

Cross-sectional Variation in the Economic Consequences of International Accounting Harmonisation: The Case of Mandatory IFRS Adoption in the UK

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ABSTRACT

This paper examines the market response of UK companies to the decision by the European Union (EU) to require EU listed firms to adopt International Financial Reporting Standards by the financial year 2005. Rather than focusing on the average effect of this decision on all UK listed companies, this study focuses on the possibility that there may have been significant differences across the population of UK quoted firms in the perceived net benefit of IFRS adoption. The prior GAAP choices of German quoted companies are used to produce a counter-factual proxy for a UK firm's willingness to adopt IFRS.

The study examines two aspects of the market response to mandatory IFRS adoption. First an event study is used to assess the immediate share price response to news about the EU's deliberations on IFRS adoption. Events that both increased and decreased the probability of IFRS adoption are included in this aspect of the study. Second we examine the effect of the mandatory adoption decision on the implied ex-ante costs of equity of UK companies using an earnings based valuation model to infer costs of capital before and after the decision to adopt IFRS across the EU.

Both methodologies reach the conclusion that the economic response to mandatory IFRS adoption is positively related to our counter-factual proxy. Thus we find evidence that mandatory IFRS has not affected UK firms in a uniform way – some firms have made a relative gain and some firms have made a relative loss as a consequence.

Keywords: International Financial Reporting Standards, Mandatory adoption, Economic consequences.

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1. Introduction

The mandatory adoption of IFRS¹ in the European Union (EU) is one of the largest regulatory experiments in financial reporting ever undertaken, and may eventually prove to be a vital step towards global GAAP harmonisation². The EU and European Economic Area (EEA) includes 28 countries with integrated financial markets and more than 7000 listed companies. Almost all EU/EEA listed companies are legally required to adopt IFRS in their consolidated statements no later than 2005³.

In this paper, we examine the economic consequences of mandatory IFRS adoption for UK listed companies. We study both the short term price response to news about IFRS adoption, and the changes in the implied cost of equity for a large sample of firms between a date before the mandatory adoption was expected and a date by which mandatory adoption was effectively certain.

The short run share price response and long run implied cost of equity methods complement each other when testing the effect of mandatory IFRS adoption. The potential advantage of focusing on short run abnormal returns is that we are able to isolate specific days when news affects all firms in the sample. The disadvantage is that it is reliant on precise identification of the event days. In particular it assumes that there has been no leakage of the policy deliberations to the market. Unfortunately the dates on which the probability of mandatory adoption of IFRS changed are highly debatable. In contrast, an advantage of the use of the implied cost of equity method is that it is not sensitive to the identification of specific dates - we simply exclude the period of uncertainty and test

¹ International Financial Reporting Standards (IFRS) is the name of accounting standards produced by the International Accounting Standards Board (IASB).

² The EU's motive for adopting the regulation is the creation of a more transparent and efficient capital market that will facilitate a lower cost of capital for EU companies (EC16/06/2002).

³ EC 16/06/2002 requires all listed companies in a regulated market to comply with IFRS in their consolidated statements no later than 2005 unless they report according to US-GAAP. Member countries can allow adoption to be postponed until 2007 for firms that comply with US-GAAP. The UK has decided not to use this option and all listed firms in a regulated market are therefore required to comply with IFRS from 2005.

the difference between the implied cost of equity before and after the announcement period. However, the estimation of the implied cost of equity is also potentially problematic, because it is often difficult to control for all factors affecting the implied cost of equity over a long period of time. Thus we view the two methodologies as being complementary and, we believe that their joint use should increase the robustness of our conclusions.

We hypothesise that UK companies vary in their willingness to adopt IFRS, because the costs and benefits of IFRS adoption are likely to vary across companies. In terms of the literature on accounting choice the decision to mandate IFRS for UK quoted companies was unusual in the sense that it cannot be simply portrayed as the imposition of a restriction on the accounting choices of UK companies. Prior to 2005 UK firms were not permitted to adopt IFRS for UK financial reporting purposes. After 2005 UK companies are not allowed to use pre-2005 UK GAAP in their consolidated statements for financial reporting purposes. Thus the EU decision changed the choice set for UK firms by mandating a new set of rules for financial reporting that some UK firms might have adopted voluntarily, if they had been given the choice. If UK firms had been given a choice between UK GAAP and IFRS it is logically possible that some would have chosen not to adopt IFRS, and some would have chosen to abandon UK GAAP in favour of IFRS. Thus it is possible that some UK firms would have been constrained by the EU decision, whilst others would have been liberated.

For the purposes of this paper we need a counter-factual proxy for what choices UK firms would have made, if they had been given an option to choose between UK GAAP and IFRS. One possibility, which we explore in this paper, is to exploit the information in the choices made by companies in an economy similar to the UK, but where firms had the choice to adopt IFRS before 2005. In particular Germany is a major EU economy that allowed early adoption of IFRS and that

also experienced extensive early adoption. This combination of Germany and the UK as two major EU economies, but with very different IFRS adoption processes, produces a unique setting for testing the factors affecting the economic consequences of mandatory IFRS adoption in the UK.

We hypothesise that the characteristics of voluntary/early adopters of IFRS or US-GAAP⁴ in an EU jurisdiction that allowed voluntary adoption of international accounting standards (IFRS or US-GAAP) might serve as a viable proxy for how UK firms might have behaved given the same choice. In particular we focus on the choices made by German companies.⁵ In Germany listed companies have had the option to choose between an international accounting regime (IFRS or US-GAAP) and domestic standards for their consolidated statements since 1998⁶. Economic theory predicts that companies committing to an international accounting regime are those that perceive the greatest net-benefit. We measure the degree of similarity to German volunteer adopters by estimating a logistic choice-model using German data and calculating the probability of volunteer adoption in the UK based on this model. We use the estimated probability of voluntary adoption from our model based on German companies as a counter-factual proxy for the probability of voluntary adoption by UK companies.

The advantage of this approach is that it focuses on actual observed choices, there is no potential for response bias, and it is based on a large population of firms. The disadvantage of this approach is that the German GAAP and financial disclosure regime is not the same as UK GAAP. The choice between IFRS and UK GAAP by a UK firm is not the same as the choice between German GAAP

⁴ For brevity we describe German firms that comply with either IFRS or US-GAAP in 2002 as volunteer adopters in this paper.

⁵ An alternative approach might be to ask companies directly what they might have done if they had been given a choice. However this approach is also problematic for the following reasons: 1) firms may not know what they would have done given the choice, 2) many firms may be unwilling to respond to the survey (typical response rates are 20-30%), 3) some firms may not tell the truth.

⁶ In April 1998 KapAEG was adopted in Germany allowing listed companies the option only to comply with either IFRS or US-GAAP in their consolidated statements.

and IFRS by a German firm. The implications of this fact for our research design, is that we run the risk of failing to find a significant affect when one actually exists i.e. our method is potentially biased towards the null. To the extent that the choices of German companies are a poor proxy for the hypothetical choices of UK companies the power of our test will be reduced.

The results are consistent both when analysing abnormal returns around events that changed the likelihood of mandatory IFRS and when examining changes to the implied cost of equity after the decision to make IFRS mandatory from 2005. In both cases we find a significant positive cross-sectional association between the economic response to mandatory IFRS adoption and our counter-factual proxy for the probability of voluntary adoption by UK companies.

The study makes two important contributions. First, understanding the factors that determine which companies achieve a relative cost of capital reduction is important not only to countries that have already decided to make IFRS mandatory, but also to countries that are currently considering taking this step⁷. Second, the study also makes a novel methodological contribution, by showing that under certain circumstances the information contained in voluntary GAAP choices in one economy can predict the economic responses to a mandatory GAAP change in a similar economy.

The remainder of the paper is organized as follows. Section 2 reviews the literature in the area and Section 3 develops the testable hypotheses of the paper. Section 4 describes the methodology and sample including the key dates that changed the likelihood of mandatory IFRS in the EU and the calculation of the counter-factual proxy for voluntary adoption in the UK. Section 5 presents the results and discusses the implications. Section 6 summarizes the paper.

⁷ According to GAAP convergence 2002 over 90% of the 59 countries surveyed intend to convert national standards to IFRS.

2. Literature review

In prior empirical studies on the connection between GAAP changes and the cost of capital the focus has been on voluntary adoption of either IFRS or US-GAAP over domestic standards. The assumption is that the accounting regime affects the quality of information and that the quality of information is related to the cost of capital.

