. K. (2004), 'Implied Cost of Equity Capital in Earnings-Based Valuation: International Evidence', *Accounting and Business Research*, 34: 323–44.

Christensen, H., Lee, E. and Walker, M. (2007), 'Cross-sectional Variations in the Economic Consequences of International Accounting Harmonisation: The Case of Mandatory IFRS Adoption in the UK', *International Journal of Accounting*, 42: 341–79.

Christensen, H., Lee, E. and Walker, M. (2008), 'Incentives or Standards: What Determines Accounting Quality Change Around IFRS Adoption?', Working paper (University of Manchester).

Claus, J. and Thomas, J. (2001), 'Equity Premia as Low as Three Percent? Evidence From Analysts' Earnings Forecasts for Domestic and International Stock Markets', *Journal of Finance*, 56: 1629–66.

Cuijpers, R. and Buijink, W. (2005), 'Voluntary Adoption of Non-local GAAP in the European Union: A Study of Determinants and Consequences', *European Accounting Review*, 14: 329–73.

Daniel, K. and Titman, S. (1997), 'Evidence on the Characteristics of Cross-sectional Variations in Stock Returns', *Journal of Finance*, 52: 1–33.

Daniel, K., Titman, S. and Wei, J. (2001), 'Explaining the Cross-section of Stock Returns in Japan: Factors or Characteristics?', *Journal of Finance*, 55: 743–66.

Daske, H. (2006), 'Economic Benefits of Adopting IFRS or US-GAAP – Have the Expected Costs of Equity Capital Really Decreased?', *Journal of Business Finance and Accounting*, 33: 329–73.

Daske, H., Hail, L., Leuz, C. and Verdi, R. (2007a), 'Adopting a Label: Heterogeneity in the Economic Consequences of IFRS Adoption', Working paper (University of Chicago).

Daske, H., Hail, L., Leuz, C. and Verdi. R. (2007b), 'Mandatory IFRS Reporting Around the World: Early Evidence on the Economic Consequences', Working paper (University of Chicago).

Easton, P. (2004), 'PE Ratios, PEG Ratios, and Estimating the Implied Expected Rate of Return on Equity Capital', *Accounting Review*, 79: 79–95.

Easton, P. and Monahan, S. (2005), 'An Evaluation of Accounting-based Measures of Expected Returns', *The Accounting Review*, 80: 501–538.

Fama, E. and French, K. (1992), 'The Cross-section of Expected Stock Returns', *Journal of Finance*, 47: 427–65.

Fama, E. and French, K. (1996), 'Multifactor Explanation of Asset Pricing Anomalies', *Journal of Finance*, 51: 55–84.

Fama, E. and French, K. (1997), 'Industry Cost of Equity', *Journal of Financial Economics*, 43: 153–93.

Gebhardt, W., Lee, C. and Swaminathan, B. (2001), 'Toward an Implied Cost of Capital', *Journal of Accounting Research*, 39: 135–76.

Gode, D. and Mohanram, P. (2003), 'Inferring the Cost of Capital Using the Ohlson-Juettner Model', *Review of Accounting Studies*, 8: 399–431.

Graham, J. and Harvey, C. (2001), 'The Theory and Practice of Corporate Finance: Evidence from the Field', *Journal of Financial Economics*, 61; 187–243.

Guay, W., Kothari, S. and Shu, S. (2005), 'Properties of Implied Cost of Capital Using Analyst Forecasts', Working paper (MIT Sloan School of Management).

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. (1997), 'Legal Determinants of External Finance', *Journal of Finance*, 52: 1131–50.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. (1998), 'Law and Finance', *Journal of Political Economy*, 106: 1113–55.

Lakonishok, J., Shleifer, A. and Vishny, J. (1994), 'Contrarian Investment, Extrapolation, and Risk', *Journal of Finance*, 49: 1541–78.

Lee, C., Ng, D. and Swaminathan, B. (2004), 'International Asset Pricing: Evidence from the Cross Section of Implied Cost of Capital', Working paper (Cornell University).

Lee, E., Liu, W. and Strong, N. (2007), 'UK Evidence on the Characteristics Versus Covariance Debate', *European Financial Management*, 13: 742–56.

Lee, E., Walker, M. and Christensen, H. (2006), *The Cost of Capital in Europe: An Empirical Analysis and the Preliminary Impact of International Accounting Harmonisation*, ACCA Research Report No. 94 (London: CAET).

Leuz, C. (2003), 'IFRS versus US GAAP: Information Asymmetry-based Evidence from Germany's New Market', *Journal of Accounting Research*, 41: 445–72.

Leuz, C., Nanda, D. and Wysocki, P. (2003), 'Earnings Management and Investor Protection: An International Comparison', *Journal of Financial Economics*, 69: 505–27.

Leuz, C. and Verrecchia, R. (2000), 'The Economic Consequences of Increased Disclosure', *Journal of Accounting Research*, 38: 91–124.

Levitt, A. (1998), 'The Importance of High-Quality Accounting Standards', *Accounting Horizons*, 12: 79–82.

Lyon, J., Barber, B. and Tsai, C. (1999), 'Improved Methods for Test of Long-run Abnormal Returns', *Journal of Finance*, 54: 165–201.

Ohlson, J. and Juettner-Nauroth, B. (2005), 'Expected EPS and EPS Growth as Determinants of Value', *Review of Accounting Studies*, 10: 347–64.

Penman, S. (2007), *Financial Statement Analysis and Security Valuation*, 3rd edition (New York: McGraw-Hill).

Strong, N. and Xu, G. (1997), 'Explaining the Cross-section of UK Expected Stock Returns', *British Accounting Review*, 29: 1–23.

Tarca, A. (2004). 'International Convergence of Accounting Practices: Choosing between IFRS and US-GAAP', *Journal of International Financial Management and Accounting*, 15: 60–91.

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ACCA 29 Lincoln's Inn Fields London WC2A 3EE United Kingdom / +44 (0)20 7059 5980 / www.accaglobal.com