One stream of this research examines proxies for the cost of capital either as an event study around the adoption of IFRS or US-GAAP, or cross-sectionally between companies that have adopted IFRS or US-GAAP and companies that use local-GAAP. Leuz and Verrecchia (2000) and Leuz (2003) take this approach by examining bid/ask-spreads, trading volume and share price volatility as proxies for the information asymmetry component of the cost of capital. They find reduced information asymmetry when companies change from German GAAP (HGB) to either IFRS or US-GAAP, but no significant difference between IFRS and US-GAAP. Contrary to this conclusion Daske (2005) finds no evidence of a reduced cost of capital when using both the residual income valuation model and the Ohlson and Juettner-Nauroth (2005) abnormal earnings growth model to estimate the implied cost of equity. These three studies limit their sample to German companies, thus keeping the institutional settings constant. Cuijpers and Buijink (2005) use a European sample to test the affect of changing from local-GAAP to either IFRS or US-GAAP. They examine information asymmetry proxied by analyst following, forecast dispersion and stock return volatility and the implied cost of capital estimated using the method suggested by Easton et al. (2002). They document a positive effect of adopting IFRS or US-GAAP on analyst following, but fail to find support for a lower implied cost of equity. To summarize, prior research that use proxies for either the cost of capital or components of the cost of capital have reached mixed results.

Another stream of research looks at the market reaction to the announcement of future compliance with IFRS or US-GAAP. The idea is that the market reaction around the announcement contains the change in required risk premium, and thus the change to the cost of capital. Pellens and Tomaszewski (1999) find insignificant market reactions to the announcement of future compliance with either IFRS or US-GAAP in Germany. The statistical power of their test is, however, low due to a sample size of only 16 companies. Karamamou and Nishiotis (2005) use an international sample of 54 companies adopting IFRS and show that companies experience abnormal positive returns around the announcement of future compliance with IFRS. They also find evidence that the positive market reaction is not identical among companies with different characteristics. Thus, companies with low valuations and high growth opportunities experience a stronger market reaction.

Comprix, Muller and Stanford (2003) examine the market reaction to mandatory compliance with IFRS rather than voluntary adoption. They examine abnormal returns in the EU around dates of increased likelihood of mandatory IFRS. Using the Sefcik and Thompson's (1986) approach they connect the abnormal returns to a number of company and country characteristics. They find that companies that are a) audited by a big 5 auditor, b) located in countries that will experience the greatest increase in quality of financial information as a consequence of IFRS, and c) are subject to the highest level of legal enforcement experience significant positive returns. Apart from the nature of the auditor these characteristics are all country specific.

With the exception of Comprix, Muller and Stanford (2003) earlier studies investigate the economic consequences of voluntary adoption. We extend the literature by looking at mandatory adoption of IFRS. Voluntary adoption differs from mandatory adoption both because of the elimination of self selection issues in the latter and because the choice to voluntarily adopt is a signal that include information in itself (Dye, 1985). Although the methodology of Comprix, Muller and Stanford

(2003) is similar to the market reactions tests of this paper the research questions are not. Where they predominantly examine differences among country characteristics we investigate the role of firm characteristics within one country, thus keeping the institutional framework constant. Furthermore, our approach to characterising firms is based on a proxy for firms' willingness to adopt IFRS. We are not aware of any prior studies that connect the information contained in voluntary GAAP choice in one economy to the consequences of mandatory regulation in another country.

Prior studies have mainly focused on the general implications of adoption on companies' cost of capital. In this study we focus on differences in the economic consequences of mandatory IFRS between those likely and unlikely to voluntarily adopt. Differences in economic consequences are of particular interest when evaluating a mandatory policy change, because all firms by definition are treated equally by such a policy, and so firms with a negative net benefit are forced to adopt.

3. Hypotheses development

The starting point of our analysis is the assumption that the costs and benefits of IFRS adoption, relative to company value will vary across firms. The mandatory adoption of IFRS imposes two major kinds of changes on the financial reporting practices of companies. First companies are required to adopt a new set of accounting measurement rules that in some cases will have a material affect on a company's reported earnings and balance sheet values, and in other cases will not.

Second IFRS introduces a new set of required disclosures that in some cases will be greater than the original disclosure requirements and in other cases less.

Empirical research suggest that the cost of capital is related to both disclosure and measurement policies. Examples of such studies are Botosan (1997) that examines the association between

disclosure levels and the implied cost of equity and Francis, LaFond, Olsson and Schipper (2004) that examine the relationship between earnings attributes and the implied cost of equity. Both studies find that a lower quality of information is associated with a higher cost of capital.

The main hypothesis of this paper is:

H 1: The cross-sectional variations in the economic consequences of mandatory IFRS adoption by UK companies are related to the probability that the firm would have adopted IFRS voluntarily if it had been given the choice.

In order to convert Hypothesis H1 into an empirically testable proposition we need to identify specific measurable economic consequences, and we need to specify how to model the probability of (counter-factual) voluntary adoption by UK firms. For the purposes of this paper we focus on two, potentially related, types of economic consequences. First we consider the market response to news about the decision by the EU to mandate IFRS. Second we consider the relative change in implied cost of equity between the time when the EU started to consider IFRS adoption, and the time when the decision to adopt IFRS was effectively final and binding on all member states.

The main hypothesis is divided into two testable hypotheses:

H 1A: The stock price reaction of UK companies to announcements that increased (decreased) the likelihood of mandatory IFRS adoption is positively (negatively) related to their degree of similarity to the characteristics of German voluntary IFRS adopters.

H 1B: The difference between the implied cost of equity of UK companies before and after the decision of mandatory IFRS adoption is negatively related to their degree of similarity to characteristics of German voluntary IFRS adopters.

Both hypotheses exploit the fact that an informationally efficient market should rapidly incorporate the expected costs and benefits of IFRS adoption into share prices. That is to say, that if the market expects UK firms with characteristics similar to German early adopters to have a relative benefit of IFRS over other firms then such firms should experience a reduction in their relative cost of capital after future mandatory IFRS adoption became known, and a relatively positive (negative) response to news indicating that mandatory IFRS adoption was more (less) likely.

Hypothesis 1A tests how the markets initially received the news of mandatory IFRS adoption. Hypothesis 1B tests how the market perceives mandatory IFRS adoption in the longer run. Consistent results for Hypotheses 1A and 1B should increase the robustness of the conclusion with regard to the main hypothesis.

In thinking about these hypotheses it is important to recognise that our focus is on the possibility that some firms may benefit more than others from the implementation of IFRS. In particular we do not deny the possibility that the value of IFRS adoption could be greater in Germany than in the UK. Indeed whilst there does seem to be a common perception that IFRS could be beneficial for German firms (Leuz and Verrecchia, 2000), the general perception of IFRS seems less favourable for UK firms. Indeed some practitioners hold the belief that UK GAAP is of higher quality than IFRS⁸.

⁸ See Accountancy January 1999, p. 6 and Accountancy May 1999, p. 77 for examples.

However, we are not concerned in this paper with testing the overall effect of mandatory IFRS adoption on the cost of capital of UK firms. It could be that the median level of accounting information quality decreases in the UK due to IFRS being of a lower quality than UK accounting standards, but at the same time the effect of IFRS adoption could be smaller for UK companies similar in characteristics to German volunteer adopters. In this case our main alternative hypothesis would be accepted in the UK even though the overall affect of introducing IFRS was to decrease the quality of financial statements and increase the cost of capital.

Another issue we face in relation to the changes to measurement and disclosure policies due to IFRS is the differences between Germany and the UK. Economic theory suggest that a companies' accounting policy choice is driven by it's perception of net benefits. If the perceived net-benefits are at least partly determined by a function of measurement and disclosure issues the function is unlikely to be identical for Germany and the UK, because measurement and disclosure issues vary between these countries. Nobes (2005) examines the differences between German and UK accounting regulation and its likely future effect on the application of IFRS. Nobes (2005) concludes that there are significant differences and that the main drivers of these are variation in the financing systems, legal systems and tax systems. These differences are likely to be correlated with the willingness to adopt IFRS and could therefore introduce noise into our counter-factual proxy for a UK firm's willingness to adopt IFRS. That is to say, that our research design underestimates the differences in economic consequences and that we therefore run the risk of failing to reject that no differences exist when differences actually exist. Thus this issue, in effect, loads the dice in favour of our null hypothesis. The fact that we are able to reject the null, in spite of this issue, suggests that even stronger results in support of our alternative hypotheses could be found if a more powerful counter-factual proxy could be designed than the one we use here.

4. Methodology and sample

4.1 Development of the counter-factual proxy

In this section we explain the development of the counter-factual proxy for UK firms' willingness to adopt IFRS based on their degree of similarity in characteristics with German voluntary IFRS adopters. We use the observed voluntary GAAP choices of German firms to predict which UK firms would be more likely to adopt IFRS given the same choice. The following logistic regression models are used to explain the choice of German firms:

$$Adopter_i = \alpha_0 + \alpha_1 FS_i + \alpha_2 DTM_i + \alpha_3 LMV_i + \varepsilon_i \quad (1)$$

$$Adopter_i = \beta_0 + \beta_1 FS_i + \beta_2 DTM_i + \beta_3 LMV_i + \sum_{k=4}^{10} \beta_k INDDUM_{k,i} + \varepsilon_i \quad (2)$$

$$Adopter_i = \gamma_0 + \sum_{k=1}^7 \gamma_k INDDUM_{k,i} + \varepsilon_i \quad (3)$$

The dependent variable ($Adopter_i$) is assigned the value of 1 if company i complies with an international accounting regime in 2002 and the value of 0 otherwise.⁹ FS_i is the foreign sales of company i divided by its total sales, DTM_i is the long-term debt of company i divided by the sum of its long-term debt and market value, LMV_i is the natural logarithm of the market value of company i , and $INDDUM_{k,i}$ are seven industry dummies assigned to 1 for the industry for which the company i belongs and 0 otherwise. Model 1 (Equation 1) only includes the three company characteristic variables that measures foreign sales, leverage, and size. To capture the long-run norm, we use the 5-year mean value of these variables from 1998 to 2002. Model 2 (Equation 2) adds seven industry dummies to the existing independent variables in Model 1 in order to incorporate any industry

⁹ We do not distinguish between IFRS and US-GAAP. The reason is that we are interested in companies that have net-benefit of committing to an international accounting regime regardless of which. We do, however, re-run the models excluding companies complying with US-GAAP. The results are consistent in all material aspects, which is also consistent with the result of Luez (2003)

effect. Model 3 (Equation 3) includes only these industry dummies. We group companies into industries using the Worldscope industry classification. The three variants enable us to observe whether company characteristics or the industry is more relevant in capturing the economic consequences of mandatory IFRS.

In determining the explanatory variables in Equations 1, 2 and 3 we evaluate the company characteristics identified in the existing literature on voluntary accounting regime choices such as Harris and Muller (1999), Leuz and Verrecchia (2000), Ashbaugh (2001) and Tarca (2004).¹⁰ These studies generally argue that the decision to adopt an international accounting regime is a function of financial performance, leverage, company size, finance need and cross-listing. Tarca (2004) adds foreign exposure and industry as explanatory variables. An important issue is to find proxies that are the same under international accounting standards and German domestic standards. Significant differences could result in wrong conclusions. For instance, leverage measured as total liabilities divided by book value of equity, is larger under HGB than under IFRS (Hung and Subramanyam, 2004). This relationship is driven by the book value of equity being measured significantly lower under HGB than under IFRS, which is consistent with HGB being more ex-ante conservative than IFRS. Hung and Subramanyam (2004) perform a survey of reconciliation items disclosed by companies that adopt IFRS for the first time. Hung and Subramanyam (2004, Table 4) show that differences are significant for total assets and the book value of equity. We therefore avoid these accounting figures.¹¹

¹⁰ In developing our choice model from the German sample, we also applied operational margin as a proxy for performance, sales growth as a proxy for growth, operating cash flow as a proxy for finance need, and a cross-listing dummy variable (assigned to 1 when the company is cross-listed on a non-German exchange and 0 otherwise). However, the results of these variables are not significant in our sample. To avoid weakening the power of our counterfactual proxy in distinguishing UK companies' willingness to adopt the IFRS, we excluded these variables from our final models in Equation 1 and 2.

¹¹ In Equation 1 and 2 our measure of leverage is affected by the accounting regime. According to Hung and Subramanyam (2004) total liabilities tend to be lower under HGB than under IFRS. This means that our measure of leverage will be biased towards zero, thus underestimating leverage's effect on the choice of an international accounting regime.

We compute the counter-factual proxy for a UK company's willingness to adopt the IFRS as follows:

$$\theta_{1,j} = \hat{\alpha}_0 + \hat{\alpha}_1 FS_j + \hat{\alpha}_2 DTM_j + \hat{\alpha}_3 LMV_j \quad (4)$$

$$\theta_{2,j} = \hat{\beta}_0 + \hat{\beta}_1 FS_j + \hat{\beta}_2 DTM_j + \hat{\beta}_3 LMV_j + \sum_{k=4}^{10} \hat{\beta}_k INDDUM_{k,j} \quad (5)$$

$$\theta_{3,j} = \hat{\gamma}_0 + \sum_{k=1}^7 \hat{\gamma}_k INDDUM_{k,j} \quad (6)$$

$$Pr_{l,j} = \frac{1}{1 + e^{-\theta_{l,j}}} \quad (l = 1, 2, \text{ and } 3) \quad (7)$$

where $Pr_{l,j}$ are the probabilities of voluntarily IFRS adoption by company j based on model l (i.e. Models 1, 2, and 3), coefficients $\hat{\alpha}_0$ to $\hat{\alpha}_3$, $\hat{\beta}_0$ to $\hat{\beta}_9$, and $\hat{\gamma}_0$ to $\hat{\gamma}_6$ are estimated from Equations 1, 2, and 3 respectively, and FS_j , DTM_j , LMV_j , and $INDDUM_{k,j}$ are proxies of foreign sales, leverage, and size and industry dummies for company j . The definition of these independent variables follows their German sample counterparts described earlier and are measured as the 5-year mean over the same period of 1998–2002.

4.2 Test of Hypothesis 1A

Hypothesis 1A assumes there is a positive relationship between a UK company's degree of similarity to the characteristics of German voluntary IFRS adopters and their stock price reaction to announcements relating to mandatory IFRS adoption. To test Hypothesis 1A we apply the Sefcik and Thompson (1986) portfolio weighting approach commonly used to test the effect of company

characteristics on stock market reaction to time clustered events. This approach involves the following steps. First, construct a matrix F defined as follows:

$$F = \begin{bmatrix} Int & Pr \end{bmatrix} \quad (8)$$

where Int is an $N \times 1$ vector of ones and Pr is an $N \times 1$ vector of the degree of UK companies' similarity to German volunteer adopters (based separately on Models 1, 2, and 3) and N is the number of sampled UK companies. Second, create portfolio weights W as follows:

$$W = \begin{bmatrix} W'_{Int} \\ W'_{Pr} \end{bmatrix} = (F'F)^{-1} F' \quad (9)$$

where W'_{Int} is the row of portfolio weights based on Int , W'_{Pr} is the row of portfolio weights based on Pr , and F is the $N \times 2$ matrix defined in Equation 8. Third, compute the returns (R_{Pr}) of the portfolio weighted on the information pertaining to Pr as follows:

$$R_{Pr,t} = W'_{Pr} R_{i,t} \quad (10)$$

where $R_{i,t}$ is the $N \times 1$ vector of individual company stock returns on day t , and t covers 521 trading days from 01/01/1999 to 31/12/2000. Finally, we run the following time-series regression:

$$R_{Pr,t} = \alpha + \beta R_{m,t} + \sum_{k=1}^K \delta_k D_{k,t} + \varepsilon_t \quad (11)$$

where α is the intercept, β is the risk coefficient, $R_{m,t}$ is the return on Financial Times All Shares Index on day t , δ_k is the risk-adjusted abnormal returns pertaining to event k , $D_{k,t}$ is a dummy variable for the k_{th} event during the 3-day period (days -1 , 0 , and $+1$ relative to the announcement date) and is set to 1 (-1) if the event is assumed to be favourable (unfavourable) to mandatory IFRS adoption and 0 otherwise. Equations 9 and 10 can also be implemented on the *Int* portfolio, but for brevity we do not report the results. The risk-adjusted abnormal return δ_k reflects the effect of *Pr* on the stock price reaction to the events examined. Sefcik and Thompson (1986) argues that these estimates are equivalent to those in cross-sectional regression of abnormal returns on company characteristics but fully control for the cross-correlation and heteroskedasticity in company disturbances, which is essential in time-clustered event studies.

Equation (11) estimates the relationship between UK companies' degree of similarity to German voluntary IFRS adopters and their stock market reaction to the relevant announcements. In Hypothesis 1A, we expect that UK companies with higher *Pr* values should enjoy a relatively more positive market reaction to announcements that are favourable to mandatory IFRS adoption. This is because they share greater similarity in characteristics to the German volunteer adopters whose accounting regime commitment is due to their perceived net benefits.

4.3 Test of Hypothesis 1B

Hypothesis 1B assumes that long-run changes in the cost of capital of UK companies after the decision of mandatory IFRS adoption is negatively related to their degree of similarity to the characteristics of German voluntary adopters. To test this hypothesis, we calculate the implied cost of equity capital based on the Ohlson and Juettner-Nauroth (2005) abnormal earnings valuation model and the Easton (2004) PEG model. Under the Ohlson and Juettner-Nauroth (2005) approach, the implied cost of equity capital (ICE_{OJ}) is defined as follows:

$$ICE_{OJ} = A + \sqrt{A^2 + \left(\frac{eps_{t+1}}{P_t}\right) \left[\left(\frac{eps_{t+2} - eps_{t+1}}{eps_{t+1}}\right) - (\gamma - 1) \right]} \quad (12)$$

$$A = \frac{1}{2} \left[(\gamma - 1) + \left(\frac{dps_{t+1}}{P_t}\right) \right] \quad (13)$$

where eps_{t+1} and eps_{t+2} are one and two years ahead analyst consensus forecast of earnings per share, dps_{t+1} is the one year ahead analyst consensus forecast of dividend per share, P_t is the current price, and $(\gamma-1)$ is the perpetual growth rate at which the short-term growth decays asymptotically to. We follow Gode and Mohanram (2003) in setting the $(\gamma-1)$ equal to the risk free rate minus 3%, which is the long-term inflation rate. If $(\gamma-1)$ is negative, we set its value to zero following Claus and Thomas (2001). Following Chen, Jorgensen, and Yoo (2004), when $eps_{t+2} > eps_{t+1}$ we assign short-term earnings growth ($eps_{t+2} - eps_{t+1}$) to zero. When the value inside the root is negative, we assume the $ICE_{OJ} = A$. Under the Easton (2004) approach, the implied cost of equity capital (ICE_{PEG}) is calculated as follows:

$$ICE_{PEG} = \sqrt{\frac{(eps_{t+2} - eps_{t+1})}{P_t}} \quad (14)$$

These two models are preferred over the residual income valuation model applied in Gebhardt, Lee, and Swaminathan (2001) as they do not require clean-surplus assumptions. The value of ICE_{PEG} is equivalent to ICE_{OJ} if we assume $(\gamma-1) = 0$ and $dps_{t+1} = 0$. Because ICE_{PEG} requires that $eps_{t+1} < eps_{t+2}$, it tends to skew the sample toward growth stocks.

Following Daske (2005) we compute the implied cost of equity capital on a monthly basis from January 1996 to December 1998 (pre-announcement period) and September 2001 to October 2004 (post-announcement period). We calculate the change (ΔICE_{OJ} and ΔICE_{PEG}) by subtracting the median implied cost of equity of the pre-announcement period from the median implied cost of equity of the post-announcement period. To determine the relationship between UK companies' degree of similarity to German voluntary adopters and changes in cost of capital, we run the following cross-sectional regressions:

$$\Delta ICE_{OJ,j} = \lambda_0 + \lambda_1 Pr_j + \lambda_2 \Delta MV_j + \lambda_3 \Delta BM_j + \lambda_4 \Delta DM_j + \lambda_5 \Delta SG_j + \lambda_6 \Delta OPM_j + \varepsilon_j \quad (15)$$

where $\Delta ICE_{OJ,j}$ is the change in implied cost of equity capital of company j from pre- to post-announcement period, Pr_i is the degree of similarity with German volunteer adopters of company j (based separately on Models 1, 2, and 3), ΔMV_j , ΔBM_j , ΔDM_j , ΔSG_j , and ΔOPM_j are the changes in 3-year median market value, book-to-market value, debt-to-market value, sales growth, and operating profit margin respectively for company j from pre- to post-announcement period.¹² Market value, book-to-market values as well as debt-to-market values have been confirmed by previous research to be correlated with implied cost of equity (Gebhardt, Lee, Swaminathan, 2001; Gode and Mohanram, 2003; Chen, Jorgensen, Yoo, 2004; Botosan and Plumlee, 2005) and are therefore incorporated as control variables. In addition we control for growth proxied by sales growth and profitability proxied by operating profit margin. The same regression of Equation 15 is applied using ΔICE_{PEG} as dependent variable. The coefficient λ_1 gives the relationship between Pr and long-run changes in cost of capital, after controlling for changes in various company-specific attributes over the same period. In Hypothesis 1B we assume that there should be a negative

¹² We calculate the percentage change for market value.

relationship between the Pr and long-run changes in cost of capital. This is again based on the assumption that higher Pr companies bear greater resemblance to German companies that adopted an international accounting regime and therefore have a net economic benefit upon the adoption of IFRS.

4.4 Key dates

The timeline of events leading to the mandatory adoption of IFRS is crucial for this study. For the event study we need to know the days when the market revised its expectations about IFRS adoption. For the cost of capital study we need to identify a benchmark period when the issue of IFRS adoption was far from being resolved and a post-adoption period when the issue of IFRS adoption was clearly settled.

To narrow down the period when expectations changed we first searched The Financial Times and Accountancy for all articles related to IFRS between 1st January 1999 and 31st December 2002. 1999 was the first year where commentators began concrete discussions on mandatory IFRS adoption and 2002 was the year the final directive was formally adopted by the council of ministers. This search revealed that after 31 December 2000 most commentators expected mandatory IFRS adoption in the EU by 2005¹³. This is prior to the formal adoption of the directive but consistent with evidence from Binder (1985) that suggest that formal regulatory announcements are generally anticipated in event studies using public announcements. We therefore narrowed down the search from 1st January 1999 to 31st December 2000. Seven events appeared relevant. These events are tabulated in Table 1.

¹³ E.g. KPMG's (2002) comment on the final adoption of the directive: "In June 2002, the Council of Ministers of the European Union adopted the much anticipated regulation requiring all listed groups in the European Union to apply International Financial Reporting Standards (IFRS) in their financial statements by 2005"

< Insert Table 1 >

Event 1 is the commission's presentation of its preferred option to the Financial Services Policy Group. The preferred option included all the important elements of the final directive. This event was not widely discussed in the Financial Times but due to the early stage and the importance of the Financial Services Policy Group this event is included. Thus, we classify Event 1 as favourable.

The year after the first event is the period with most uncertainty. It involved prolonged discussions about the future structure of the International Accounting Standard Committee (IASC, the IASB's predecessor). On the one side US stakeholders, among them the Securities and Exchange Commission (SEC), wanted less political influence in the accounting standard setting process. On the other side the EU commission had the opposite view. The future structure of the IASC was the main obstacle for the International Organization of Securities Commissions' (IOSCO) endorsement of IFRS. IOSCO is an organisation of securities commissions in the world working to promote high standards of regulation (www.iosco.org). IOSCO endorsement was to be the culmination of the core standard project. A process begun in 1997 jointly by IOSCO and IASC to reach a core set of accounting standards to be used for cross border listings (www.iasb.org). The discussion on structure ended in May 2000 when the IASC decided to follow almost entirely the US proposal for a new structure. In addition to this restructuring a number of high ranking positions in the IASC's board of trustees went to US officials. The new structure and US influence in the board of trustees paved the way for the IOSCO endorsement¹⁴. The endorsement itself turned out to be only

¹⁴ Accountancy June 2000, p. 7: "The (core standard) project took a long time, partly because of the SEC's apparent hostility to anything but US GAAP. However, since the IASC finalised its restructuring proposals – in which the SEC played a major role – it seems to have moderated its approach."

conditional. It allowed countries a number of significant opt-outs¹⁵. The new structure, the appointment of US trustees and the weak conditional endorsement lead to a decreased likelihood of mandatory IFRS adoption in the EU. We use the dates of endorsement and expected endorsement as proxies for moves by the IASC toward the USA and away from the EU commission. Thus, we classify Event 2 and Event 3 as unfavourable.

The period of uncertainty ended in the second half of 2000 when four announcements made it clear that the EU would proceed with the regulation regardless of the new structure of the IASC and its reduced influence on the board of trustees. In June and July the commission pledged its support first through the responsible commissioner and second by a formal communication. Third, ECOFIN, consisting of the EU fiscal ministers, supported the commission's communication. And fourth towards the end of 2000 a survey showed strong support among companies in the EU for mandatory adoption of IFRS. We classify Event 4 to 7 as favourable.

Although, all dates of changed likelihood are in 1999 and 2000 we acknowledge that some uncertainty might still have existed at the beginning of 2001. We therefore exclude the first nine

¹⁵ Accountancy June 2000, p.7 "... the US regulator (SEC) still has concerns about the quality of IFRSs and is thought to be behind IOSCO's less-than-wholehearted endorsement."

FT The Financial Times, May 25, 2000 p2: "The IOSCO agreement will appear anaemic to the Commission. While committing to international standards, the deal permits national regulators several degrees of freedom. They are allowed to require extra disclosure, to apply their own interpretations and to demand items be reconciled to domestic standards.

Brussels will portray this, with some justification, as an exercise in American ego massaging. The US Securities and Exchange Commission thinks its standards are the best, implying that some IASC rules are deficient by comparison. The pick and choose approach of the IOSCO deal could allow the US to keep its beloved rules more or less intact.

The European Commission will perceive similar US dominance in the team of trustees. Mr Volcker is backed up by another regulatory heavyweight in the form of David Ruder, a one-time SEC chairman. None of Europe's seven representatives have held such elevated positions."

Paul Volcker was appointed within days of the IOSCO endorsement. The above view is further supported by a commentary in the Financial Times:

The Financial Times, June 6, 2000 p25: "The Commission is equally critical of the IOSCO deal. It views as disastrous a decision to allow countries a series of opt-outs from global rules. Regulators will have the power to require reinterpretation, greater disclosure and reconciliation to national standards"...

months of 2001 in the analysis of long run changes in the implied cost of capital. We define the pre announcement period as the 36 months from 01/01/1996 to 31/12/1998 and the post announcement period as the 36 months from 01/10/2001 to 30/09/2004.

Before building the counter-factual proxy in Section 4.1 used to extract the characteristics of volunteer adopters we need to define a voluntary *commitment* and to connect this definition to the choice of an international accounting regime. Following Leuz and Verrecchia (2000) we define a voluntary commitment as a decision by the company about what it will disclose before it knows the content of the information. A decision to disclose after the information is known to the company is a voluntary disclosure. The voluntary adoption of an international accounting regime is a commitment because it is not possible to change back to domestic standards in years where the company for some reason decides compliance is undesirable.

The strength of a commitment is determined by a combination of how rigid it is and how long into the future the commitment stretches. Thus, a commitment made before the EU decision to require mandatory IFRS is stronger than a commitment made after the decision. This is because the latter only lasted till 2005, whereas the length of the former was unsure at the time it was made. From the above discussion of key dates we know that most of the uncertainty as to whether IFRS would become mandatory had diminished by the end of 2000. The final decision was, however, not formally made before 2002 even if no dates in 2001 and 2002 appear to significantly change the likelihood of mandatory IFRS. Furthermore, the decision to change accounting regime require a certain period of preparation. KPMG (2000) states that companies need to start the process of transition in 2002 if they are to be ready to comply with IFRS from 2005. Based on these factors we use the accounting regime choices of German companies in 2002 as the dependent variable in the choice model. That is to say, that companies that complied with an international accounting regime

no later than 2002 made a commitment before knowing that IFRS would later become mandatory and therefore it is assumed that they perceived net economic benefits from committing to comply with IFRS.

4.5 The German sample

The German sample is based on all existing and dead companies available from Datastream. We exclude financial institutions, companies with negative common equity, preferred shares, foreign companies, and those cross listed on a non-German stock exchange. Following Daske (2005) and Karamanou and Nishiotis (2005) we should be concerned with the quality of information on accounting standards in commercial databases. The possibility of errors is largest for domestic standards, because a classification identical to the year before rarely results in an error when the company already complies with an international accounting regime. This is because companies rarely switch from international to domestic standards. The opposite is not true. We therefore test all companies classified as domestic standard companies in Germany to the annual reports for 2002. For companies classified as complying with IFRS or US-GAAP we match the Compustat classification to the Datastream classification and check all data that does not agree to the annual reports for 2002. If we are unable to find the annual report for 2002 in Thompson One Banker we classify the accounting standards variable for that company as missing. The data for all other variables in Equations 1 to 3 are obtained from Datastream. The final German sample size for Models 1, 2, and 3 are 403, 386, and 641 respectively. Table 2 shows the size and relevant descriptive statistics for the German sample. Table 2 Panel C describes the accounting standards that the German firms in our sample use in 2002 across the three models. Firms are equally divided between adopters and non-adopters. For instances, adopters account for 51%, 50%, and 53% in the dependent variable of the logistic regressions in Equations 1, 2, and 3 (Models 1, 2, and 3)

respectively. This even distribution ensures that we do not skew heavily toward either adopters or non-adopters in our estimation.

<Insert Table 2>

4.6 The UK sample

Our UK sample is based on all existing and dead UK firms in Datastream. To construct the full UK sample, we exclude financial institutions, companies with negative book value of equity, preferred stocks, foreign companies, and those cross listed on a non-UK stock exchange. A relatively small number of companies that already complied with either US-GAAP or IFRS are also excluded. The data for foreign sales, leverage, and size used to compute the counter-factual proxy in Equations 4 to 6 are from Datastream. For Models 1, 2, and 3 we have 1,310, 1,309, and 2,538 observations respectively. As discussed in Sections 4.2 and 4.3, we apply two sets of tests on the UK companies. The market reaction test of the Hypothesis 1A can be implemented using the full sample. We obtain the daily returns of the individual companies and the Financial Times All Share Index from Datastream. The test of Hypothesis 1B imposes additional data constraints. To measure changes in implied cost of equity over the pre-announcement (January 1996 to December 1998) and post-announcement (September 2001 to October 2004) periods, we obtain analyst earnings forecasts and actual current price from the IBES. The data to compute changes in other control variables over the pre- and post-announcement periods, i.e. size, book-to-market value, leverage, sales growth, and operating profit margin in Equation 15, are from Datastream. This results in a reduced common sample of 469 observations. Table 2 Panels A and B present the size and relevant descriptive statistics for the UK sample applied in our study. In comparison to the German sample, the level of dependence on foreign revenue appears smaller in the UK, although the difference is not significant. In terms of leverage and size, our samples for these two countries are fairly similar.

Table 2 panel D describes the counter-factual proxy of willingness to adopt IFRS. Mean and median are both close to 50% suggesting a fairly equal distribution. This ensures that our subsequent tests are not conducted on UK samples that are heavily skewed toward companies that are either very similar or different in characteristics to German voluntary IFRS adopters.

5. Empirical findings

5.1 The counter-factual proxy

Table 3 presents the results of the logistic regression models (Equations 1 to 3) we use to extract the characteristics of German volunteer adopters.

< Insert Table 3 >

The results of the Model 1 suggest that large companies with a low level of debt financing and a large foreign exposure are most likely to adopt an international accounting regime voluntarily. This is consistent with earlier studies on voluntary commitments. Following the hypotheses developed in Section 3 we expect that companies with these characteristics have the largest net-benefit of mandatory IFRS adoption in the UK. In Model 2, the addition of industry dummies subsumes the relationship with leverage. This implies that there could be an industry influence in the association between voluntary adoption and leverage. However, as described in Footnote 11 the leverage coefficient is biased towards zero, we therefore keep leverage in Equation 2. Model 3 applies only the industry dummies. Notice that the Electronics and Drug/Healthcare industries are significantly associated with voluntary adoption.

5.2 Market reaction

Table 4 presents the abnormal stock returns over the 3-day (-1, 0, and +1) window period for portfolios based on UK companies during public announcements of events that changed the probability of mandatory IFRS adoption in the EU, i.e. the test of Hypothesis 1A.

< Insert Table 4 >

We apply the Sefcik and Thompson (1986) approach and weight the UK companies portfolios (Equations 8 to 10) by their Pr values, which is the counter-factual proxies (Equations 4 to 7) measuring UK firms' willingness to adopt IFRS (Equation 1 to 3). We run time-series regression of the UK Pr weighted portfolios' return on the market portfolio return proxied by FT All Shares Index and a set of event dummies representing the window period covering each of the 7 sampled events (Equation 11). The market portfolio return controls for systematic risk and the event dummies captures the risk-adjusted abnormal returns pertaining to the corresponding event windows. These risk-adjusted abnormal returns are conditional on the Pr values through the portfolio weights. The event dummies are set to 1 (-1) for announcements that are favourable (unfavourable) to mandatory IFRS adoption in the EU and 0 otherwise. For brevity, we only show the coefficients and t-statistics for the events dummies. The last column is based on a dummy variable that combines the values of all 7 events. This enables us to make a joint inference that aggregates the net effect of Pr on market reaction across all 7 events. Panel A shows the result of the tests on the intersection sample with the tests of the Hypothesis 1B in Section 5.2. This enables us to maximise the comparability of the two sets of analyses. Panel B replicates the same set of tests on the full sample without restraint to the data requirements of the tests of Hypothesis 1B. The application to a larger sample provides both robustness and greater power to our event study methodology.

Across both panels of Table 4 the portfolio weighted on Pr values calculated from Model 1 has a significantly positive relationship with the net risk-adjusted abnormal returns of all sampled events as shown in the last column. The net risk-adjusted abnormal returns of this particular portfolio are 0.586% and 0.672% in the intersection and full samples respectively. These findings provide evidence in support of Hypothesis 1A by indicating that UK companies with higher Pr values, i.e. the degree of similarity with the German volunteer adopters, is associated with significantly higher market reaction relative to their lower Pr counterparts. Notice that the net risk-adjusted abnormal returns of the weighted portfolio appear to be higher in both magnitude and statistical significance in the larger sample of Panel B than the intersection sample of Panel A. The wider cross-section provides greater variations in the counter-factual proxy we devised from company characteristics such as foreign sales, leverage, and size. This increases the power of our methodology to distinguish between the market reactions to extreme Pr companies. The significant results for the portfolio weighted on Model 1 Pr in both panels of Table 4 also indicates that they are not confined either to the larger companies that analysts tend to cover or the smaller companies that are not followed.

To evaluate the role of industry effect in the share price response, we construct Models 2 and 3. The former adds industry dummies into Model 1 and the latter contains only the industry dummies. In the last columns of Panels A and B of Table 4, the portfolios weighted on the Model 2 Pr yields 0.534% and 0.488% net risk-adjusted abnormal returns over all events and are both significant. However, in both panels of Table 4 the portfolios weighted on Model 3 Pr consistently yields positive net abnormal returns but none are statistically significant. The general observation here is that industry dummies only seem to add noise to our analysis. There are two possible reasons for this. Firstly, the cross-sectional variation in the economic benefits of mandatory IFRS in the UK

may be more a company-specific effect than an industry effect. Secondly, industry effect may be a crucial factor in determining this benefit but the way we classify the industries may not be appropriate for capturing this. We leave this issue for future research as it is not the key focus of this study.

In terms of individual events, notice that the portfolios weighted on Model 1 Pr have consistently and significantly positive relationship with risk-adjusted abnormal returns associated with Event 1. According to Table 1, this is the day when the Financial Services Policy Group, which comprises of the representatives of the EU finance ministers, were presented with the European Commission's preferred option for accounting harmonisation. This is our earliest sampled major announcement with favourable implication to the EU decision of imposing mandatory IFRS adoption. Event 2 and 3 are considered to have unfavourable implications to full mandatory adoption of IFRS. We expect the Pr value to be negatively associated with market reaction to these cases. By setting the corresponding event dummies to -1 over the measurement windows the anticipated negative relationships will appear with positive signs in our analysis. Notice that portfolios weighted on the Pr values calculated from all three models yields significantly positive relationship with the risk-adjusted abnormal returns associated with Event 3 across all three panels. The results for Event 2 are also mostly significantly positive. These findings confirm that UK companies with higher similarity to German voluntary IFRS adopters experience market reaction that is relatively more negative (for events 2 and 3) than those with lower Pr values. Events 4 to 7 are all considered to be favourable to EU mandatory IFRS adoption. Nevertheless, their results are generally mixed as they vary across and models. However, it is not surprising to observe that the ability of the Pr values to predict cross-sectional variations in market reaction tend to decrease through time. Later announcements only re-confirm their earlier counterparts, which had largely been impounded into the stock price of high Pr value companies.

5.3 Long-run changes in cost of equity

Table 5 presents descriptive statistics on the changes between the pre (January 1996 to December 1998) and post (October 2001 to September 2004) announcement periods in the implied cost of equity and control variables used for the analysis of the long-term effect of mandatory IFRS.

<Insert Table 5>

It reveals a general upward time trend in the implied cost of equity, since their changes are significantly positive when measured in both the Ohlson and Juettner-Nauroth (2005) abnormal earnings valuation model (ΔICE_{OJ}) and the Easton (2004) PEG valuation model (ΔICE_{PEG}). This time trend is consistent with the findings of Daske (2005) in a German sample, Lee, Ng, and Swaminathan (2004, Table 1) in G7 countries, and Botosan and Plumlee (2005, Figure 1) in the US. Changes to the proxies for size (ΔMV) and profitability (ΔOPM) are insignificant. On the other hand, increases in book-to-market value (ΔBM) and debt-to-market value (ΔDM) and decreases in sales growth (ΔSG) are significant, which indicates decline in growth and rise in borrowing between the pre- and post- announcement periods.

Table 6 presents the results of the analysis on long-run changes in implied cost of equity subsequent to the decision to impose mandatory IFRS adoption across the EU.

<Insert Table 6>

We apply cross-sectional regressions (Equation 15) of changes in implied cost of equity capital (ΔICE_{OJ} or ΔICE_{PEG}) on the Pr , which is the counter-factual proxy for willingness to adopt IFRS

controlled by relative changes in market value, changes in book-to-market value (ΔBM), changes in debt-to-market value (ΔDTM), changes in sales growth (ΔSG), and changes in operating profit margin (ΔOPM). The dependent variables and control variables are calculated as their difference in 3-year median value between pre- and post-announcement. The Pr value is calculated based on Models 1 and 2, where the former is based only on company characteristics and industry dummies are added to the latter. Model 3 is excluded for brevity since its performance is weak as shown in Table 4. Panels A and B presents the results based on ΔICE_{OJ} and ΔICE_{PEG} respectively as the dependent variable.

In both Panels A and B of Table 6 the intercepts of all regressions are significantly positive, which confirms the background upward trend of implied cost of equity capital (e.g. Daske, 2005). In Panel A the long-run changes in the implied cost of equity capital obtained from the Ohlson and Juettner-Nauroth (2005) abnormal earnings growth model have a significantly negative relationship with the Pr value estimated from Model 1, which is evidence in support of Hypothesis 1B. This relationship is significant both before and after the addition of control variables, indicating the robustness of our findings. Panel B shows that the coefficients for Pr value in Model 1 are also significantly negative when using the Easton (2004) PEG valuation model. This result is also significant in both univariate and multivariate regressions, indicating our findings are robust even to changes in proxies of implied cost of equity. In general, the results in Table 6 demonstrates that UK companies which share similarities in foreign sales, leverage, and size with the German early adopters have significantly lower increases in the cost of capital between the pre- and post-announcement periods. The results are not subsumed by control variables that correlate with implied cost of equity. Since two of these control variables, i.e. leverage and size are components of the Model 1 itself, this implies that the significant relationship between Pr and changes in implied cost of equity are not simply driven by changes in the values of these two components

between the pre- and post-announcement periods. Although Daske (2005) and Cuijpers and Buijink (2005) did not confirm a significant decrease in cost of equity subsequent to adoption, our study shows that UK companies sharing similar characteristics to German voluntary adopters experienced a significantly lower increase in their cost of equity subsequent to the decision of mandatory IFRS adoption across EU. Higher Pr companies in the UK are therefore associated with higher economic benefits from this regulatory decision relative to their lower Pr counterparts. In both Panels A and B of Table 6, notice that Pr values based on Model 2 bears insignificant relationship with the long-run changes in implied cost of equity. This confirms our observation from Table 4 that the addition of industry dummies only adds noise to the analysis, at least based on our current classification.

5.4 Implications

The inferences from both methodologies used in this study are consistent with significant differences across the population of UK quoted firms in the perceived net benefit of mandatory IFRS adoption.

These results call into question the inferences drawn from prior literature which suggest either a reduced cost of capital (Leuz and Verrecchia, 2000) or no effect (Daske, 2005; Cuijpers and Buijink, 2005). Contrary to these views we conclude that IFRS adoption has resulted in winners and losers. Rather than portraying IFRS as a uniformly good thing or a uniformly bad thing, it is important to recognise that some firms gain and some firms lose from complex mandatory accounting changes such as IFRS. This seems to us to make sense, because if all UK would have benefited from a regime like IFRS then it would have been adopted by the Accounting Standards Board (ASB) years ago.

Although our results do not imply that the cost of capital has been reduced or increased as a consequence of mandatory IFRS in general, the knowledge that significant differences exist among companies is important when considering costs and benefits to society. Implementing mandatory IFRS has the potential to redistribute wealth among agents in society through changes to the cost of capital. Countries currently considering implementing either voluntary or mandatory IFRS could use these results to predict who will be the relative cost-of-capital-winners if they decide to proceed. Furthermore, if the sole aim of the policy is to reduce the cost of capital the best solution might be optional compliance as oppose to mandatory compliance. Optional compliance would allow companies to assess their own net benefits before committing to IFRS.

This paper also makes a methodological contribution by showing that the economic consequences of mandatory accounting regulation in one economy may be partially predictable by using information contained in the accounting policy commitments in a similar economy. This is a particularly interesting finding in the setting we use, because Germany and the UK differ in their approach to accounting regulation. Germany is generally classified as a code-law country and the UK is generally classified as a common-law country (Nobes, 2005). The fact that the same factors are significant determinants of benefits to international accounting harmonisation suggests that benefits are driven by firm-specific characteristics rather than or maybe in combination with the quality of the national legal frameworks firms are departing from. Prior studies have focussed on the quality of national regulation (Comprix, Muller and Standford, 2002). Future research in this area could examine how differences and links between country specific and firm specific factors' affect the cost of capital changes caused by regulatory changes like mandatory IFRS adoption.

6. Summary

In Germany companies have had the option to comply with an international accounting regime (IFRS or US-GAAP) instead of domestic standards since 1998 and voluntary adoption is widespread. In the UK companies have not had this option and compliance with an international accounting regime is therefore very limited. From 2005 IFRS is mandatory in both Germany and the UK as a consequence of EU regulation. We use this unique setting to create a counter-factual proxy for UK firms' willingness to adopt IFRS based on German firms' actual accounting standard choices, and show that this proxy can predict cross-sectional variations in the economic consequences of mandatory IFRS adoption in the UK.

Using an event study methodology we find evidence that the stock price reaction of UK companies to announcements favourable (unfavourable) to mandatory IFRS adoption is positively (negatively) related to our proxy for UK firms' willingness to adopt IFRS. To increase robustness we also study the long-run changes to the implied cost of equity of UK companies after the decision to mandate IFRS. We find that the change to the implied cost of equity is negatively related to our proxy for UK firms' willingness to adopt IFRS. Based on these two methodologies we infer that cross-sectional variations in the economic consequences of mandatory IFRS adoption by UK companies can be predicted by their willingness to adopt IFRS proxied by the degree of similarity in characteristics with German voluntary IFRS and US-GAAP adopters.

That is to say mandatory IFRS have a different effect on the cost of capital depending on company characteristics. This suggests that companies with similar characteristics to German voluntary adopters have the largest benefits from international accounting harmonisation and in particular of mandatory IFRS. Prior studies aims at identifying a uniform impact of IFRS across firms, our conclusion question the relevance of this approach.

This study also provides evidence on the information contained in companies' accounting policy commitments. We show that commitments made in one country can be used to predict the economic consequences of mandatory regulation in another country. The two countries investigated differ significantly in their approach to accounting regulation, with UK's common-law regulation being more similar to IFRS than Germany's code-law regulation. Thus, whereas the prior literature generally argue that relative reductions in cost of capital is related to the quality improvements in the legal framework this study suggests that relative benefits are at least partly explained by company specific factors.

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Table 1: Events changing the likelihood of mandatory IFRS adoption in the EU

Event	Effect on likelihood	Date	Source	Description
1	Favourable	28/01/1999	FT04/04/99	The Financial Services Policy Group, representatives of EU finance ministers, were presented with the European Commission's preferred option for accounting harmonisation.
2	Unfavourable	22/03/2000	IASC website 1)	Preliminary announcement of IOSCO endorsement of IFRS.
3	Unfavourable	18/05/2000	FT25/05/00	Formal IOSCO endorsement of IFRS. IOSCO conditional endorsement decreased the likelihood of mandatory IFRS in the EU because it was the culmination of US influence in the IASC (later IASB) as it was connected to a changed structure much as proposed by the FASB and a changed team of trustees with more influence than the US. Furthermore, the IOSCO's conditional endorsement was disappointing to the commission because it allows countries a series of opt-outs. Opt-outs that was expected to be used by the US.
4	Favourable	09/06/2000	IASC website 1)	Fritz Bolkerstein, EU commissioner, makes a preparatory announcement that IFRS will be proposed as compulsory for all EU-listed companies.
5	Favourable	13/06/2000	FT14/06/2000	The European Commission's propose that all listed EU companies should prepare their consolidated financial reports in accordance with IFRS.
6	Favourable	17/07/2000	FT17/07/00	ECOFIN meeting supporting the commissions proposal on this day and Britain calls for the completion of the European single market in financial services to be brought forward
7	Favourable	27/11 2000	FT28/11/2000	PricewaterhouseCoopers survey published. The survey shows support for IFRS among CFOs of European companies.

This table presents the events that changed the likelihood of mandatory IFRS adoption in the EU. The events were identified by searching The Financial Times (FT) and Accountancy from January 1 1999 to December 31 2000. The dates shown are the event dates. The two dates marked by 1) are obtained from Comprix, Muller, Stanford (2002). Favourable means that the event increased the likelihood of mandatory IFRS in the EU and unfavourable means that the event decreased the likelihood of mandatory IFRS in the EU.

Table 2: Descriptive statistics for the United Kingdom and Germany

Panel A: Descriptive statistics on company specific characteristics for Models 1 and 2													
		Germany				Intersection sample				United Kingdom			
		OBS	FS	DTM	LMV	OBS	FS	DTM	LMV	OBS	FS	DTM	LMV
Model 1 Pr	Mean		35.0%	14.5%	11.8		24.3%	14.4%	12.0		23.2%	11.7%	11.2
	Median		34.1%	7.7%	11.7		15.2%	8.7%	12.1		9.2%	6.0%	11.1
	Standard deviation		27.5%	17.1%	1.6		26.4%	14.0%	1.5		31.0%	14.1%	1.7
	Sample size	389				469					1310		
Model 2 Pr	Mean		34.9%	14.6%	11.8		24.3%	14.4%	12.0		23.2%	11.7%	11.2
	Median		33.6%	7.6%	11.7		15.2%	8.7%	12.1		9.2%	6.0%	11.1
	Standard deviation		27.6%	17.1%	1.6		26.4%	14.0%	1.5		31.0%	14.1%	1.7
	Sample size	382				469					1309		

Panel B: Descriptive statistics on industries (Model 3 only)													
		Germany				Intersection sample				United Kingdom			
Industry (Worldscope classification)		OBS		%		OBS		%		OBS		%	
Resource/Utility (5200, 5800, 8200)		29		4		16		3		230		9	
Electronics (3700, 4000)		104		17		74		16		377		15	
Construction/Manufacture (1300, 1600, 1900, 2500, 2800, 4900, 5500, 6100, 7300)		168		27		139		30		547		22	
Retail/Transport/Media (6400, 7000, 7900)		40		6		62		13		265		10	
Non-cyclical consumer goods (2200, 4600, 7600)		35		6		24		5		101		4	
Drugs/Healthcare (3400)		16		3		18		4		85		3	
Other (3100, 6700, 8500, 8800)		231		37		136		29		933		37	
Total		623		100		469		100		2538		100	

Table 2 continued

		Model 1		Model 2		Model 3	
		OBS	%	OBS	%	OBS	%
Panel C: German firms' accounting standard choice							
Adopter							
	IFRS	129	33	126	33	216	35
	US-GAAP	70	18	66	17	114	18
Non-adopters (HGB)		199	51	192	50	330	53
		190	49	190	50	293	47
Panel D: Descriptive statistics for the counter-factual proxy of UK firms' willingness to adopt IFRS (Pr)							
		Model 1	Model 2	Model 3			
Intersection sample	Mean	0.48	0.49	0.51			
	Median	0.47	0.48	0.45			
	Standard dev.	0.17	0.26	0.21			
Full sample	Mean	0.43	0.45	0.53			
	Median	0.41	0.43	0.63			
	Standard dev.	0.26	0.26	0.19			

This table shows the sample size and descriptive statistics on the data used to estimate the logistic regression models of voluntary adoption of international accounting regimes (IFRS/US-GAAP) in Germany and to calculate the counter-factual proxy (i.e. the likelihood of voluntary adoption) in the United Kingdom. Company characteristics such as foreign sales (*FS*), leverage (*DTM*), and size (*LMV*) are measured as the 5-year mean from 1998 to 2002. Industry dummies are assigned based on industry groups from Worldscope. Panel A presents the sample for Models 1 and 2 and Panel B provides the sample for Model 3. OBS is the sample size. *FS* is calculated as the foreign sales to total sales. *DTM* is calculated as long term debt/(long term debt + market capitalisation). *LMV* is the natural logarithm of market value. Panel C describes the accounting standard choice of German firms in the sample used in building the logistic regression models. Panel D presents the distribution of the counter-factual proxy of willingness to adopt IFRS among UK firms (Pr). Intersection sample is applied to test of both Hypotheses 1A and 1B. Full sample is only applied to test of Hypothesis 1A.

Table 3: Characteristics of German early adopters of international accounting regimes (IFRS or US-GAAP)

Variables	Predicted sign	Model 1	Model 2	Model 3
FS	+	2.0685 [5.01]	2.002 [3.91]	
DTM	-	-2.6003 [-3.68]	-1.1696 [-1.59]	
LMV	+	0.2630 [3.40]	0.3908 [3.89]	
Resource/Utility	?		-1.6459 [-2.64]	-0.7300 [-1.84]
Electronics	?		0.4025 [1.03]	0.6816 [2.53]
Construction/manufacture	?		-1.6030 [-5.01]	-1.0587 [-5.04]
Retail/transport/media	?		-1.4058 [-2.29]	-1.2533 [-3.44]
Non-cyclical consumer goods	?		-3.8042 [-4.01]	-3.3257 [-4.49]
Drugs/Health care	?		NA	2.1857 [2.10]
Intercept	?	-3.4120 [-3.77]	-4.3002 [-3.80]	0.5224 [3.84]
Pseudo R ²		0.1143	0.2425	0.1274
Observations		389	382	623

This table presents the results of the logistic regression models of German firms' accounting regime choice with t-statistics (in brackets). The dependent variable is set to 1 for German voluntary IFRS/US-GAAP adopters and 0 otherwise and the independent variables are company characteristics (Model 1), both company-specific characteristics and industry dummies (Model 2), and industry dummies only (Model 3). *FS* is foreign sales to total sales. *DTM* is long term debt/(long term debt + market value). *LMV* is the natural logarithm of market value. See Table 2 for the Worldscope industry classification code for the industry dummies. In Model 2, there is no observation for the Drug/Healthcare companies because they all complied either with IFRS or US-GAAP.

Table 4: Abnormal stock returns of UK companies conditional on their degree of similarity to German voluntary IFRS adopters during announcements of decisions to impose mandatory IFRS adoption in the EU

Events	1	2	3	4	5	6	7	Net
Dates	28/01/1999	22/03/2000	18/05/2000	09/06/2000	13/06/2000	17/07/2000	27/11/2000	
Effect	Favourable	Unfavourable	Unfavourable	Favourable	Favourable	Favourable	Favourable	
Panel A: Common sample								
Model 1 Pr	0.00921 [2.66]	0.01441 [1.40]	0.01698 [3.54]	-0.00753 [-12.70]	-0.00606 [-6.15]	0.01011 [2.71]	-0.00211 [-0.53]	0.00586 [1.95]
Model 2 Pr	0.00369 [1.32]	0.01793 [2.75]	0.01910 [4.23]	-0.00323 [-5.92]	-0.00803 [-6.42]	0.01160 [14.32]	-0.00997 [-1.93]	0.00534 [1.77]
Model 3 Pr	-0.00694 [-2.79]	0.02818 [5.09]	0.02386 [6.31]	0.00021 [0.24]	-0.00976 [-3.44]	0.01607 [10.29]	-0.02044 [-2.67]	0.00554 [1.30]
Panel B: All companies								
Model 1 Pr	0.01117 [4.59]	0.01386 [1.97]	0.01204 [4.28]	0.00453 [1.16]	-0.00272 [-1.07]	0.00725 [6.26]	-0.00311 [-0.96]	0.00672 [3.14]
Model 2 Pr	0.00344 [3.78]	0.01471 [2.13]	0.01644 [4.48]	0.00362 [1.31]	-0.00665 [-3.87]	0.01074 [10.31]	-0.01282 [-2.51]	0.00488 [1.77]
Model 3 Pr	-0.00845 [-6.20]	0.02054 [2.04]	0.02126 [6.64]	0.00328 [2.58]	-0.00898 [-4.54]	0.01396 [4.21]	-0.02309 [-2.38]	0.00351 [0.84]

This table presents the abnormal stock returns and t-statistics (in brackets) of UK companies during announcements of mandatory IAS adoption in the EU based on the Sefcik and Thompson (1986) weighted portfolio approach over the test period of 01/01/1999 to 31/12/2000. The portfolios are weighted by the counter-factual proxy for willingness to adopt IFRS based on three models. Each model is estimated using a German sample where the dependent variable is set to 1 for German voluntary IFRS/US-GAAP adopters and 0 otherwise and the independent variables are company characteristics, which include foreign sales, leverage, and size (Model 1), both company characteristics and industry dummies (Model 2), and industry dummies only (Model 3). The time-series returns of the weighted portfolios are regressed over the test period on market portfolio returns proxied by FT All Shares Index and a set of event dummies representing the window period covering each of the 7 sampled events. The event dummies are set to 1 (-1) for announcements that are favourable (unfavourable) to mandatory IAS adoption in the EU and 0 otherwise. Each column shows the coefficients estimated for the corresponding events and the t-statistics adjusted for heteroskedasticity. The last column is based on a dummy variable that combines the values of all 7 events. Panel A shows the results for the common sample of 469 companies used in the test of long-run changes in implied cost of equity. Panel B shows the results from full sample, i.e. 1,310, 1,309, and 2,538 companies for Models 1, 2, and 3 respectively.

Table 5: Descriptive statistics on changes in implied cost of capital and control variables

	ΔICE_{OJ}	ΔICE_{PEG}	ΔMV	ΔBM	ΔDTM	ΔSG	ΔOPM
Mean	0.028	0.036	0.004	0.304	0.156	-23.359	1.951
StDev	0.173	0.116	0.095	0.546	0.426	84.263	81.891
t-statistics (Mean)	3.505	6.721	0.912	12.058	7.931	-6.003	0.516
Observations	469						

This table present descriptive statistics on changes in the calculated implied cost of equity according to the Ohlson and Juettner-Nauroth (2005) abnormal earnings growth model (ΔICE_{OJ}) and the Easton (2004) PEG model (ΔICE_{PEG}). ΔMV is relative changes in the natural logarithm of market value. ΔBM is the change book-to-market value. ΔDTM is the change in long-term debt to market value. ΔSG is the change in sales growth. ΔOPM is the change to the operational margin. The changes are calculated as the difference in 36-month median between the pre-announcement period (January 1996 to December 1998) and post-announcement period (October 2001 to September 2004).

Table 6: Changes in implied cost of equity capital of UK companies conditional on their degree of similarity to German voluntary IFRS adopters following the decision to impose mandatory IFRS adoption in EU

	Intercept	Pr	ΔMV	ΔBM	ΔDTM	ΔSG	ΔOPM
Panel A: ΔICE_{OJ}							
Model 1	0.07903 [4.04]	-0.10642 [-3.01]					
	0.07382 [3.69]	-0.09826 [-3.08]	-0.52616 [-5.00]	-0.01809 [-0.87]	0.03086 [2.74]	-0.00000 [-0.01]	-0.00008 [-0.93]
Model 2	0.03436 [2.78]	-0.01297 [-0.63]					
	0.03921 [2.78]	-0.00952 [-0.52]	-0.52285 [-4.91]	-0.01660 [-0.78]	0.03436 [2.96]	0.00000 [0.01]	-0.00007 [-0.79]
Panel B: ΔICE_{PEG}							
Model 1	0.06867 [3.79]	-0.06867 [-2.10]					
	0.06272 [3.49]	-0.05876 [-2.10]	-0.56048 [-5.66]	-0.01881 [-0.93]	0.02250 [2.25]	-0.00004 [-0.49]	0.00004 [0.47]
Model 2	0.03384 [3.02]	0.00368 [0.19]					
	0.03036 [2.90]	0.00787 [0.48]	-0.56029 [-5.64]	-0.01862 [-0.91]	0.02484 [2.42]	-0.00004 [-0.48]	0.00004 [0.55]

This table presents the coefficient and t-statistics (in brackets) of cross-sectional regressions of changes in implied cost of equity on the degree of similarity to German voluntary adopters (Pr) controlled by changes in market value (ΔMV), changes in book-to-market value (ΔBM), changes in debt-to-market value (ΔDTM), changes in sales growth (ΔSG), and changes in operating profit margin (ΔOPM). The implied cost of equity is calculated based on the Ohlson-Juettner (2005) abnormal earnings valuation model (ΔICE_{OJ}) in Panel A and the Easton (2004) PEG valuation model (ΔICE_{PEG}) in Panel B. The changes in implied cost of equity and control variables are calculated as the difference in 36-month median between the pre-announcement period (January 1996 to December 1998) and post-announcement period (October 2001 to September 2004). The Pr value is calculated based on two models. Each model is estimated using German sample where the dependent variable is set to 1 for German voluntary IFRS/US-GAAP adopters and 0 otherwise and the independent variables are company characteristics, which includes foreign sales, leverage, and size (Model 1) and both company characteristics and industry dummies (Model 2). The t-statistics are adjusted for heteroskedasticity.